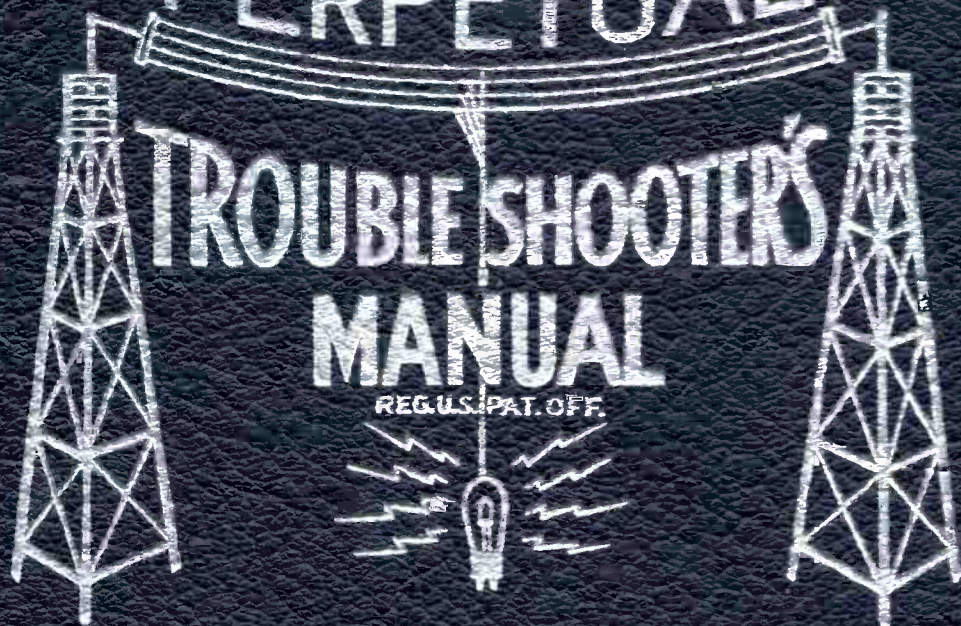


VOLUME IX

PERPETUAL



JOHN F. RIDER

PERPETUAL
TROUBLE SHOOTER'S MANUAL

Reg. U.S. Pat. Off.

VOLUME IX

by

JOHN F. RIDER



JOHN F. RIDER PUBLISHER, INC.

404 Fourth Avenue

New York City

Other Books
by
JOHN F. RIDER

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

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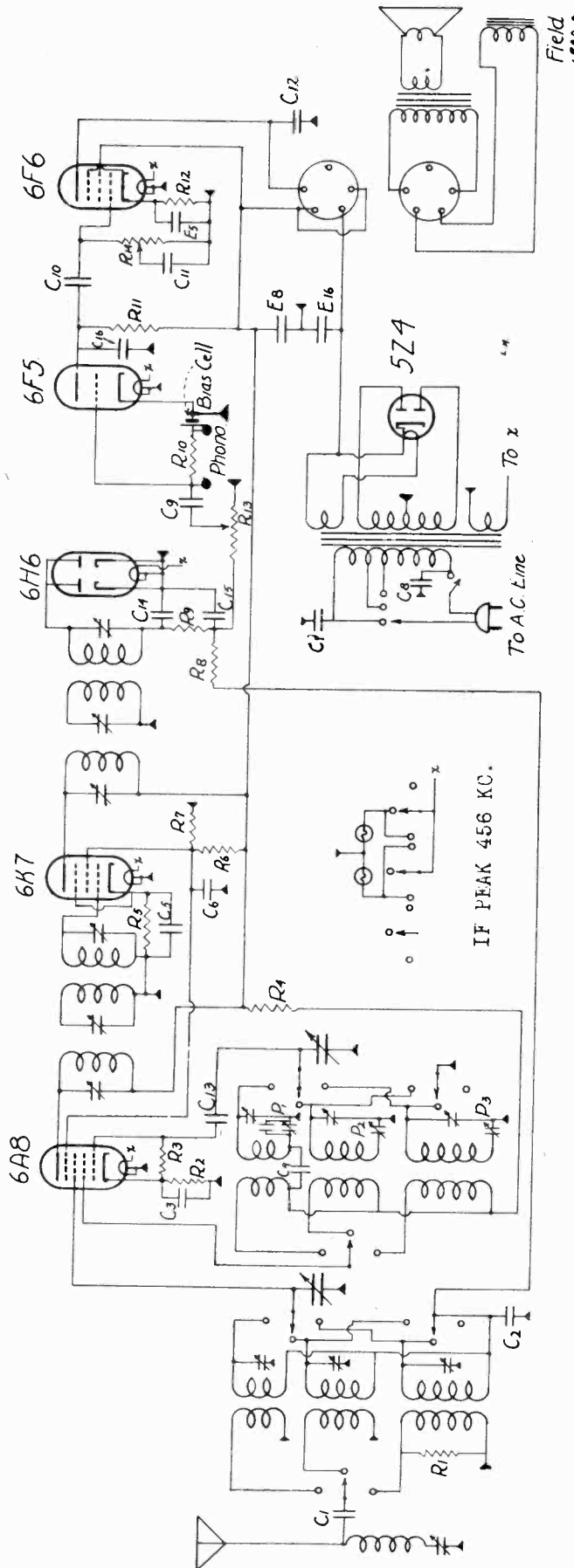
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Printed in U. S. A.

AIR KING PRODUCTS CORP.

MODEL 6E
Schematic
Data

MODEL "6E"



R 1	15,000 ohms	- 1/4 w.	C 1	.005	- 600 v.
R 2	300	"	C 2	.05	- 400 v.
R 3	50,000	"	C 3	.1	- 200 v.
R 4	20,000	"	C 4	.02	- 400 v.
R 5	400	"	C 5	.1	- 200 v.
R 6	25,000	"	C 6	.1	- 200 v.
R 7	40,000	"	C 7	.05	- 400 v.
R 8	1,000,000	"	C 8	.05	- 400 v.
R 9	60,000	"	C 9	.02	- 400 v.
R 10	1,000,000	"	C 10	.02	- 400 v.
R 11	500,000	"	C 11	.005	- 600 v.
R 12	400	"	C 12	.005	- 600 v.
R 13	500,000	"	C 13	.00085	- mica
R 14	500,000	"	C 14	.0001	- mica
P 1	.0027 max.	"	C 15	.0001	- mica
P 2	.0005 max.	"	C 16	.0001	- mica
P 3	.00015 max.	"			
E 5	5 mfd.	- 35 v.			
E 8	8 mfd.	- 400 v.			
E 16	16 mfd.	- 450 v.			

6T AC 3 BAND SUPERHETERODYNE RECEIVER

ANTENNA AND GROUND CONNECTIONS.
An antenna from 50 to 100 feet long is recommended. A good ground wire is absolutely essential on this receiver.

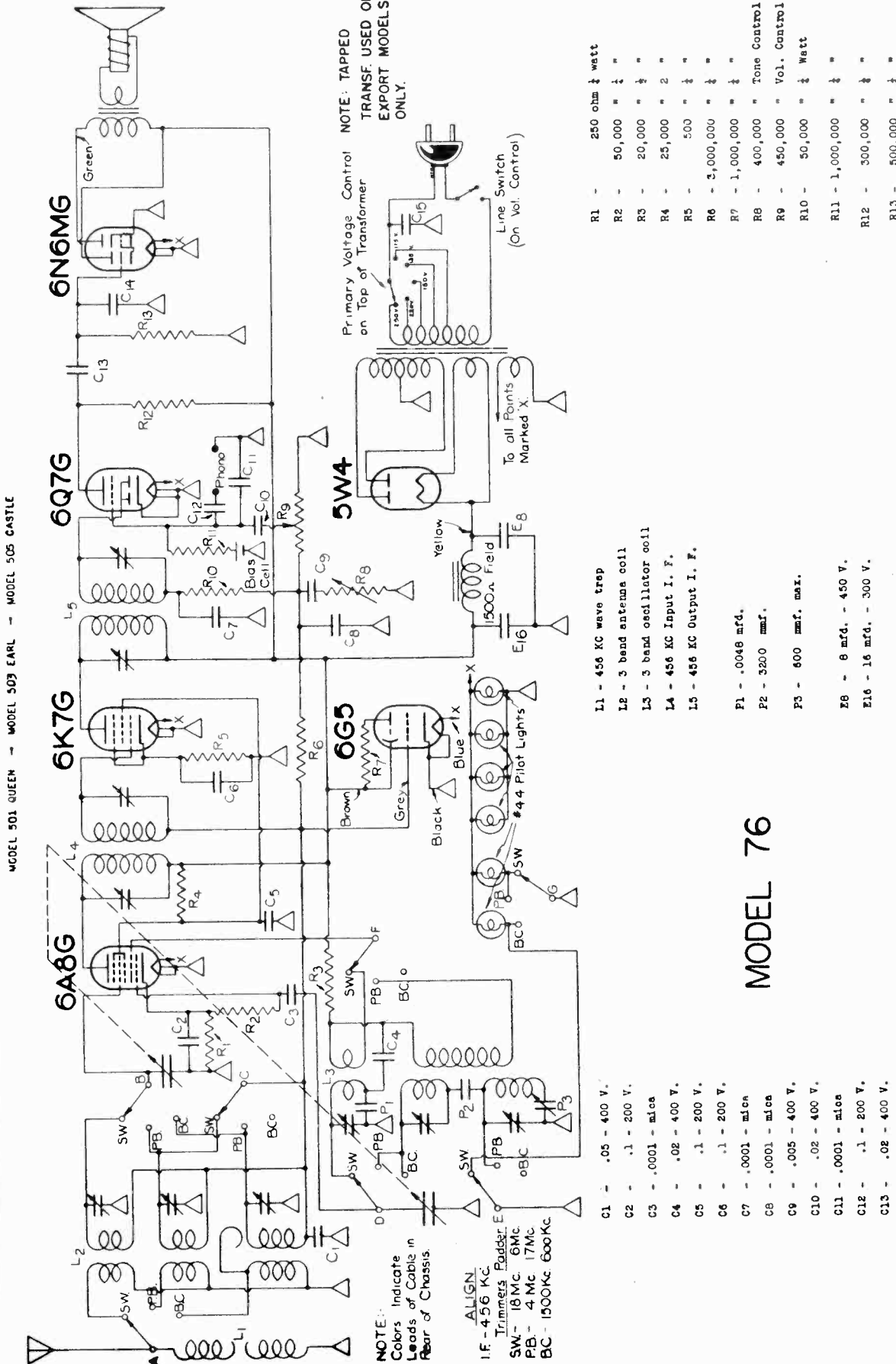
POWER SUPPLY.
This receiver is designed to operate from the 115-135 or 220 A.C. 50 cycle lines. The voltage change is accomplished by removing the cover from the power transformer and connecting the flexible lead to the desired voltage terminal.

LOCATION OF CONTROLS.
The knob on the lower right is the on-off switch is the volume control and the knob directly below the selector knob is the wave change switch.

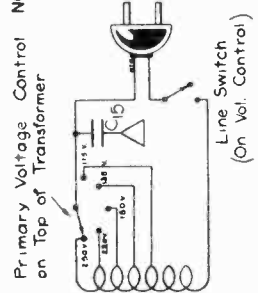
OPERATION.
Turn station selector knob to secure desired stations. When tuning in a set, set tuning control carefully to maximum station volume, then adjust volume to desired level with volume control knob.

MODELS 76, 501, 503, 505
Schematic

AIR-KING PRODUCTS CORP.



NOTE: TAPPED TRANSFORMER USED ON EXPORT MODELS ONLY.



R1	250 ohm	1/2 watt
R2	50,000	" "
R3	20,000	" "
R4	25,000	" 2 "
R5	500	" "
R6	3,000,000	" "
R7	1,000,000	" "
R8	400,000	" Tone Control
R9	450,000	" Vol. Control
R10	50,000	" 1/2 Watt
R11	1,000,000	" "
R12	300,000	" "
R13	500,000	" "

- L1 - 456 KC wave trap
- L2 - 3 band antenna coil
- L3 - 3 band oscillator coil
- L4 - 456 KC Input I. F.
- L5 - 456 KC Output I. F.

- P1 - .0048 mfd.
- P2 - 3200 mmf.
- P3 - 600 mmf. max.
- E8 - 8 mfd. - 450 V.
- E16 - 16 mfd. - 300 V.

MODEL 76

- C1 - .05 - 400 V.
- C2 - .1 - 200 V.
- C3 - .0001 - mica
- C4 - .02 - 400 V.
- C5 - .1 - 200 V.
- C6 - .1 - 200 V.
- C7 - .0001 - mica
- C8 - .0001 - mica
- C9 - .005 - 400 V.
- C10 - .02 - 400 V.
- C11 - .0001 - mica
- C12 - .1 - 200 V.
- C13 - .02 - 400 V.
- C14 - .0005 - mica
- C15 - .02 - 400 V.

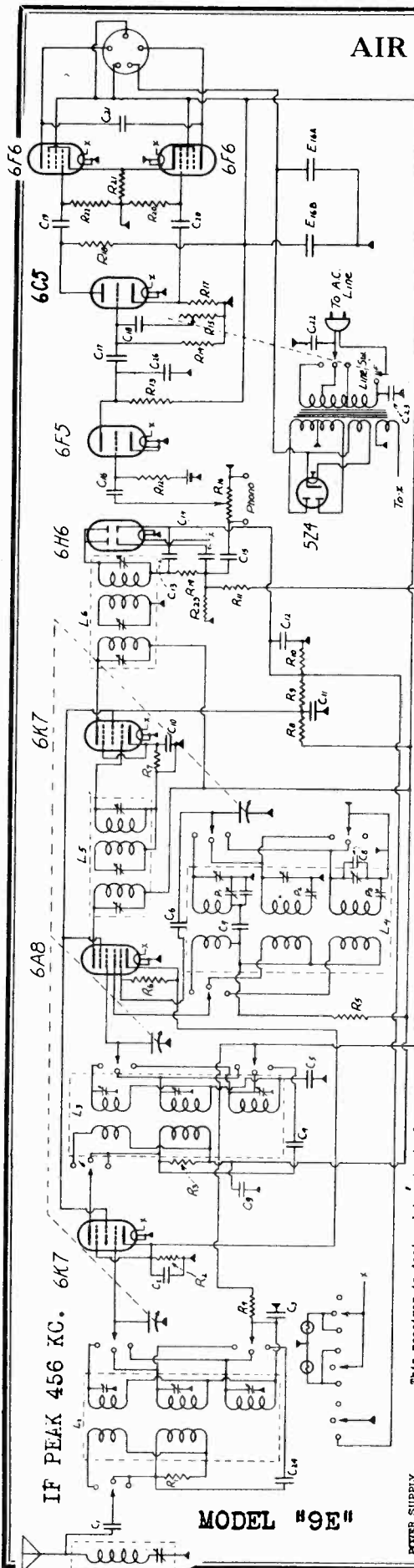
Switches A, B, C, D, E, F, G - Two decks; outside deck, 3 section 1 to 3 position each section - inside deck, 4 section 1 to 3 position each section.

NOTE: Colors Indicate Leads of Cable in Rear of Chassis.

ALIGN
I.F. - 456 KC.
Trimmers: Powder E
SW - 18 Mc. 6Mc
PB - 4 Mc. 17Mc
BC - 1500Kc 600Kc

AIR KING PRODUCTS CORP.

MODEL 9E
Schematic
MODEL 252
Schematic, Socket



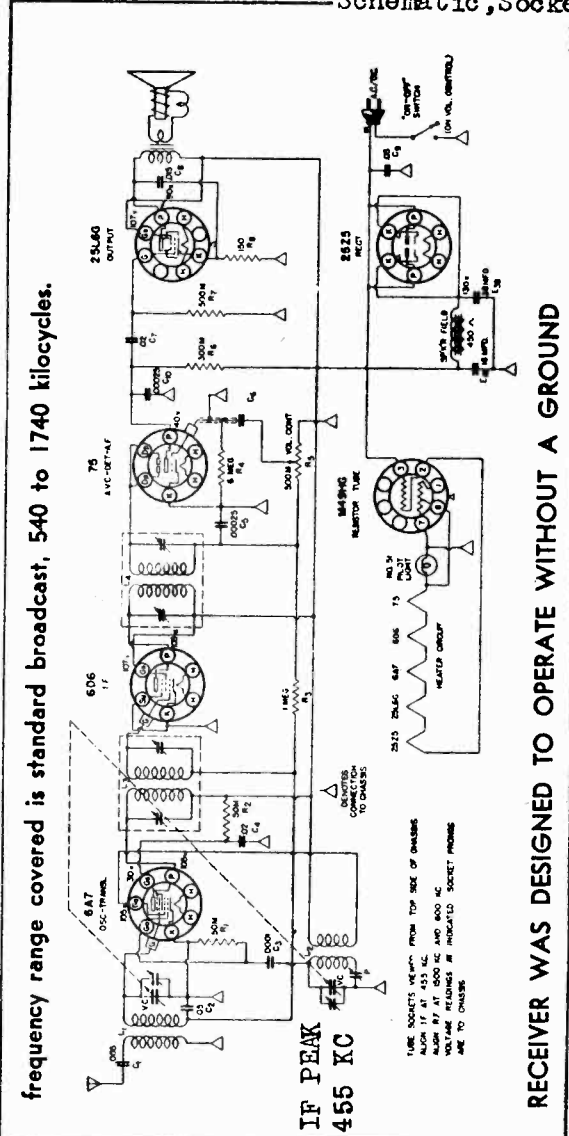
This receiver is designed to operate from the 115-135 or 220 A.C. cycle line. The change is accomplished by removing the cover from the power transformer and connecting the flexible lead to the desired voltage terminal.

tone cont.

R 1	15,000 ohms	1/4 W.	R 15	500,000
R 2	200	1/4 W.	R 16	500,000
R 3	25,000	1/4 W.	R 17	60,000
R 4	300,000	1/4 W.	R 18	60,000
R 5	20,000	1/4 W.	R 19	50,000
R 6	50,000	1/4 W.	R 20	50,000
R 7	400,000	1/4 W.	R 21	310
R 8	10,000	1/4 W.	R 22	500,000
R 9	10,000	1/4 W.	R 23	500,000
R 10	15,650	1/4 W.	R 24	500,000
R 11	1,000,000	1/4 W.	P 1	-.005
R 12	1,000,000	1/4 W.	P 2	-.0005
R 13	500,000	1/4 W.	P 3	-.00015
R 14	500,000	1/4 W.		

C 1	-.005
C 2	-.15
C 3	-.005
C 4	-.005
C 5	-.005
C 6	-.00085
C 7	-.05
C 8	-.00002
C 9	-.02
C 10	-.1
C 11	-.1
C 12	-.1
C 13	-.0001
C 14	-.0001
C 15	-.02

E 14A	400 V.
E 14B	400 V.
E 14C	400 V.
E 14D	400 V.
E 14E	400 V.
E 14F	400 V.
E 14G	400 V.
E 14H	400 V.
E 14I	400 V.
E 14J	400 V.
E 14K	400 V.
E 14L	400 V.
E 14M	400 V.
E 14N	400 V.
E 14O	400 V.
E 14P	400 V.
E 14Q	400 V.
E 14R	400 V.
E 14S	400 V.
E 14T	400 V.
E 14U	400 V.
E 14V	400 V.
E 14W	400 V.
E 14X	400 V.
E 14Y	400 V.
E 14Z	400 V.



frequency range covered is standard broadcast, 540 to 1740 kilocycles.

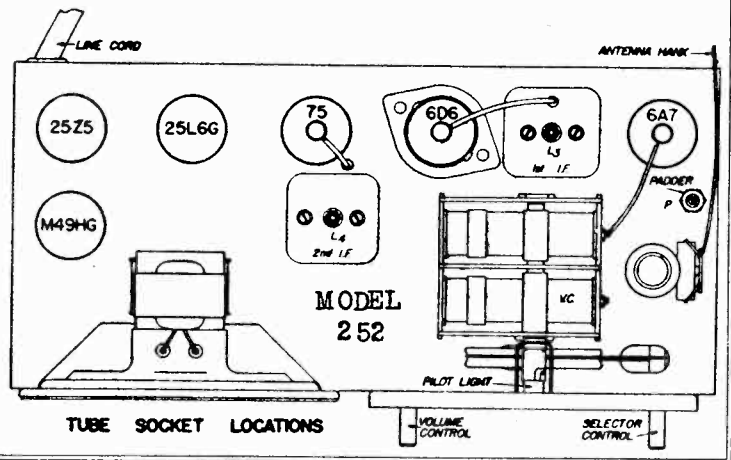
IF PEAK
455 KC

TUBE SOCKETS VIEWED FROM TOP SIDE OF CHASSIS
ALSO IF AT 455 KC. HAS 455 KC.
VOLUME RELAY IS IN INDICATED SOCKET POSING
ARE TO CHASSIS

RECEIVER WAS DESIGNED TO OPERATE WITHOUT A GROUND

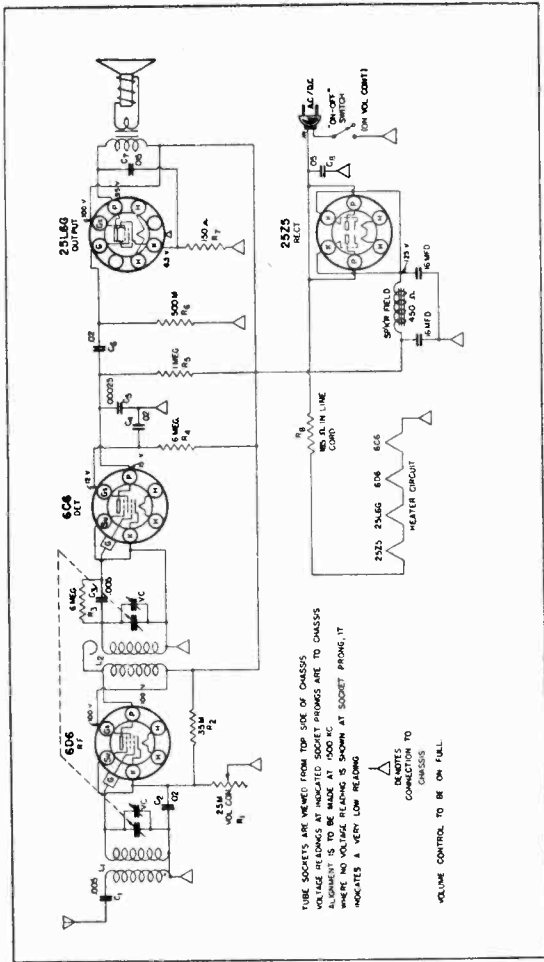
MODEL 252

110 to 125 volts 50-60 cycles AC or DC

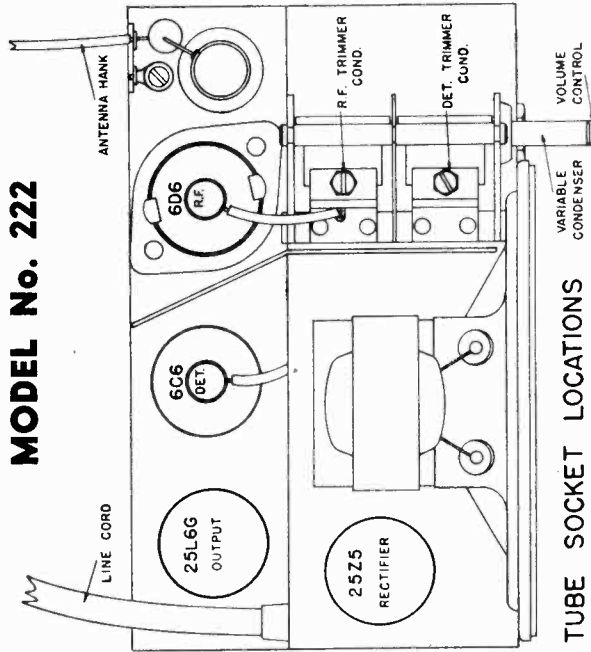


MODEL 222
Schematic, Socket
MODEL 250-B
Schematic

AIR-KING PRODUCTS CORP.



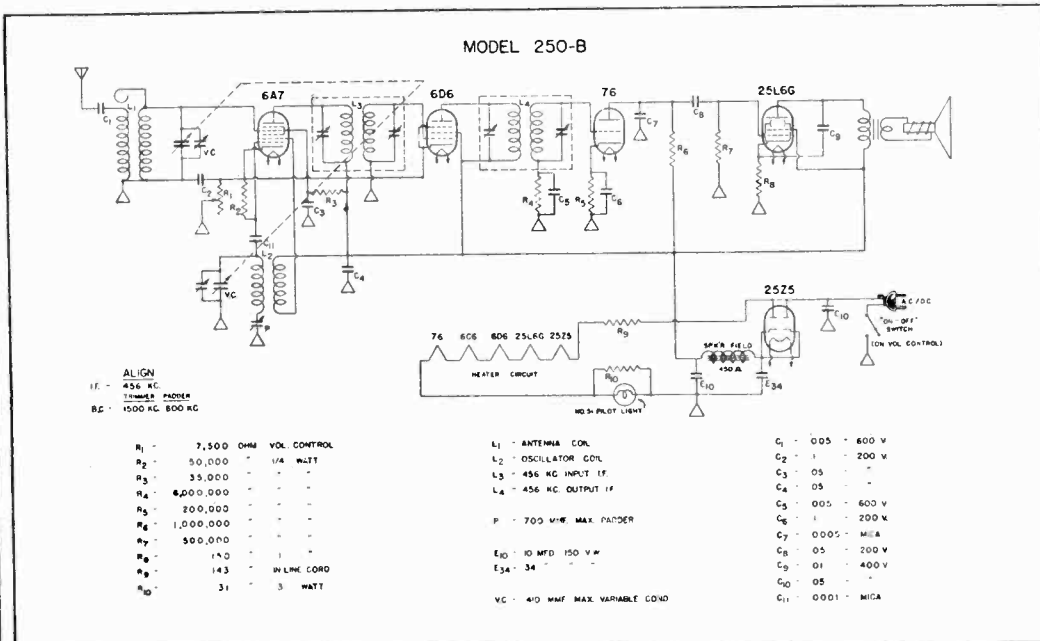
MODEL No. 222



Do not connect ground wire to chassis.

The frequency range covered is 550-1700 kilocycles.

105-125 volts, 50-60 cycles, a.c. or d.c. power



105-125 volts, 50-60 cycles AC or DC
The frequency range covered is 540-1750 kilocycles.

CAUTION - Do Not Connect Ground Wire to Chassis.

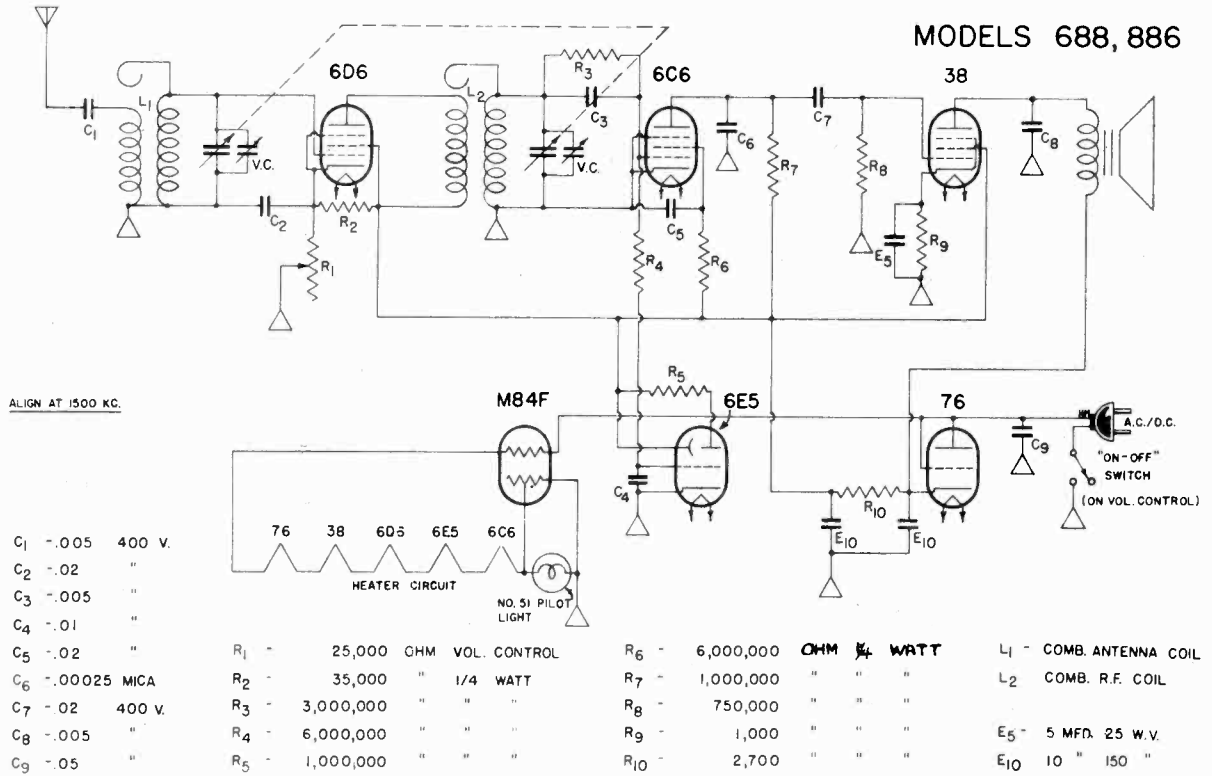
AIR KING PRODUCTS CORP.

MODELS 688,886

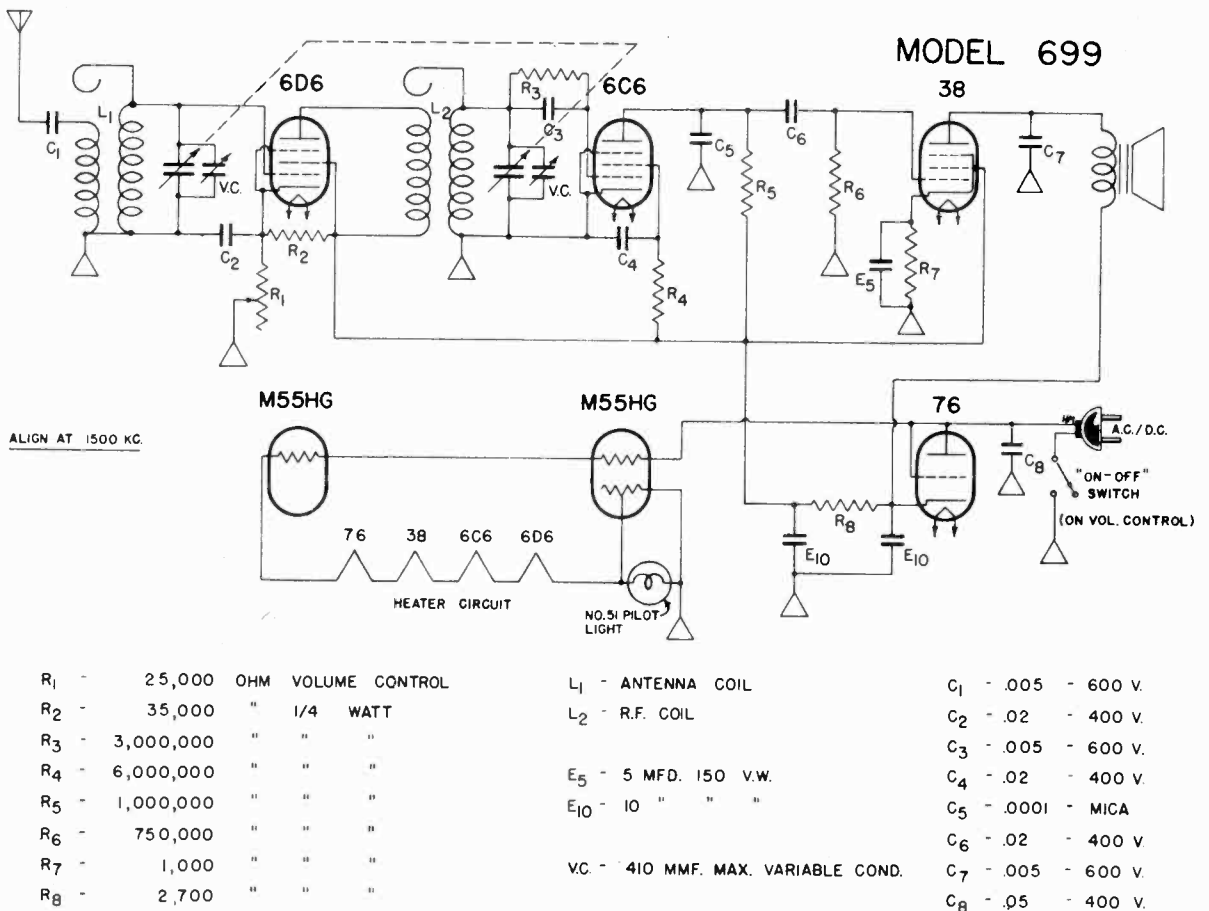
MODEL 699

Schematics

MODELS 688,886

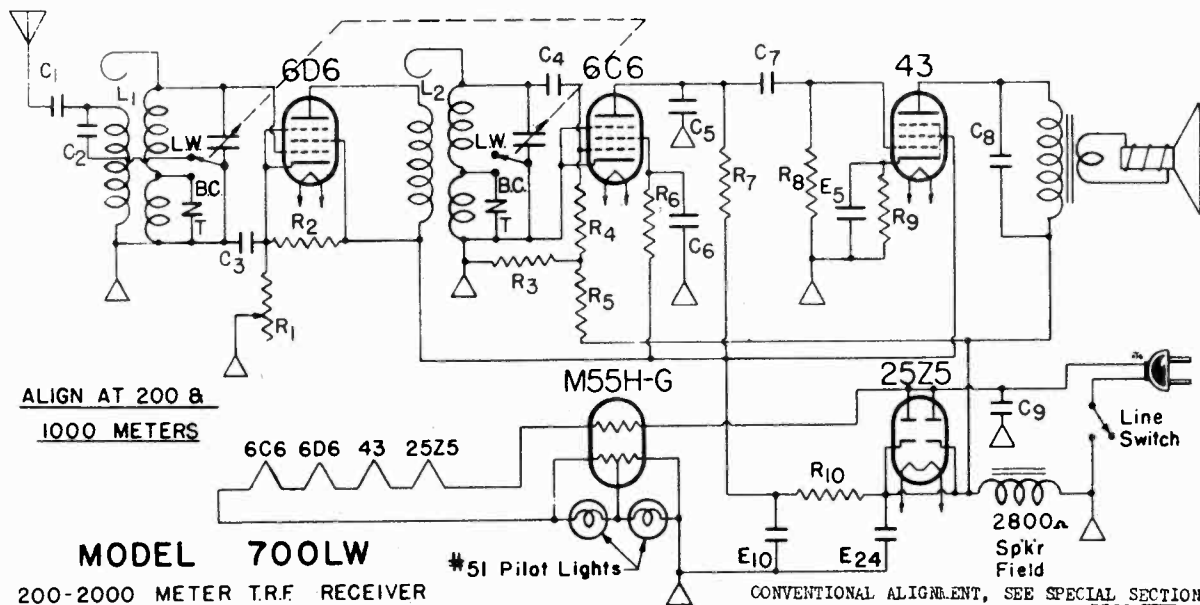


MODEL 699



MODEL 700LW
MODEL 704
Schematics

AIR KING PRODUCTS CORP.



ALIGN AT 200 &
1000 METERS

MODEL 700LW

200-2000 METER T.R.F. RECEIVER

#51 Pilot Lights

CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION
VOL VIII

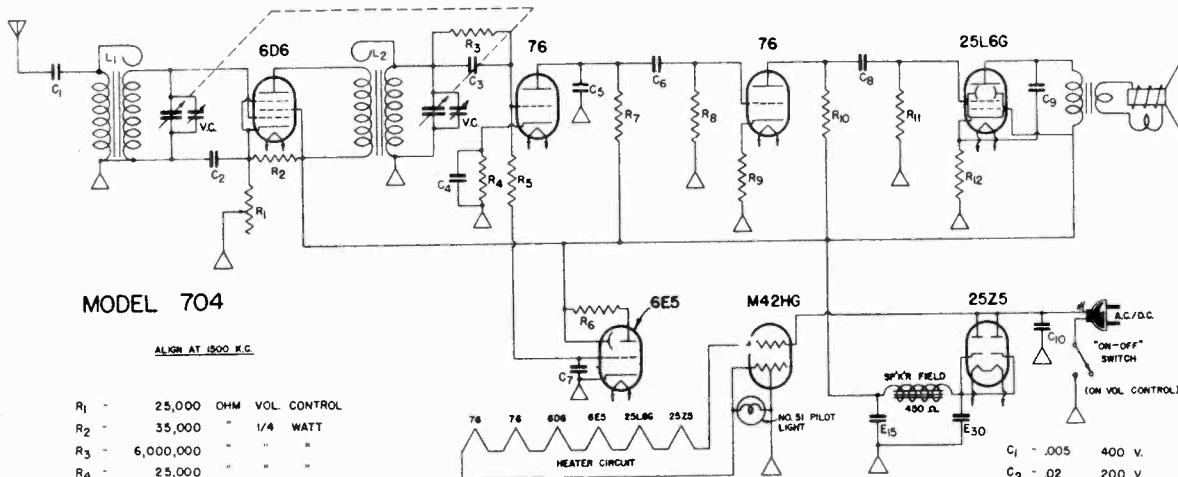
R ₁	-	25,000	ohm	vol. control
R ₂	-	35,000	"	1/4 watt
R ₃	-	2,700	"	"
R ₄	-	6,000,000	"	"
R ₅	-	1,000,000	"	"
R ₆	-	6,000,000	"	"
R ₇	-	1,000,000	"	"
R ₈	-	500,000	"	"
R ₉	-	650	"	1/2 "
R ₁₀	-	4,500	"	"

C ₁	-	.005	-	400 v.
C ₂	-	.00345	-	mica
C ₃	-	.02	-	200 v.
C ₄	-	.005	-	400 v.
C ₅	-	.00025	-	mica
C ₆	-	.02	-	200 v.
C ₇	-	.02	-	200 v.
C ₈	-	.005	-	400 v.
C ₉	-	.1	-	400 v.

L₁ - Comb. Antenna Coil
L₂ - Comb. R.F. Coil

E₂₄ - 24 mfd. 150 v.
E₁₀ - 10 " "

T - 3-35 mmf. Trimmer



MODEL 704

ALIGN AT 1500 K.C.

R ₁	-	25,000	OHM	VOL CONTROL
R ₂	-	35,000	"	1/4 WATT
R ₃	-	6,000,000	"	"
R ₄	-	25,000	"	"
R ₅	-	6,000,000	"	"
R ₆	-	1,000,000	"	"
R ₇	-	1,000,000	"	"
R ₈	-	750,000	"	"
R ₉	-	7,500	"	"
R ₁₀	-	100,000	"	"
R ₁₁	-	500,000	"	"
R ₁₂	-	150	"	1/2 "

E₁₅ - 15 MFD 150 V.W
E₃₀ - 30 " " "

L₁ - IRON CORE ANTENNA COIL
L₂ - " " RF COIL

VC - 410 MMF VARIABLE COND.

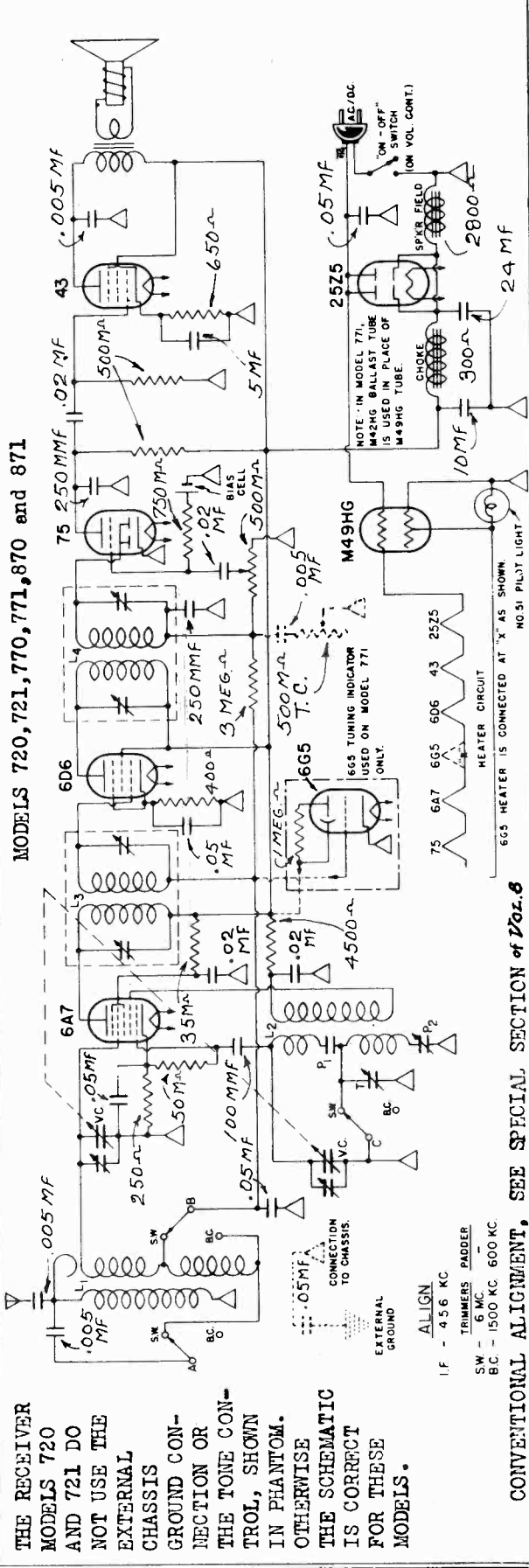
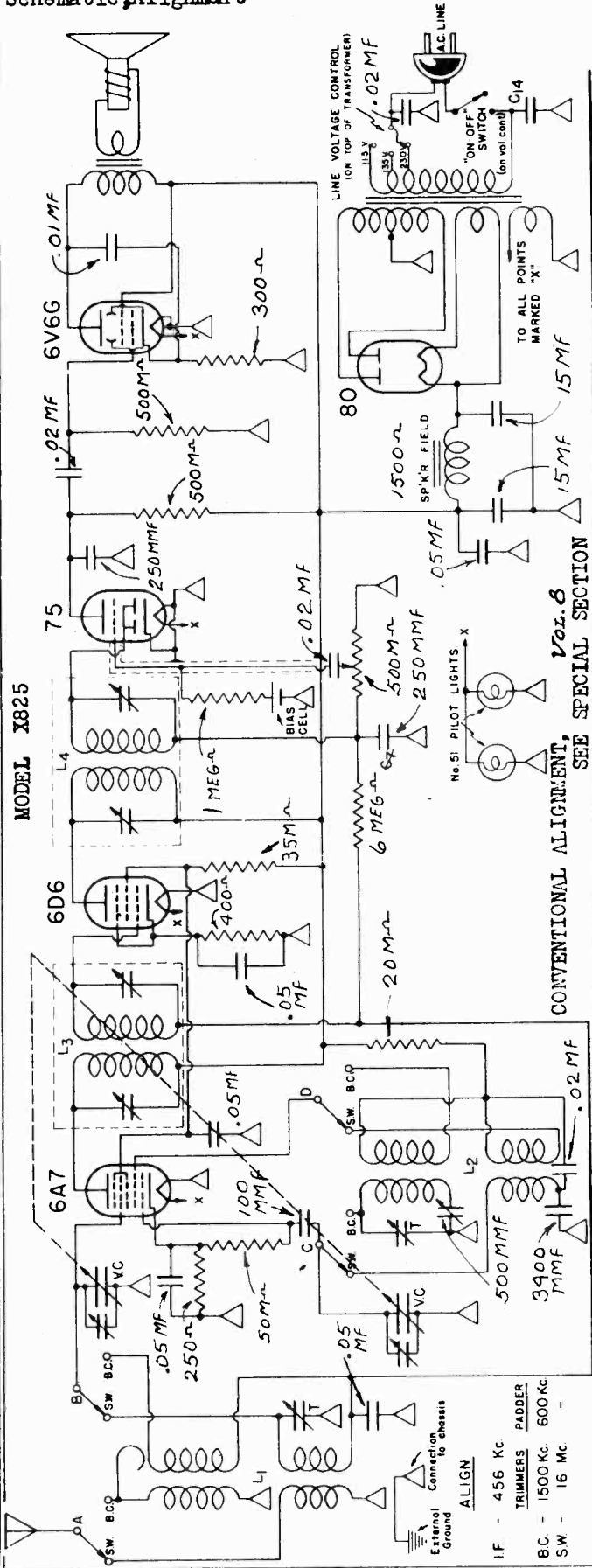
C ₁	-	.005	400 v.
C ₂	-	.02	200 v.
C ₃	-	.005	400 v.
C ₄	-	.1	200 v.
C ₅	-	.00025	MICA
C ₆	-	.02	200 v.
C ₇	-	.01	400 v.
C ₈	-	.02	200 v.
C ₉	-	.01	400 v.
C ₁₀	-	.1	"

MODELS 720, 721, 770, 771
870, 871

AIR-KING PRODUCTS CORP.

MODEL X825
Schematic, Alignment

Schematic, Alignment



THE RECEIVER
MODELS 720
AND 721 DO
NOT USE THE
EXTERNAL
CHASSIS
GROUND CON-
NECTION OR
THE TONE CON-
TROL, SHOWN
IN PHANTOM.
OTHERWISE
THE SCHEMATIC
IS CORRECT
FOR THESE
MODELS.

ALIGN
IF - 456 Kc
TRIMMERS PADDER
BC - 1500 Kc 600 Kc
SW - 16 Mc

IF - 456 Kc
TRIMMERS PADDER
SW - 6 Mc
BC - 1500 Kc 600 Kc

CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION of Vol. 8

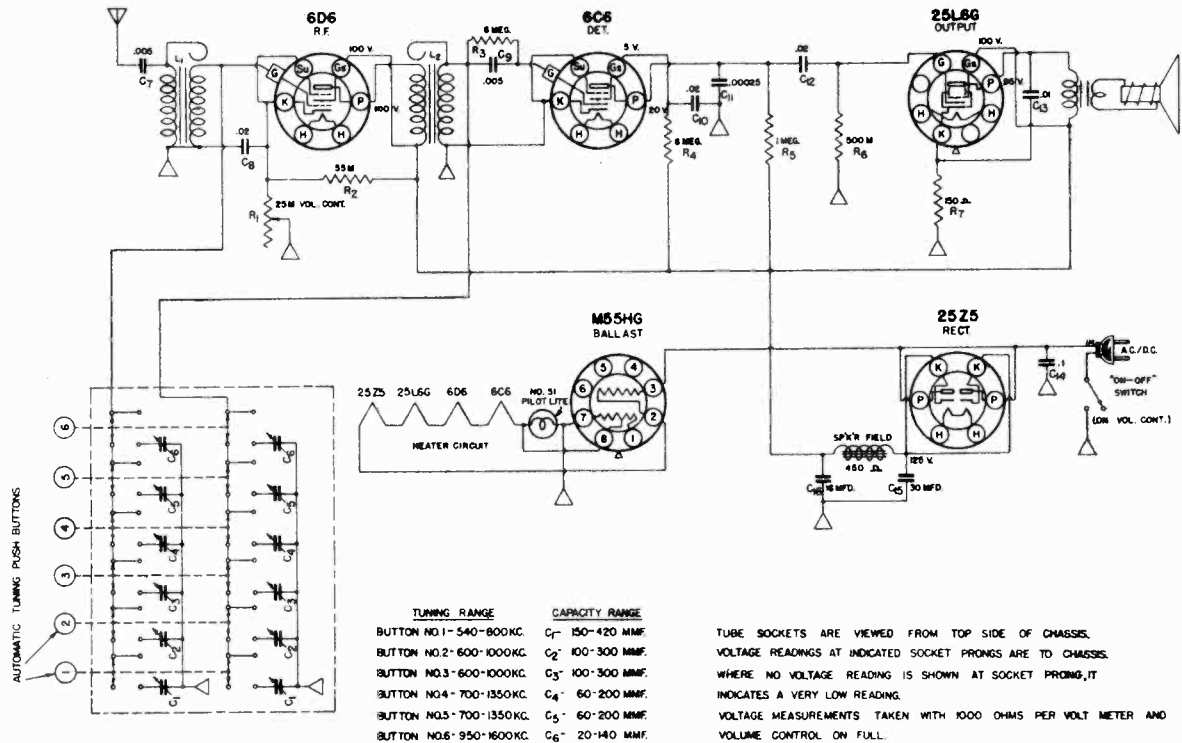
CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION Vol. 8

MODELS 720, 721, 770, 771, 870 and 871

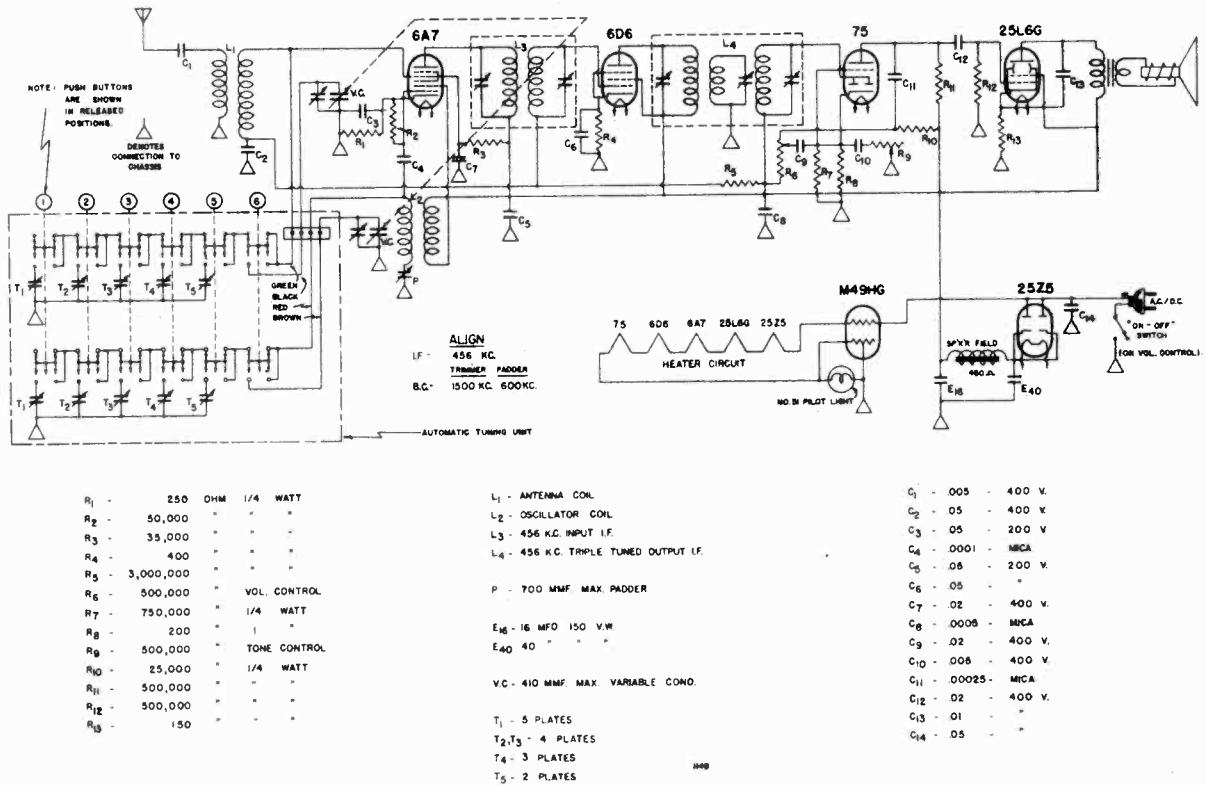
AIR KING PRODUCTS CORP.

MODEL 777
MODEL 910 Early
Schematics

MODEL 777



MODEL 910

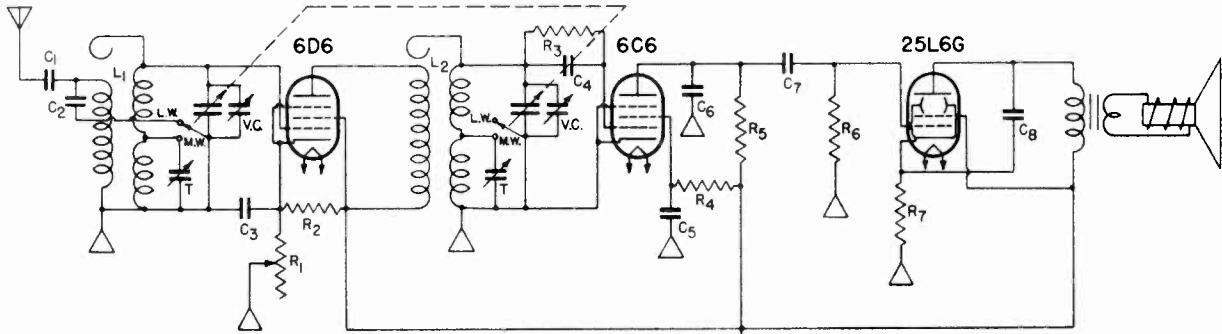


MODEL X 780B

MODEL 801

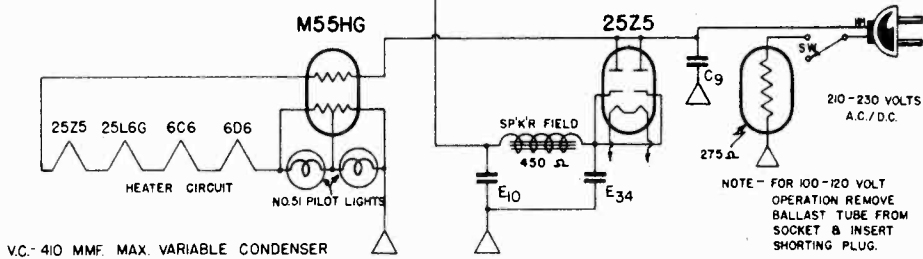
Schematics

AIR KING PRODUCTS CORP.



ALIGN AT 200 B
1000 METERS

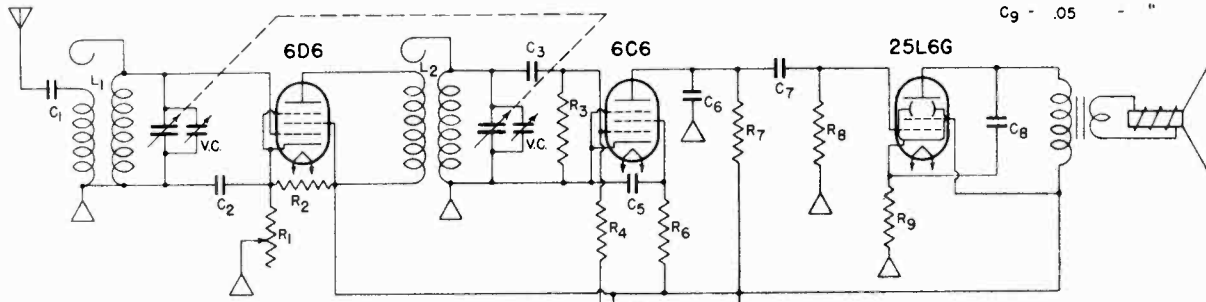
MODEL X 780-B



VC - 410 MMF. MAX. VARIABLE CONDENSER

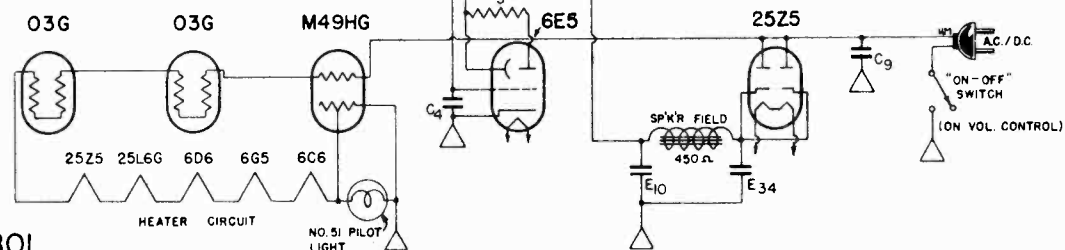
NOTE - FOR 100-120 VOLT OPERATION REMOVE BALLAST TUBE FROM SOCKET B INSERT SHORTING PLUG.

- | | | |
|--|---|--------------------------------|
| R ₁ - 25,000 OHM VOL. CONTROL | L ₁ - COMBINATION ANTENNA COIL | C ₁ - .005 - 600 V. |
| R ₂ - 35,000 " 1/4 WATT | L ₂ - COMBINATION R.F. COIL | C ₂ - .00025 - MICA |
| R ₃ - 6,000,000 " " " | E ₁₀ - 10 MFD. 150 V.W. | C ₃ - .02 - 400 V. |
| R ₄ - 6,000,000 " " " | E ₃₄ - 34 " " " | C ₄ - .005 - 600 V. |
| R ₅ - 1,000,000 " " " | T - 3-35 MMF. TRIMMER | C ₅ - .02 - 400 V. |
| R ₆ - 750,000 " " " | | C ₆ - .00025 - MICA |
| R ₇ - 150 " 1 " | | C ₇ - .02 - 400 V. |
| | | C ₈ - .01 - " |
| | | C ₉ - .05 - " |



ALIGN AT 1500 KC.

MODEL 801



- | | | |
|--|------------------------------------|--------------------------------|
| R ₁ - 25,000 OHM VOL. CONTROL | L ₁ - ANTENNA COIL | C ₁ - .005 - 600 V. |
| R ₂ - 35,000 " 1/4 WATT | L ₂ - R.F. COIL | C ₂ - .02 - 400 V. |
| R ₃ - 6,000,000 " " " | E ₁₀ - 10 MFD. 150 V.W. | C ₃ - .005 - " |
| R ₄ - 6,000,000 " " " | E ₃₄ - 34 " " " | C ₄ - .01 - 400 V. |
| R ₅ - 1,000,000 " " " | VC - 410 MMF. MAX VARIABLE COND. | C ₅ - .02 - " |
| R ₆ - 6,000,000 " " " | | C ₆ - 0.0025 - MICA |
| R ₇ - 1,000,000 " " " | | C ₇ - .02 - 400 V. |
| R ₈ - 750,000 " " " | | C ₈ - .01 - " |
| R ₉ - 150 " 1/2 " | | C ₉ - .05 - " |

AIR KING PRODUCTS CORP.

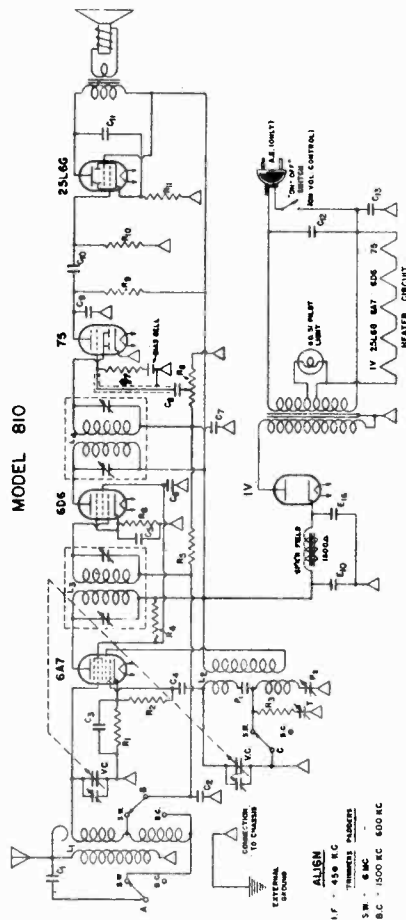
MODEL 810
 MODELS 828, 838
 Schematics
 Alignment

- C1 - .005 - 400 V
- C2 - .01 - 200 V
- C3 - .01 - 400 V
- C4 - .0001 - MICA
- C5 - .0001 - MICA
- C6 - .02 - 400 V
- C7 - .0001 - MICA

- R1 - 250 OHM 1/4 WATT
- R2 - 50,000
- R3 - 80
- R4 - 25,000
- R5 - 2,000,000
- R6 - 400
- R7 - 150,000
- R8 - 500,000
- R9 - 500,000
- R10 - 100

SWITCHES A.B.C. - 3 POLE DOUBLE
 THROW WAVE BAND SWITCH

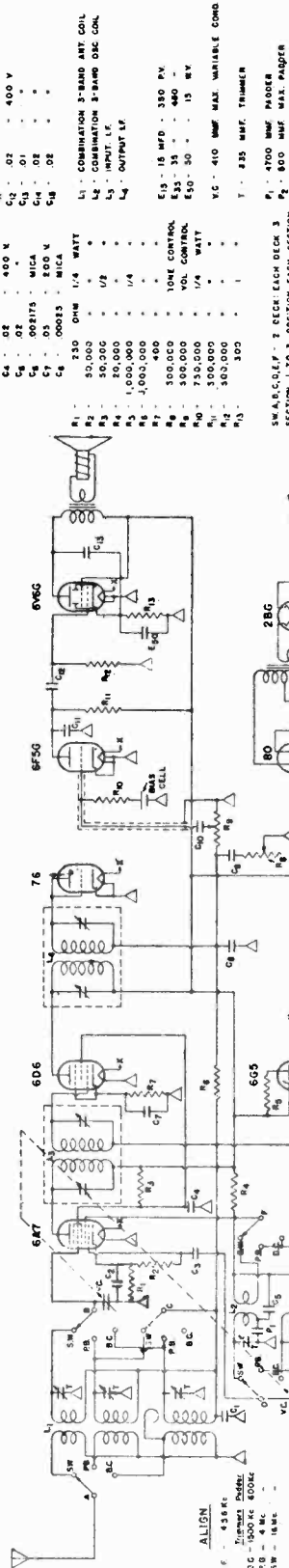
The frequency ranges covered are: Standard broadcast 540 to 1740 kc., Foreign Short Wave 7200 to 2150 kc.



ALIGN
 IF - 455 kc.
 SW - 400 kc.
 BC - 1500 kc.
 BC - 400 kc.

CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION of Vol. VIII

MODELS 828, 838



ALIGN
 IF - 455 kc.
 CC - 1000 kc.
 PB - 400 kc.
 SW - 15 kc.

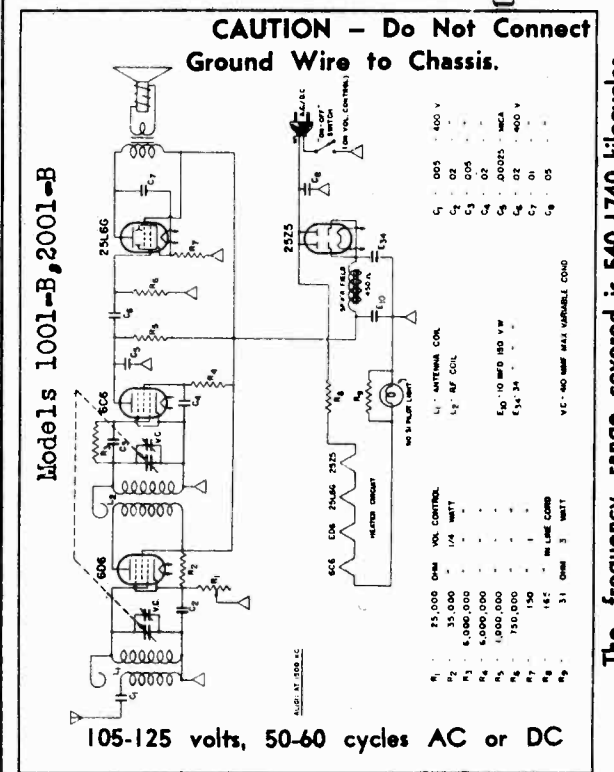
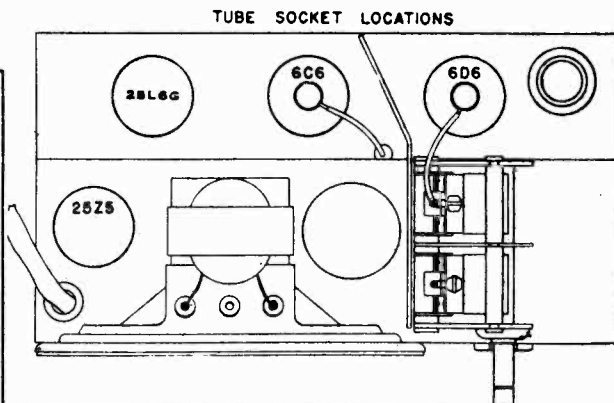
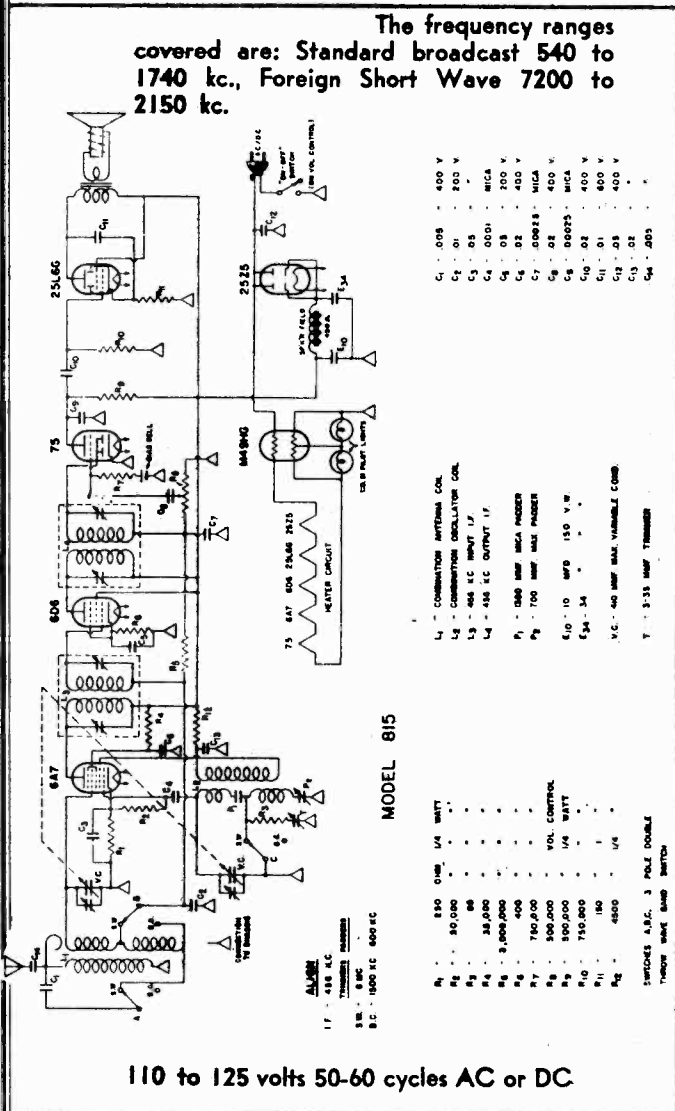
The frequency ranges covered are: Standard broadcast 540 to 1740 kc. - Police band 55 to 180 meters - European band 16 to 52 meters.

CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION of Vol. VIII

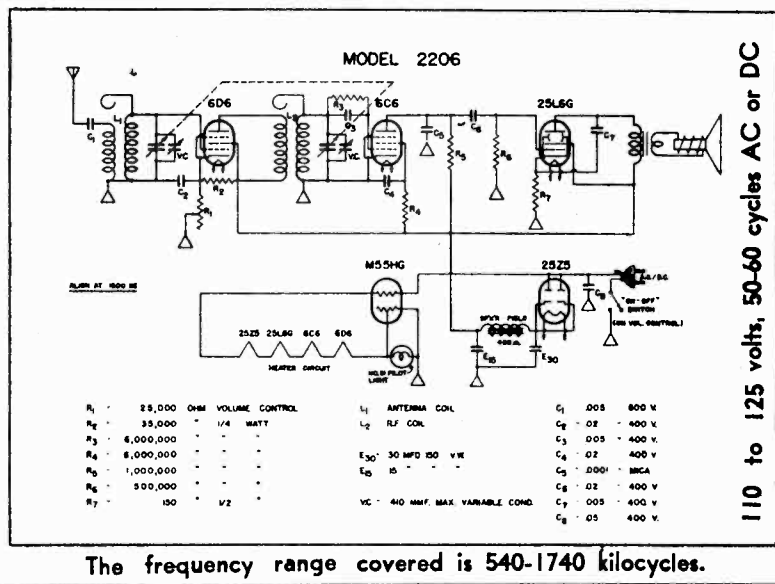
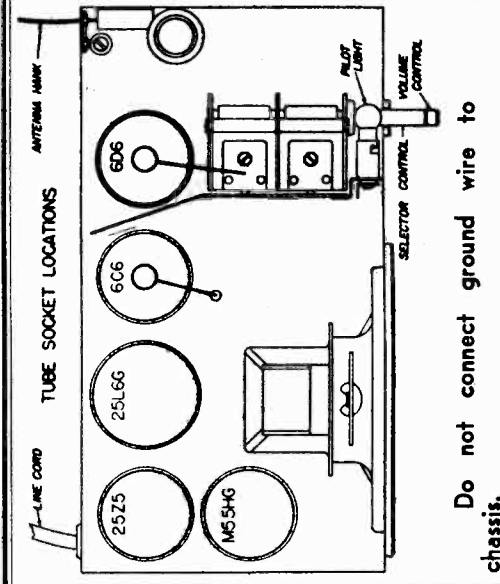
MODELS 1001B, 2001B
MODEL 2206
Schematics, Socket

AIR-KING PRODUCTS CORP.

MODEL 815
Schematic

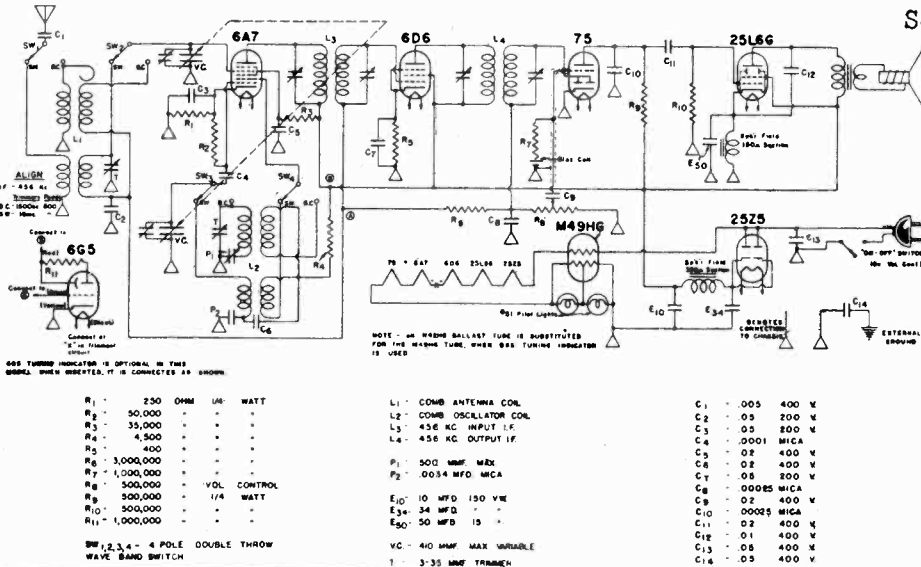


The frequency range covered is 540-1740 kilocycles.



AIR-KING PRODUCTS CORP.

MODELS 822, 822X, 826X, 832
MODELS 823, 833
MODELS 824, 834
Schematics, Alignment

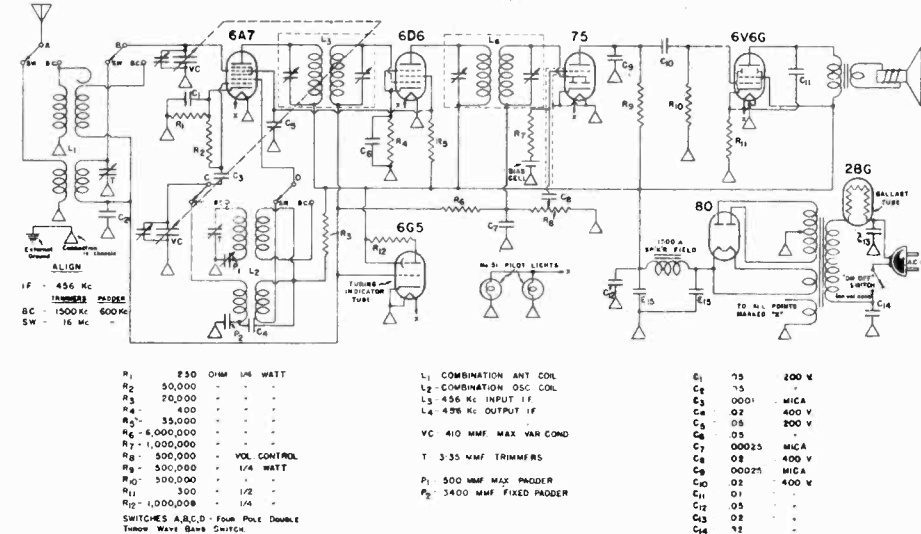


MODELS 822, 822X, 826X and 832.

CONVENTIONAL ALIGNMENT
SEE SPECIAL SECTION VOL. VIII

FREQUENCY RANGES :
540 to 1740 KC
5.7 to 18.7 MC

MODELS 823, 833

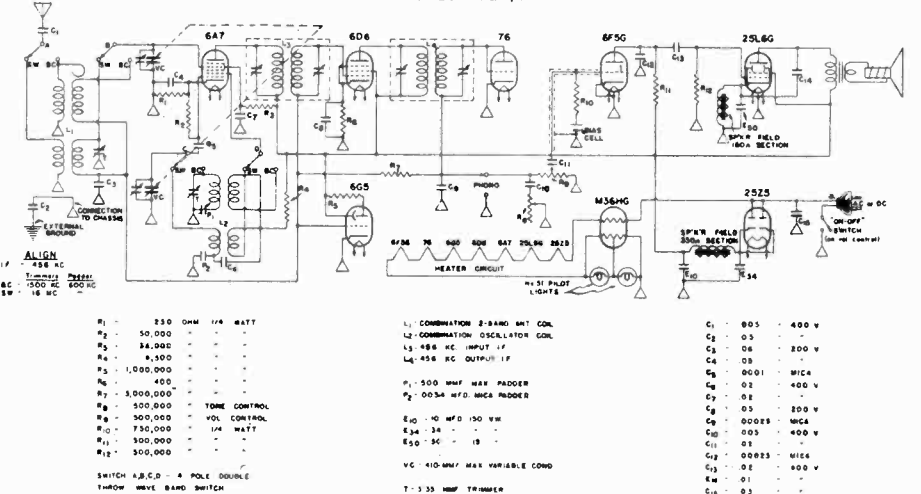


MODELS 823, 833

CONVENTIONAL ALIGNMENT
SEE SPECIAL SECTION VOL. VIII

FREQUENCY RANGES :
540 to 1740 KC
5.7 to 18.7 MC

MODELS 824, 834



MODELS 824, 834

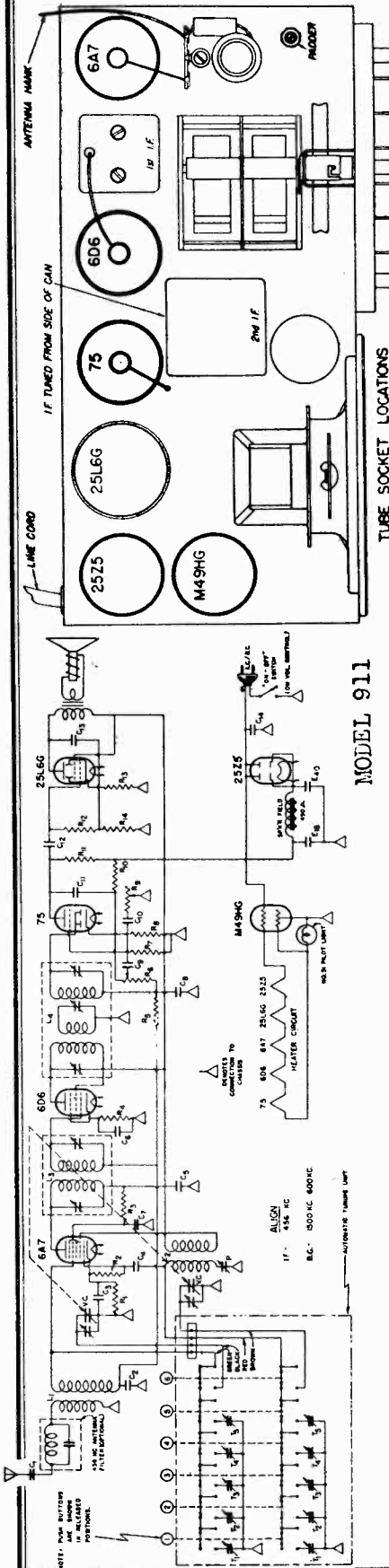
CONVENTIONAL ALIGNMENT
SEE SPECIAL SECTION VOL. VIII

FREQUENCY RANGES :
540 to 1740 KC
5.7 to 18.7 MC

MODEL 850
Schematic

AIR-KING PRODUCTS CORP.

MODEL 911
Schematic, Socket
Notes



INSTRUCTIONS FOR ADJUSTING
AUTOMATIC TUNING CONTROL

Refer to the diagram underneath cabinet and see which set of adjustment screws will have a tuning range that includes the frequency of the station desired. This is the pair of screws to be adjusted for this particular station. The ranges are, listed under each pair of adjustment screws.
(WJZ's transmitting frequency, 760 kc., will be included in the range listed as 600-1000 kc. This pair of screws are to be adjusted for WJZ.)

From the same diagram, after finding where the proper pair of adjustment screws are located, trace dotted line connecting these screws to one of the push buttons. This is the button which, after the adjustments are completed, will tune in the station.
(For WJZ, the dotted line from the set of adjustment screws tuning from 600-1000 kc. connects to button No. 3.)

Push button located by paragraph 4 "IN."
(Push button No. 3 "IN" for WJZ.)

Turn volume control knob on full (to the extreme right) and adjust screw marked "O" until desired station is heard. (In this case until WJZ is heard.) If when making this adjustment, a number of stations can be brought in as the screw is turned and it is doubtful which station is the correct one, press button No. 6 (Manual Tuning) "IN" and move dial pointer by turning station selector knob, to the number on the dial that corresponds to the frequency of the station. (Turn pointer to 76 on the dial. This corresponds to WJZ's frequency 760 kc. The number on the dial must be multiplied by ten to give the frequency in kilocycles.) Listening to the program being broadcast will identify the station when adjusting screw "O."

Adjust screw marked "A" for maximum volume, retarding the volume control and readjusting if necessary. This completes the adjustments for this particular station.

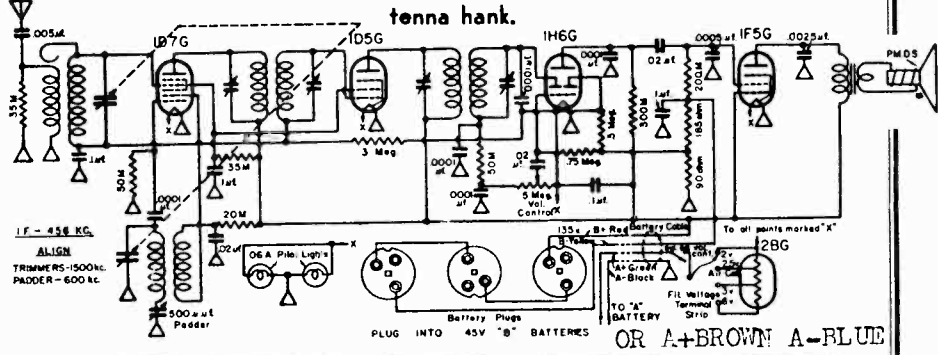
MODEL 911

C ₁	.005	400 V
C ₂	.05	200 V
C ₃	.25	200 V
C ₄	.001	MGCA
C ₅	.02	200 V
C ₆	.05	"
C ₇	.01	"
C ₈	.00025	MGCA
C ₉	.01	200 V
C ₁₀	.005	400 V
C ₁₁	.00025	MGCA
C ₁₂	.02	200 V
C ₁₃	.01	400 V
C ₁₄	.1	"

- L₁ - ANTENNA COIL
- L₂ - OSCILLATOR COIL
- L₃ - 458 KC. INPUT IF
- L₄ - 458 KC. TRAPLE TUNED OUTPUT IF
- P - 100 MMF. MAX. PADDER
- E₁ - 18 MFD 150 V.P.
- E₂ - 40 "
- V₁ - 150-420 MMF
- T₁ - 400-500 MMF
- T₂ - 100-200 MMF
- T₃ - 20-110 MMF
- V₂ - 40 MMF. MAX. VARIABLE COND.

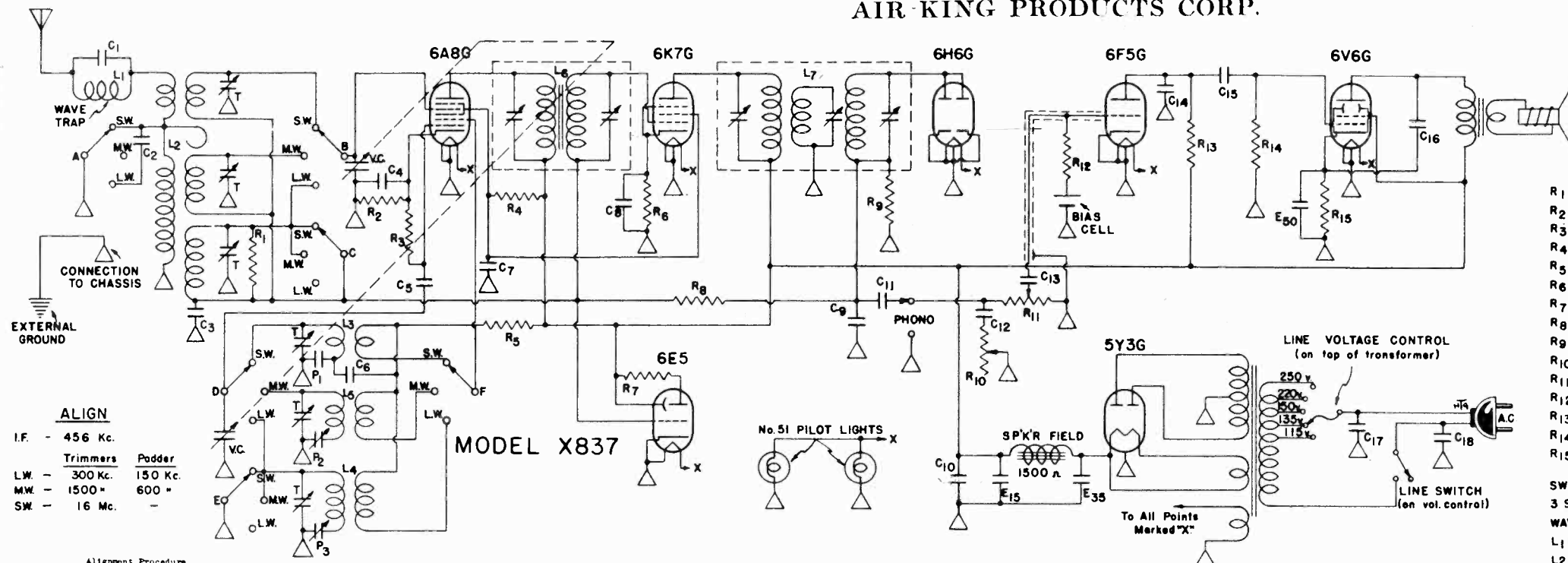
MODEL
No. 850

ANTENNA set will perform to give best results in most localities. However, in communities located more than 100 miles away from a broadcasting station, an outside antenna of 50 to 75 feet may be necessary for better performance. This antenna should be attached to the end of the built in antenna hank.



AIR-KING PRODUCTS CORP.

MODEL X837
MODEL X837S
Schematics, Alignment



ALIGN
I.F. - 456 Kc.
Trimmers Padder
L.W. - 300 Kc. 150 Kc.
M.W. - 1500 " 600 "
S.W. - 16 Mc. -

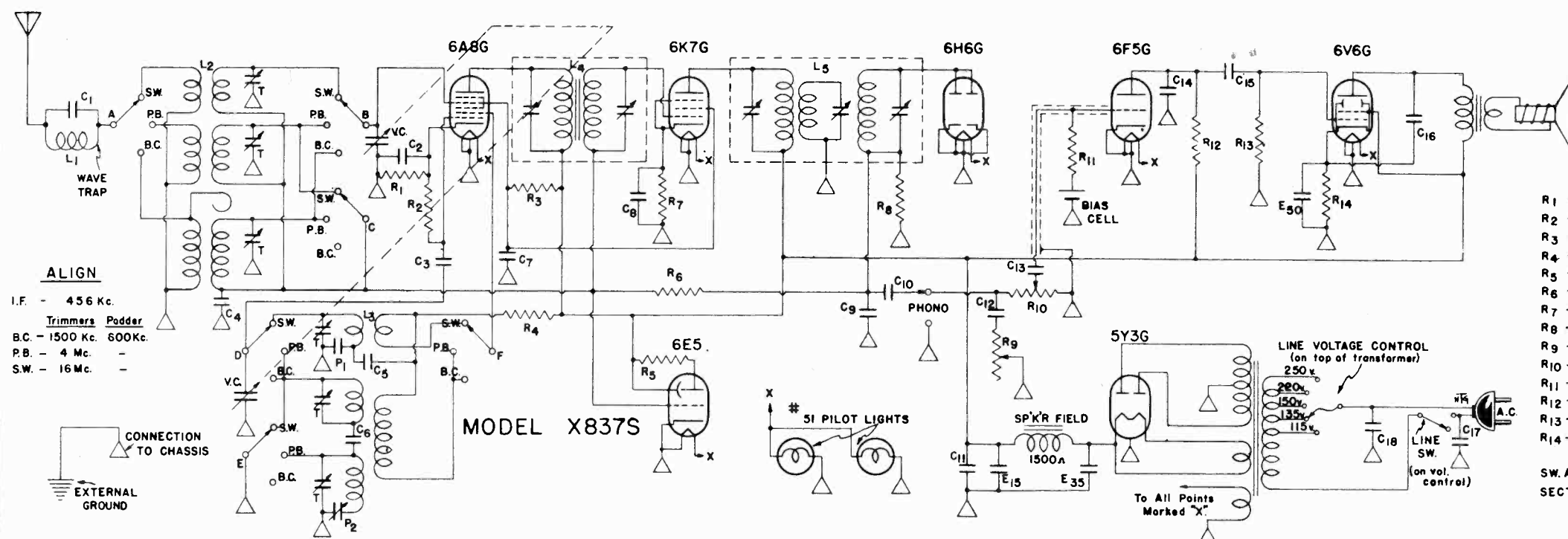
Alignment Procedure

- 1st Align I. F. at 456 Kc. as follows:
A- Align I. F. as usual
B- Turn center trimmer of second I. F. Out Full, then tune top and bottom trimmers.
- 2nd Align M. W. Osc. trimmer at 200 M.
Align M. W. Ant. trimmer at 200 M.
Align M. W. Osc. padder at 500 M.
Recheck M. W. Ant. and Osc. at 200 M.
- 3rd Align L. W. Osc. padder at 2000 M.
Align L. W. Osc. trimmer at 1000 M.
Align L. W. Ant. trimmer at 1000 M.
Recheck L. W. Osc. padder at 2000 M.
- 4th Align S. W. Osc. trimmer at 16 M.
Align S. W. Ant. trimmer at 16 M.
Check S. W. at 49 M.

- P₁ - 4700 MMF. PADDER
P₂ - 300 MMF. MAX. PADDER
P₃ - 300 " " "
V.C. - 410 MMF. MAX. VARIABLE COND.
T - 3-35 MMF. TRIMMER

R ₁ - 3,000,000 OHM 1/4 WATT	C ₁ - .0005 - MICA
R ₂ - 250 " " "	C ₂ - .00025 - "
R ₃ - 50,000 " " "	C ₃ - .05 - 400 V.
R ₄ - 50,000 " 1/2 "	C ₄ - .05 - "
R ₅ - 20,000 " " "	C ₅ - .0001 - MICA
R ₆ - 400 " 1/4 "	C ₆ - .02 - 400 V.
R ₇ - 1,000,000 " " "	C ₇ - .05 - "
R ₈ - 3,000,000 " " "	C ₈ - .05 - "
R ₉ - 500,000 " " "	C ₉ - .00025 - MICA
R ₁₀ - 500,000 " TONE CONTROL	C ₁₀ - .1 - 400 V.
R ₁₁ - 500,000 " VOL. CONTROL	C ₁₁ - .02 - "
R ₁₂ - 750,000 " 1/4 WATT	C ₁₂ - .005 - "
R ₁₃ - 500,000 " " "	C ₁₃ - .02 - "
R ₁₄ - 500,000 " " "	C ₁₄ - .00025 - MICA
R ₁₅ - 300 " 1 "	C ₁₅ - .02 - 400 V.

SWITCHES A,B,C,D,E,F - 2 DECK: EACH DECK 3 SECTION, 1 TO 3 POSITION EACH SECTION:
WAVE BAND SWITCH.
L₁ - WAVE TRAP COIL
L₂ - COMBINATION 3-BAND ANT. COIL
L₃, L₄ - COMBINATION S.W.&L.W. OSC. COIL
L₅ - M.W. OSCILLATOR COIL
L₇ - TRIPLE TUNED OUTPUT I.F.
E₁₅ - 15 MFD. 350 P.V.
E₃₅ - 35 " - 450 "
E₅₀ - 50 " - 15 W.V.



ALIGN
I.F. - 456 Kc.
Trimmers Padder
B.C. - 1500 Kc. 600Kc.
P.B. - 4 Mc. -
S.W. - 16 Mc. -

Alignment Procedure

- 1st Align I. F. at 456 Kc. as follows:
A- Align I. F. as usual
B- Turn center trimmer of second I. F. Out Full, then tune top and bottom trimmers.
- 2nd Align B. C. Osc. trimmer at 1500 Kc.
Align B. C. Ant. trimmer at 1000 Kc.
Align B. C. Osc. padder at 600 Kc.
Recheck B. C. Ant. and Osc. at 1500 Kc.
- 3rd Align P. B. Osc. trimmer at 4 Mc.
Align P. B. Ant. trimmer at 4 Mc.
Check P. B. at 2 Mc.
- 4th Align S. W. Osc. trimmer at 16 Mc.
Align S. W. Ant. trimmer at 16 Mc.
Check S. W. at 6 Mc.

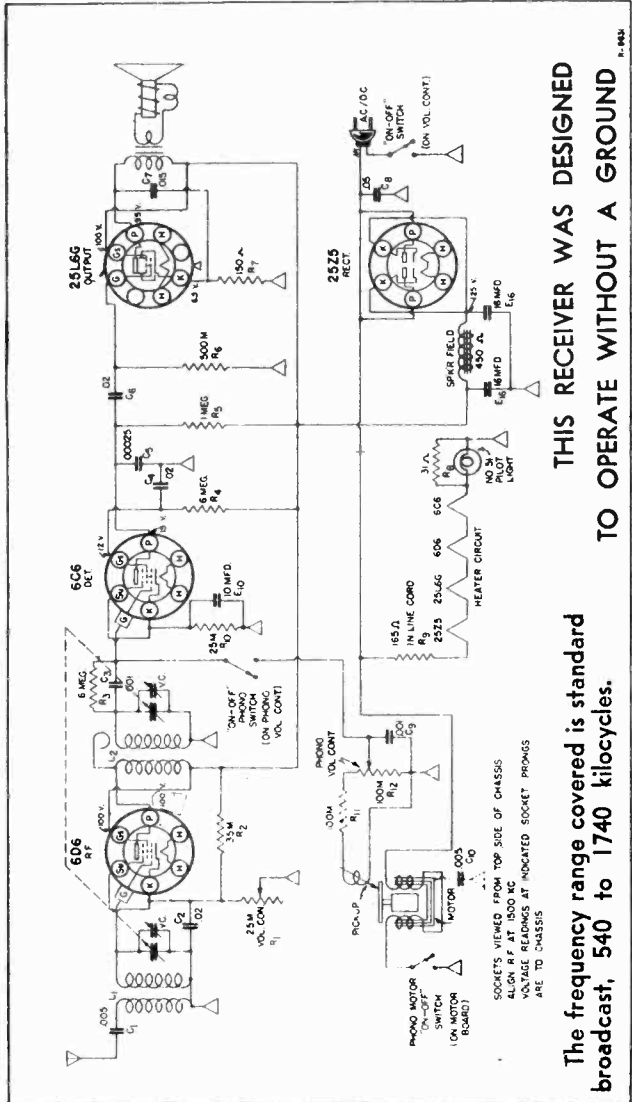
- P₁ - 4700 MMF. PADDER
P₂ - 500 MMF. MAX. PADDER
V.C. - 410 MMF. MAX. VARIABLE COND.
T - 3-35 MMF. TRIMMER

R ₁ - 250 OHM 1/4 WATT	C ₁ - .0005 - MICA
R ₂ - 50,000 " " "	C ₂ - .05 - 400 V.
R ₃ - 50,000 " 1/2 "	C ₃ - .0001 - MICA
R ₄ - 20,000 " " "	C ₄ - .05 - 400 V.
R ₅ - 1,000,000 " 1/4 "	C ₅ - .02 - "
R ₆ - 3,000,000 " " "	C ₆ - .002175 - MICA
R ₇ - 400 " " "	C ₇ - .05 - 400 V.
R ₈ - 500,000 " " "	C ₈ - .05 - "
R ₉ - 500,000 " TONE CONTROL	C ₉ - .00025 - MICA
R ₁₀ - 500,000 " VOL. CONTROL	C ₁₀ - .02 - 400 V.
R ₁₁ - 750,000 " 1/4 WATT	C ₁₁ - .1 - "
R ₁₂ - 500,000 " " "	C ₁₂ - .005 - "
R ₁₃ - 500,000 " " "	C ₁₃ - .02 - "
R ₁₄ - 300 " 1 "	C ₁₄ - .00025 - MICA

SW. A, B, C, D, E, F - 2 DECK: EACH DECK 3 SECTION, 1 TO 3 POSITION EACH SECTION.
L₁ - WAVE TRAP COIL
L₂ - COMBINATION 3-BAND ANT. COIL
L₃ - COMBINATION 3-BAND OSC. COIL
L₄ - IRON CORE INPUT I.F.
L₅ - TRIPLE TUNED OUTPUT I.F.
E₁₅ - 15 MFD. - 350 P.V.
E₃₅ - 35 " - 450 "
E₅₀ - 50 " - 15 W.V.

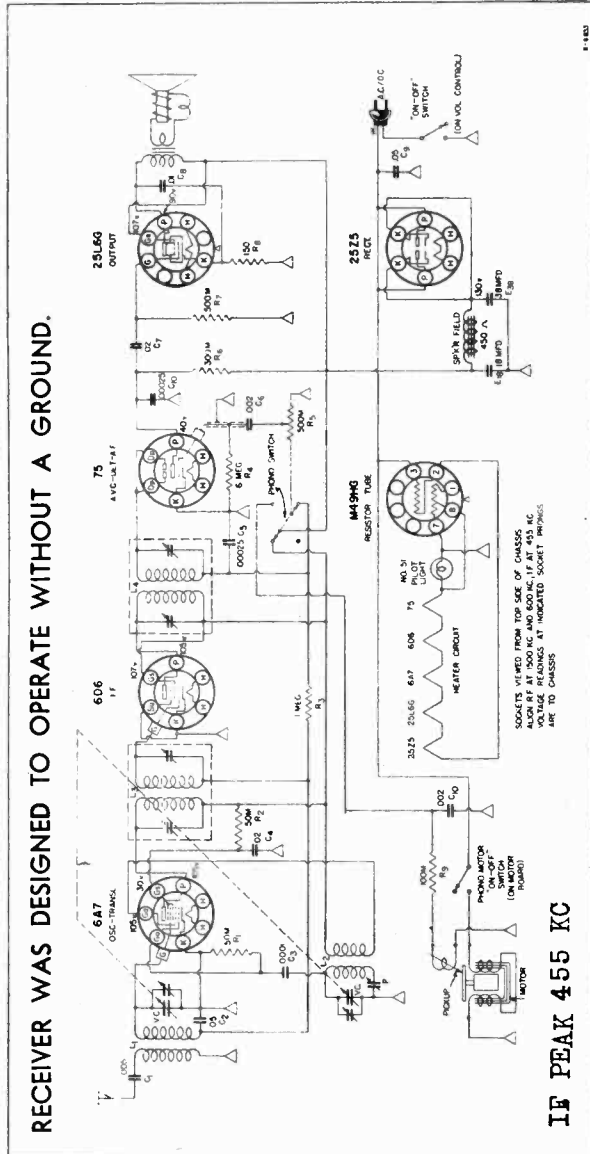
AIR KING PRODUCTS CORP.

MODEL 908
MODEL 909
Schematic, Socket



THIS RECEIVER WAS DESIGNED TO OPERATE WITHOUT A GROUND

The frequency range covered is standard broadcast, 540 to 1740 kilocycles.



RECEIVER WAS DESIGNED TO OPERATE WITHOUT A GROUND.

IF PEAK 455 KC

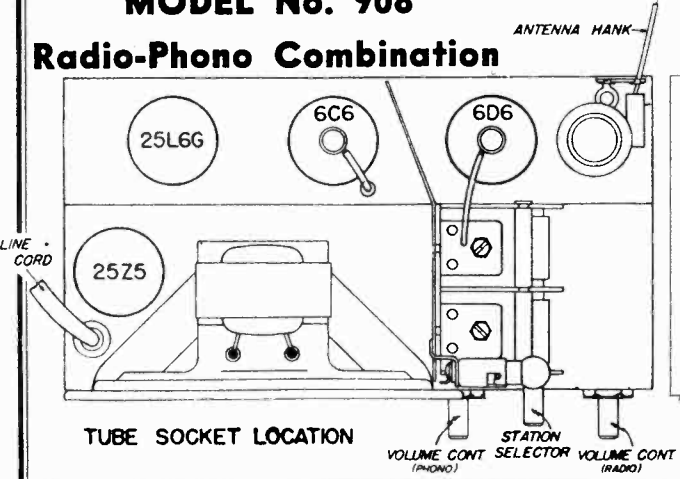
(c) The radio portion of this combination may also be operated on the DC power lines. UNDER NO CIRCUMSTANCES SHOULD ONE ATTEMPT TO OPERATE THE PHONO ON DC, as it will damage the phono motor.

105-125 volts, 50-60 cycles, a.c.

(The radio portion of this instrument will operate on d.c. as well as on a.c. current. UNDER NO CONDITION SHOULD THE PHONOGRAPH BE OPERATED ON D.C.

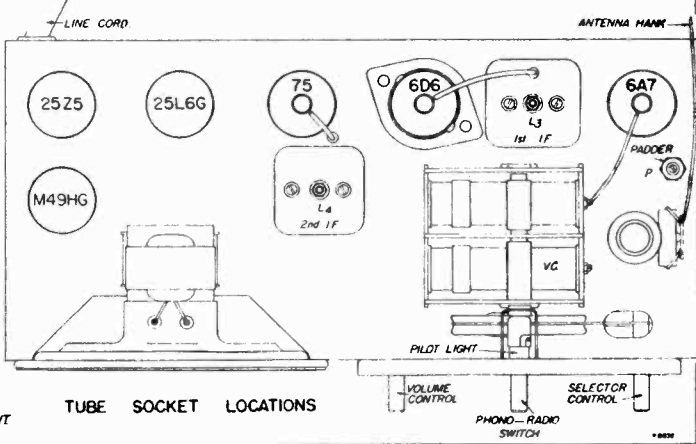
MODEL No. 908

Radio-Phono Combination



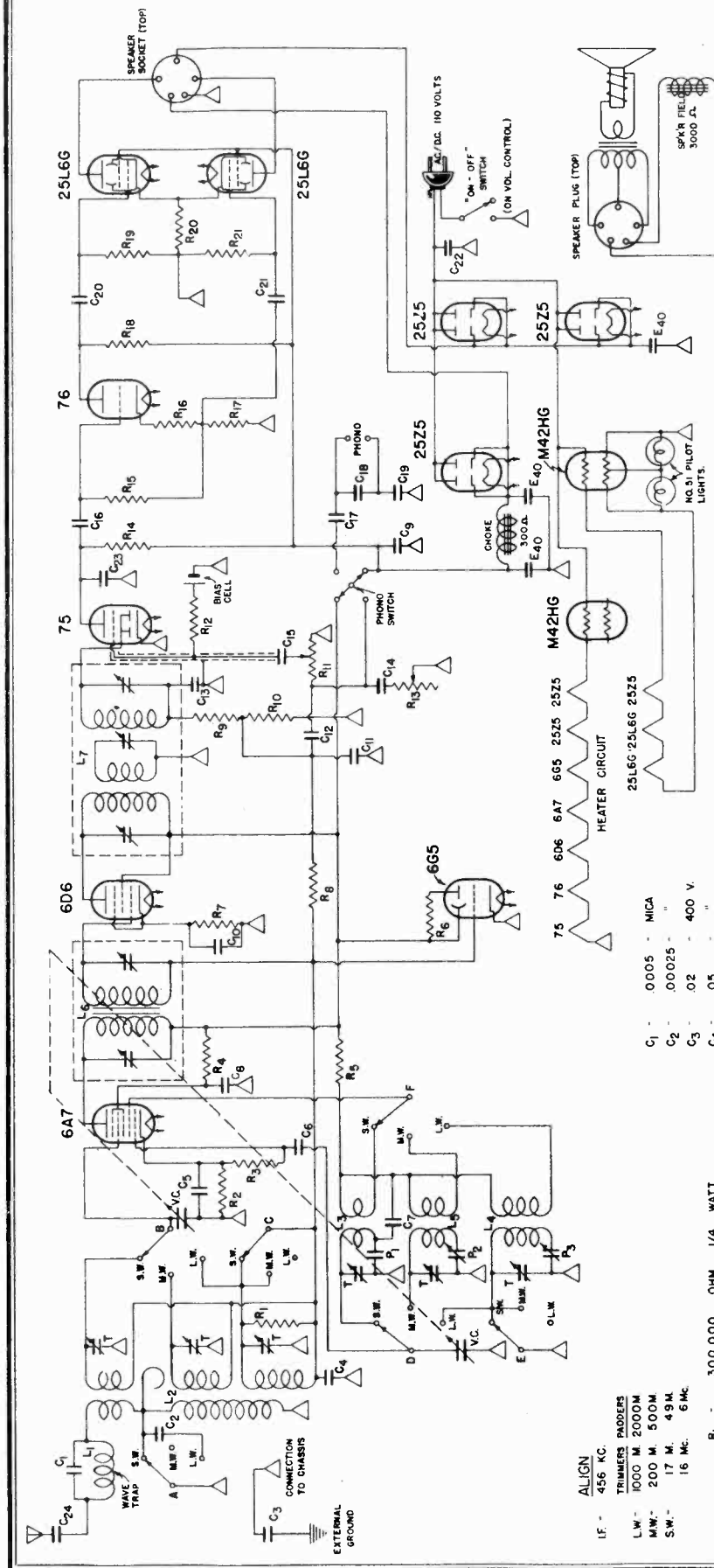
110 to 125 volts, 50-60 cycles, AC frequency range 540-1740 kilocycles.

MODEL No. 909
Radio-Phono Combination



AIR KING PRODUCTS CORP.

MODEL X8312
Schematic, Alignment



ALIGN 456 KC
IF - 456 KC
TRIMMERS
LW - 1000 M. 2000M
MW - 200 M. 500M
SW - 17 M. 49M
16 MC. 6 MC.

R1	300,000	OHM	1/4	WATT
R2	250	"	"	"
R3	50,000	"	"	"
R4	35,000	"	"	"
R5	5,000	"	"	"
R6	1,000,000	"	"	"
R7	400	"	"	"
R8	1,000,000	"	"	"
R9	500,000	"	"	"
R10	50,000	"	"	"
R11	500,000	"	"	"
R12	750,000	"	"	"
R13	500,000	"	"	"
R14	500,000	"	"	"
R15	5,000	"	"	"
R16	100,000	"	"	"
R17	100,000	"	"	"
R18	100,000	"	"	"
R19	500,000	"	"	"
R20	75	"	"	"
R21	500,000	"	"	"
C1	.0005	MICA	"	"
C2	.00025	"	"	"
C3	.02	400 V.	"	"
C4	.05	"	"	"
C5	.1	"	"	"
C6	.0001	MICA	"	"
C7	.02	400 V.	"	"
C8	.02	"	"	"
C9	.1	"	"	"
C10	.05	"	"	"
C11	.0001	MICA	"	"
C12	.05	"	"	"
C13	.0001	MICA	"	"
C14	.005	600 V.	"	"
C15	.05	400 V.	"	"
C16	.05	"	"	"
C17	.1	"	"	"
C18	.00025	MICA	"	"
C19	.1	400 V.	"	"
C20	.05	"	"	"
C21	.05	"	"	"
C22	.1	"	"	"
C23	.00025	MICA	"	"
C24	.05	600 V.	"	"

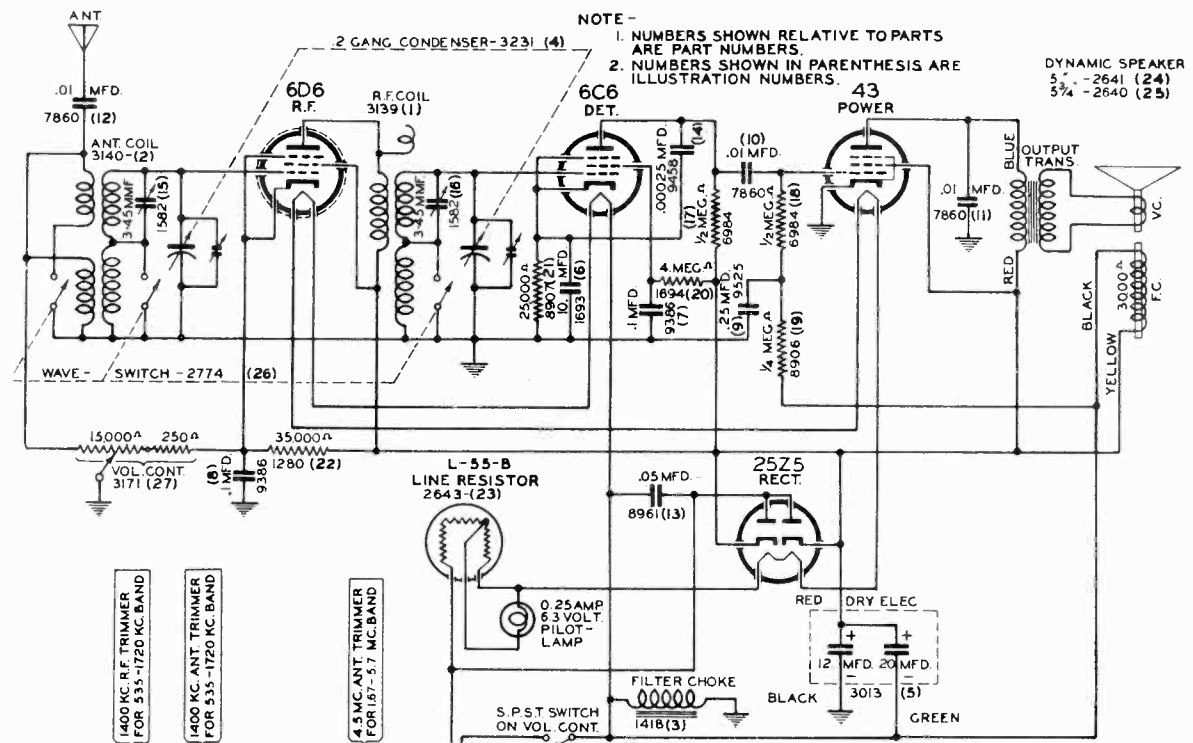
- L1 - WAVE TRAP COIL
- L2 - COMBINATION 3-BAND ANT. COIL
- L3-L4 - COMBINATION SW. & L.W. OSC. COIL
- L5 - M.W. OSCILLATOR COIL
- L6 - IRON CORE INPUT I.F.
- L7 - TRIPLE TUNED OUTPUT I.F.
- E40 - 40 MFD. 150 W.V.
- VC - 410 MMF. MAX. VARIABLE COND.
- T - 3 - 35 MMF. TRIMMER
- P1 - 4700 MMF. FIXED PADDER
- P2 - 500 MMF. MAX. PADDER
- P3 - 300 " "
- SWITCHES A, B, C, D, E, F - 2 DECK; EACH DECK 3 SECTION, 1 TO 3 POSITION EACH SECTION
- WAVE BAND SWITCH

MODEL X8312

Schematic, Socket Trimmers, Voltage Layout

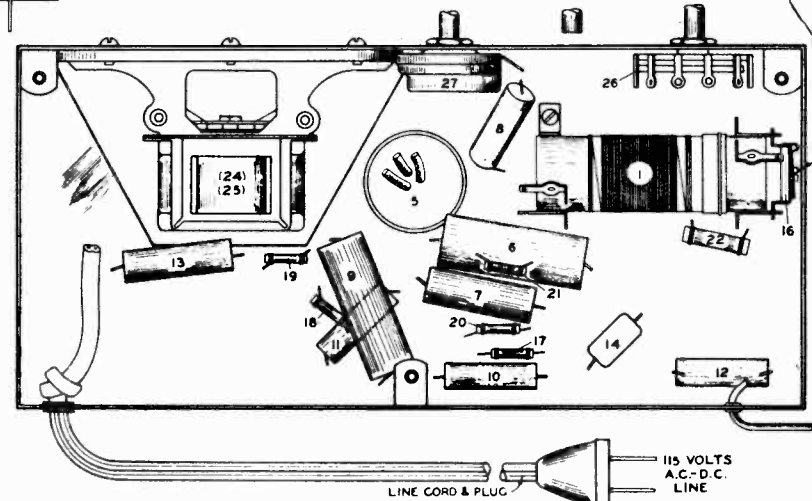
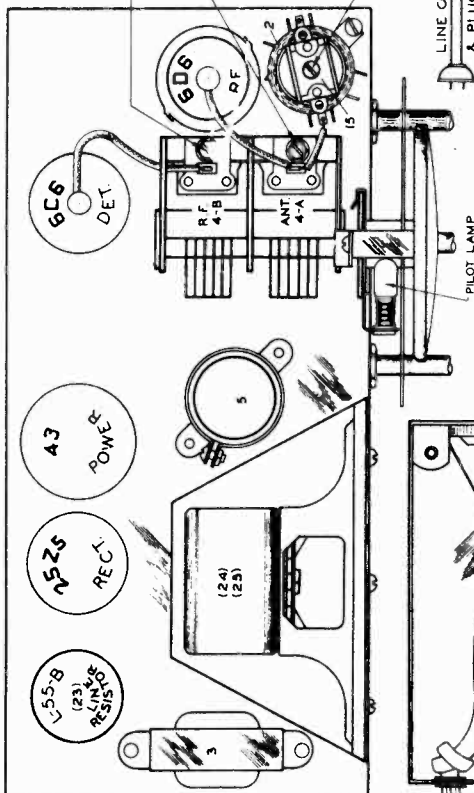
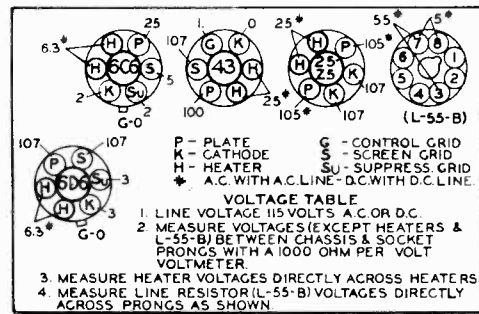
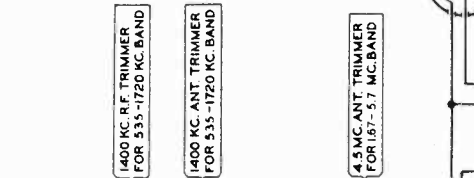
ALLIED RADIO CORP.

MODELS A9740, A9825 Chassis 69U



NOTE -
 1. NUMBERS SHOWN RELATIVE TO PARTS ARE PART NUMBERS.
 2. NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS.

DYNAMIC SPEAKER
 5" - 2641 (24)
 3 1/2" - 2640 (25)



MODELS A9740, A9825
Chassis 69U

ALLIED RADIO CORP.

Alignment, Coils
Parts

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

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

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

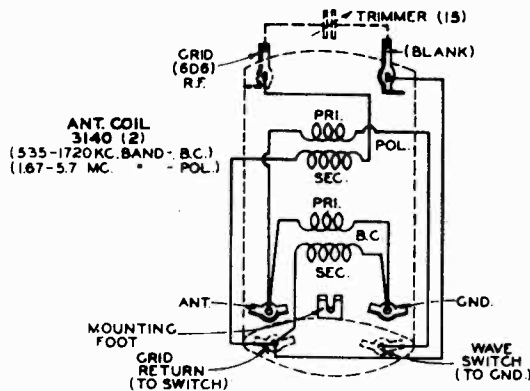
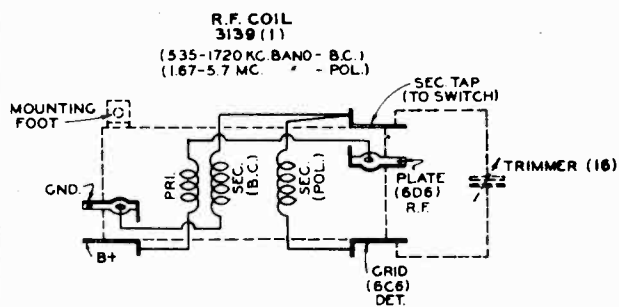
ALIGNING 1720-535 KILOCYCLE BAND:

- (a) Connect the ground lead of the test oscillator to the rotor frame of the gang condenser and the other test oscillator lead to the receiver antenna lead through a .00025 Mfd. series condenser.
- (b) Check tuning dial adjustment by turning gang condenser until plates touch maximum capacity stop, (completely in mesh) at which point the dial needle must be exactly even with the last line at the low frequency end of the dial calibration. If the dial needle does not point exactly to the last line, move needle to correct position.
- (c) Adjust band selector switch for operation on 1720-535 kilocycle band, set test oscillator frequency and receiver dial to 1400 kilocycles.
- (d) Adjust trimmers mounted on top of gang condenser for maximum 1400 kilocycle test oscillator signal output.
- (e) Check dial calibration and sensitivity at 1000 kilocycles, 700 kilocycles and 600 kilocycles. If gang condenser plates have not been bent and if antenna and R.F. coils are in good condition the gang condenser will properly track all over the band. If sensitivity is low and dial calibration incorrect, it may be necessary to bend the condenser plates at above frequencies to properly align the receiver.

IMPORTANT: Bending of plates is to be avoided if at all possible.

ALIGNING 1.67-5.7 MEGACYCLE BAND:

- (a) Replace .00025 Mfd. test oscillator lead series condenser with a 400 ohm resistor. Adjust band selector switch for operation on 1.67 to 5.7 megacycle band and tune receiver dial and set test oscillator frequency to EXACTLY 4.5 megacycles.
- (b) Adjust the two trimmers mounted on the antenna and R.F. coil, one of which is located underneath the chassis, and one on top of the chassis for maximum 4.5 megacycle test oscillator signal response.
- (c) Check dial calibration at 3 megacycles and 1.7 megacycles, BUT DO NOT BEND GANG CONDENSER PLATES ON THIS BAND.
- (d) To assure adequate sensitivity regeneration is present on this band. Receiver should oscillate around 2.5 megacycles when the volume control is at maximum volume position. If oscillation cannot be controlled with volume control, oscillation may be reduced by spreading out or uncoiling a few turns of the coupling coil, which is located underneath the chassis between the wave switch and volume control.



Illus. No.	Part No.	Part Name	Description	List Price
1	3139	Coil	R.F.	.83
2	3140	Coil	Antenna	.83
3	1418	Choke	Filter	.92
4	3231	Condenser	Two Gang Tuning	2.65
5	3013	Condenser	Dry Electrolytic (1-12 & 1-20 Mfd.)	1.50
6	1693	Condenser	Dry Electrolytic Tubular 10 Mfd.	.75
7	9386	Condenser	Tubular .1 Mfd. 200 Volt	.19
8	9386	Condenser	Tubular .1 Mfd. 200 Volt	.19
9	9525	Condenser	Tubular .25 Mfd. 200 Volt	.24
10	7860	Condenser	Tubular .01 Mfd. 400 Volt	.17
11	7860	Condenser	Tubular .01 Mfd. 400 Volt	.17
12	7860	Condenser	Tubular .01 Mfd. 400 Volt	.17
13	8961	Condenser	Tubular .05 Mfd. 400 Volt	.19
14	9458	Condenser	Mica .00025 Mfd.	.21
15	1582	Condenser	Trimmer (3-45 M.M.F.)	.21
16	1582	Condenser	Trimmer (3-45 M.M.F.)	.21
17	6984	Resistor	Carbon 500,000 Ohm 1/3 Watt	.19
18	6984	Resistor	Carbon 500,000 Ohm 1/3 Watt	.19

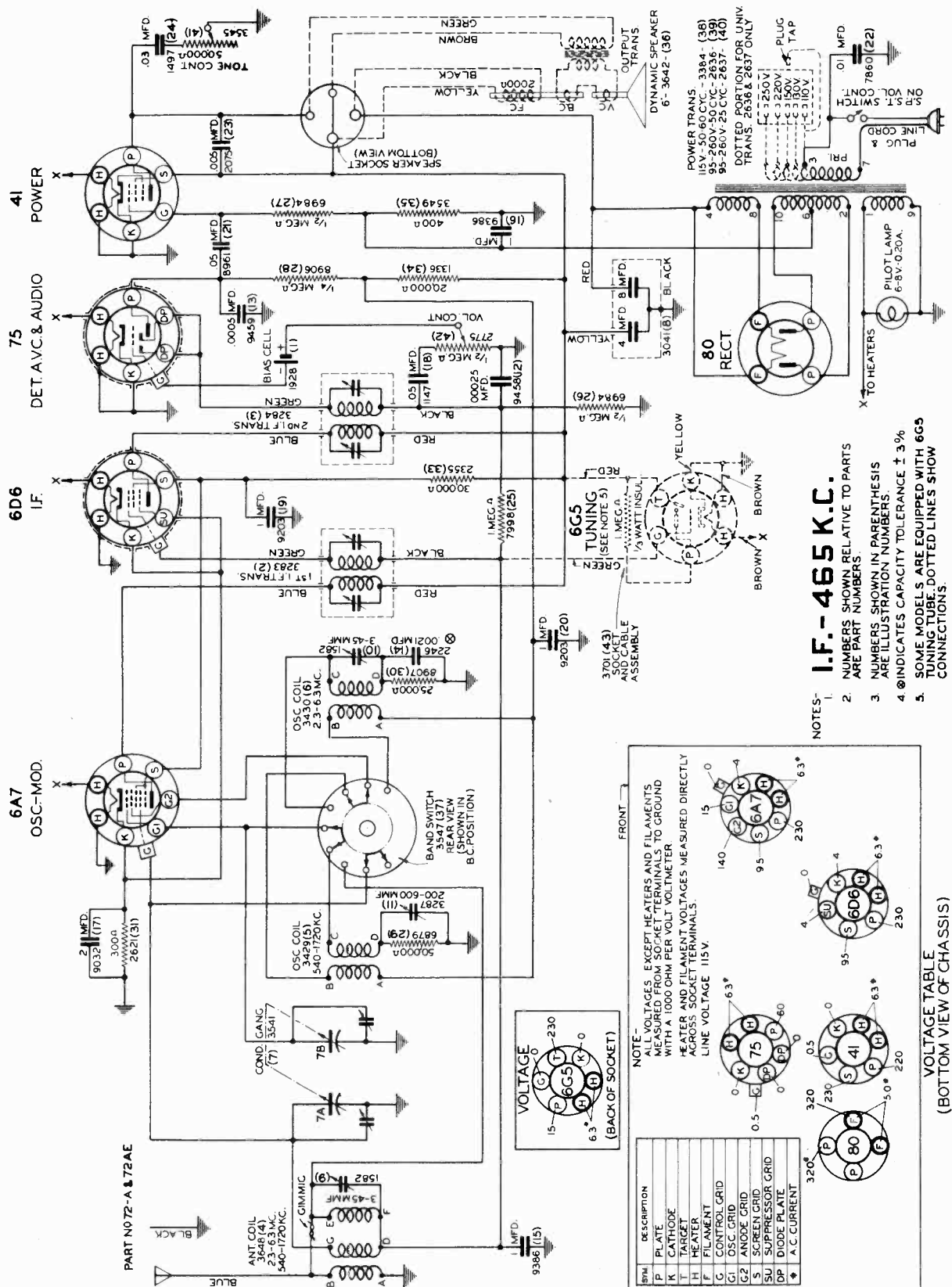
Illus. No.	Part No.	Part Name	Description	List Price
19	8906	Resistor	Carbon 250,000 Ohm 1/3 Watt	.19
20	1694	Resistor	Carbon 4 Meg. Ohm 1/3 Watt	.19
21	8907	Resistor	Carbon 25,000 Ohm 1/3 Watt	.19
22	1280	Resistor	Carbon 35,000 Ohm 1/2 Watt	.19
23	2643	Resistor	Line with Tube Type Octal Base Marked L-55-B	.75
24	2641	Speaker	Dynamic (5")	4.75
25	2640	Speaker	Dynamic (5 3/4")	5.25
26	2774	Switch	Band Selector	.69
27	3171	Volume Control	With On-Off Switch	1.05
MISCELLANEOUS				
	2250	Bulb	6.3 Volt, .250 Amp. Dial Light	.19
	3111	Dial Assembly	Complete Tuning Assembly (Mention Required Name)	2.75
	3112	Dial Scale	Calibrated Scale (Mention Required Name)	.50
	3300	Glass	For Dial	.35
	3031	Knob	Small	.19
	3032	Knob	Large	.18

Prices are subject to change without notice.

Part No. 69U

ALLIED RADIO CORP.

MODEL A9741 Chassis 72A Schematic, Voltage



- NOTES-**
1. I.F. - 465 K.C.
 2. NUMBERS SHOWN RELATIVE TO PARTS ARE PART NUMBERS
 3. NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS.
 4. ⊕ INDICATES CAPACITY TOLERANCE ± 3%
 5. SOME MODEL S ARE EQUIPPED WITH 6G5 TUNING TUBE. DOTTED LINES SHOW CONNECTIONS.

VOLTAGE TABLE (BOTTOM VIEW OF CHASSIS)

SYM	DESCRIPTION	VOLTS
P	PLATE	320*
K	CATHODE	0
T	TARGET	0
H	HEATER	6.3*
F	FILAMENT	6.3*
G	CONTROL GRID	0
G1	OSC GRID	0
G2	ANODE GRID	0
S	SCREEN GRID	0
SU	SUPPRESSOR GRID	0
DP	DIODE PLATE	0
⊕	A.C. CURRENT	

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

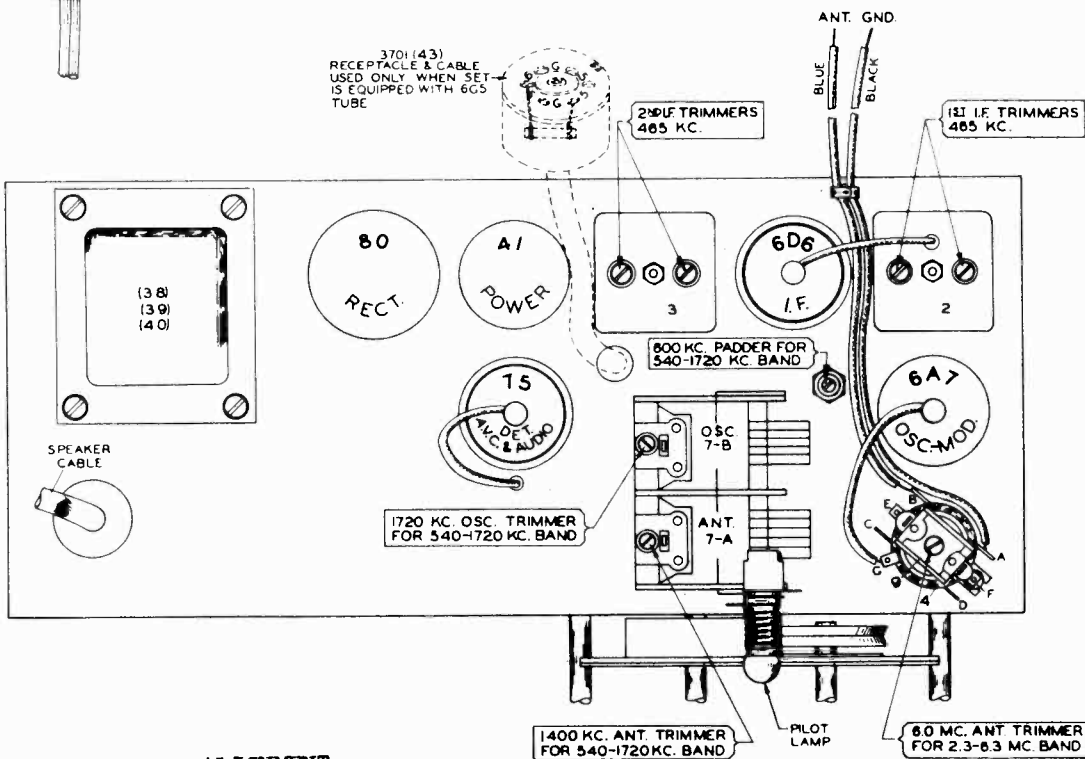
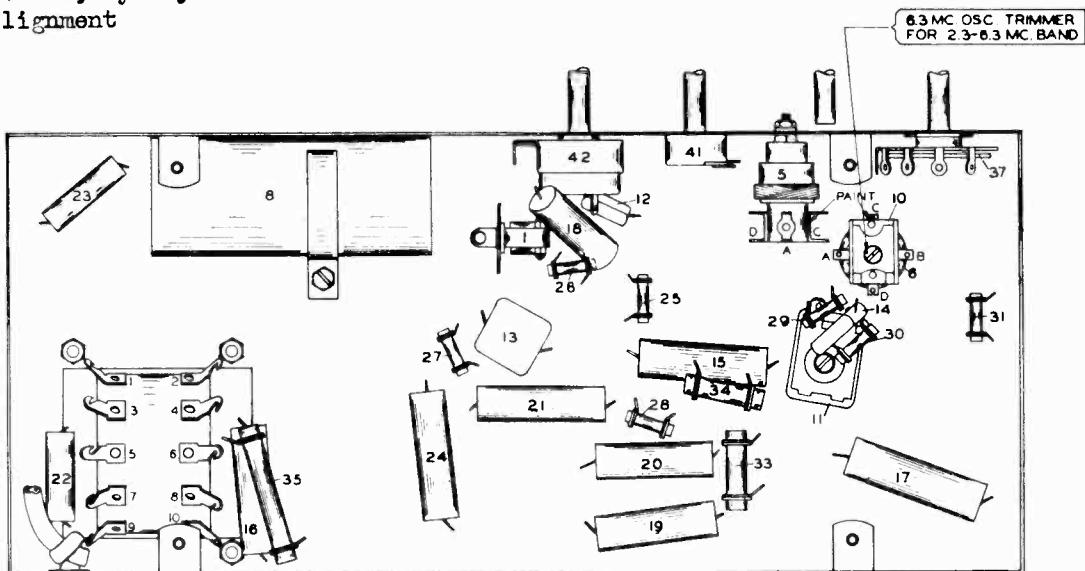
VOLTAGE (BACK OF SOCKET)

VOLTAGE TABLE (FRONT VIEW OF CHASSIS)

FRONT

MODEL A9741
 Chassis 72A
 Socket, Layout, Trimmers
 Alignment

ALLIED RADIO CORP.



Some of these models are equipped with a 6G5 Cathode ray visual tuning indicator tube. The parts and connections shown in dotted lines on the circuit and parts layout diagrams are used only when the 6G5 tube is incorporated in the receiver.

REPEAT ALL ADJUSTMENTS SEVERAL TIMES-USING LOWEST POSSIBLE TEST OSCILLATOR OUTPUT.

ALIGNMENT

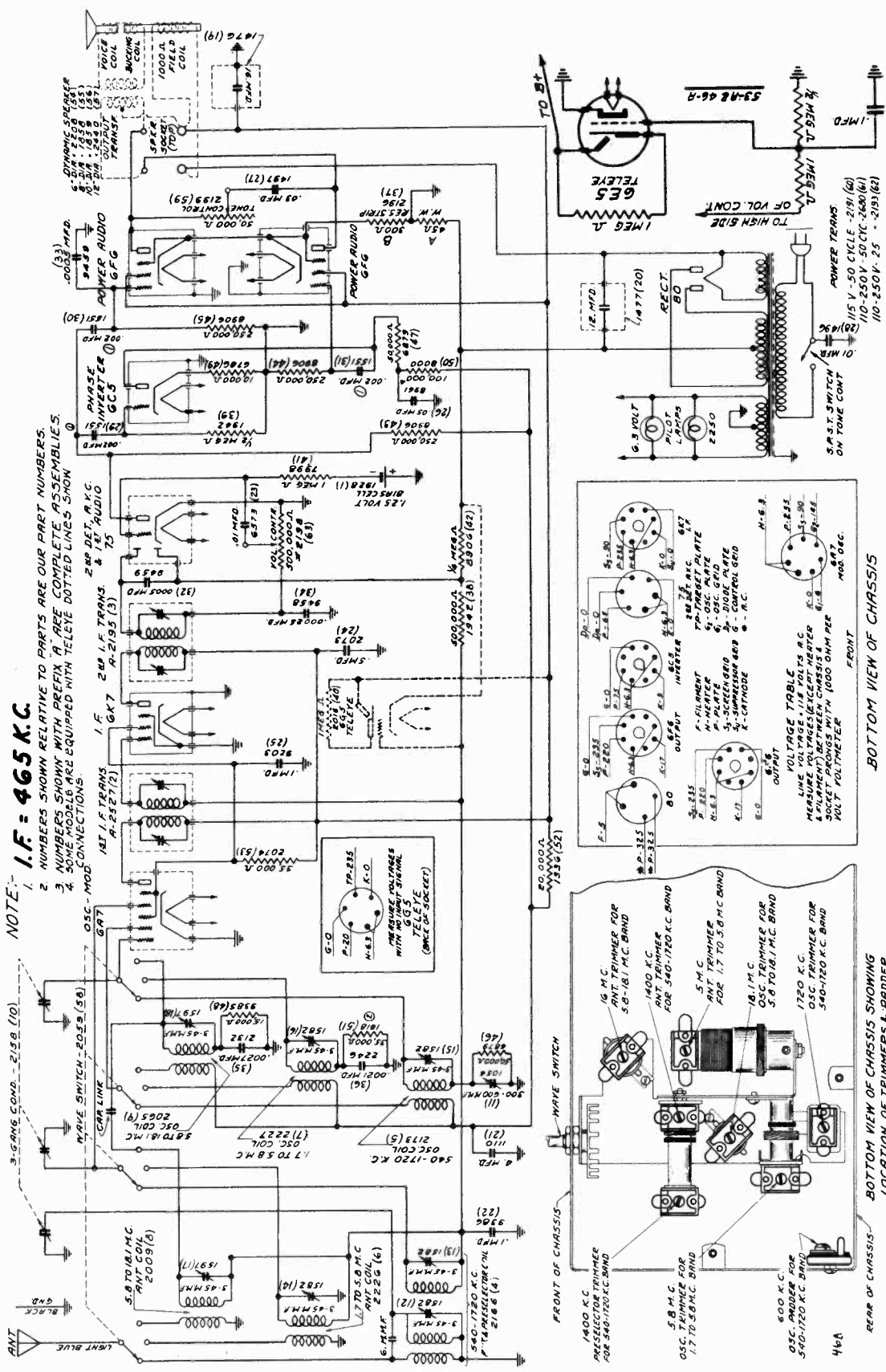
- I.F.--CONNECT TEST OSCILLATOR TO 6A7 GRID CAP THROUGH a.02Mfd COND.(DO NOT REMOVE THE GRID CLIP)AND CHASSIS GROUND. TURN VOL.CONT.TO FULL ON. PEAK 2nd and 1st I.F. TRANS. TRIMMERS TO MAX.AT 465 K.C.
- R.F.--CONNECT TEST OSCILLATOR TO RECEIVER ANT.THROUGH A .00025Mfd COND AND TO CHASSIS GROUND. TURN GANG CONDENSER TO FULLY CLOSED POSITION-DIAL POINTER SHOULD BE AT 1720 LAST LINE AT LOW-FREQ. END OF DIAL CALIBRATION(SHIFT POINTER IF NECESSARY). TO SET REC. DIAL & TEST OSC. FREQ. TO 1720 K.C.--ADJUST OSC. H.F. TRIMMER TO MAXIMUM PEAK(TRIMMER IS ON TOP OF REAR SECTION OF GANG COND.). SHIFT REC.DIAL & TEST OSC. TO 1400 K.C.--ADJUST ANT. TRIMMER TO MAX.(FRONT SECT. OF GANG COND.). BAND SHIFT TO 600 K.C.**ADJUST OSC. PADDER(THROUGH HOLE IN TOP OF CHASSIS NEXT TO GANG COND.)TO MAX. PEAK WHILE ROCKING TUNING COND.
- R.F.-- SUBSTITUTE 400 ohm RES. FOR .00025Mfd COND. ABOVE. SET BAND-SELECTOR SWITCH TO S.W. S.W. POSITION--TUNE REC.DIAL & TEST OSC. TO 6.3 MEGACYCLES--ADJUST THE 6.3 MC TRIMMER (OSCILLATOR H.F.)TO MAXIMUM PEAK. SHIFT REC.DIAL & TEST OSC. TO THE 6.3 MC 6.0 MC POSITION--ADJUST THE 6.0 MC ANTENNA TRIMMER TO MAXIMUM PEAK .

Chassis 46A

Schematic, Trimmers, Voltage

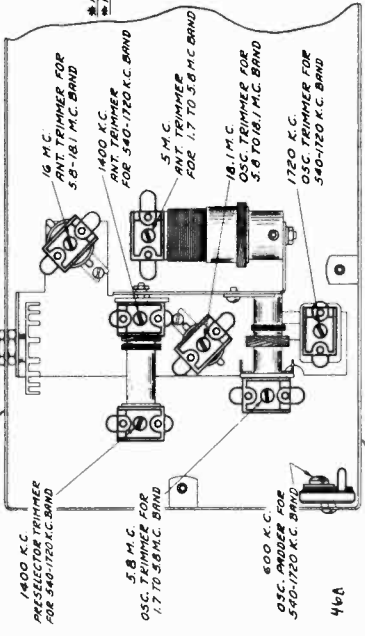
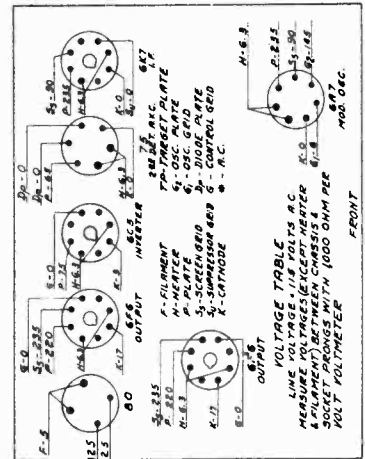
ALLIED RADIO CORP.

MODELS A9752, A9753, A9754, A9755



NOTE: 1. I.F. = 465 K.C.

- 2. NUMBERS SHOWN RELATIVE TO PARTS ARE OUR PART NUMBERS.
- 3. NUMBERS SHOWN WITH PREFIX "A" ARE COMPLETE ASSEMBLIES.
- 4. SOME MODELS ARE EQUIPPED WITH TELETYPE DOTTED LINES SHOWN.



BOTTOM VIEW OF CHASSIS

BOTTOM VIEW OF CHASSIS SHOWING LOCATION OF TRIMMERS & PRORER

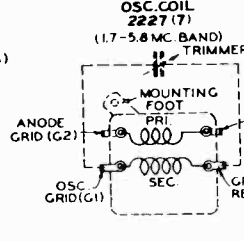
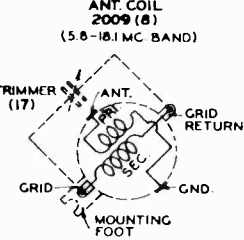
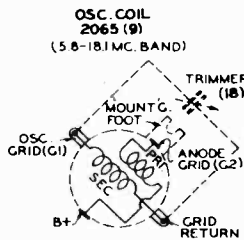
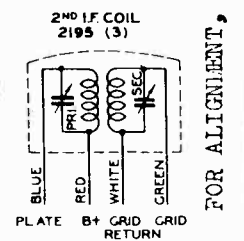
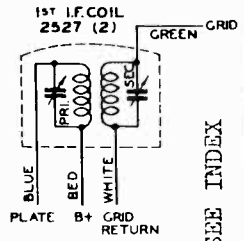
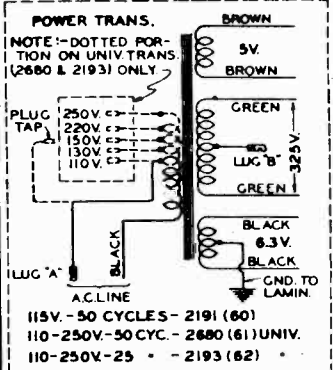
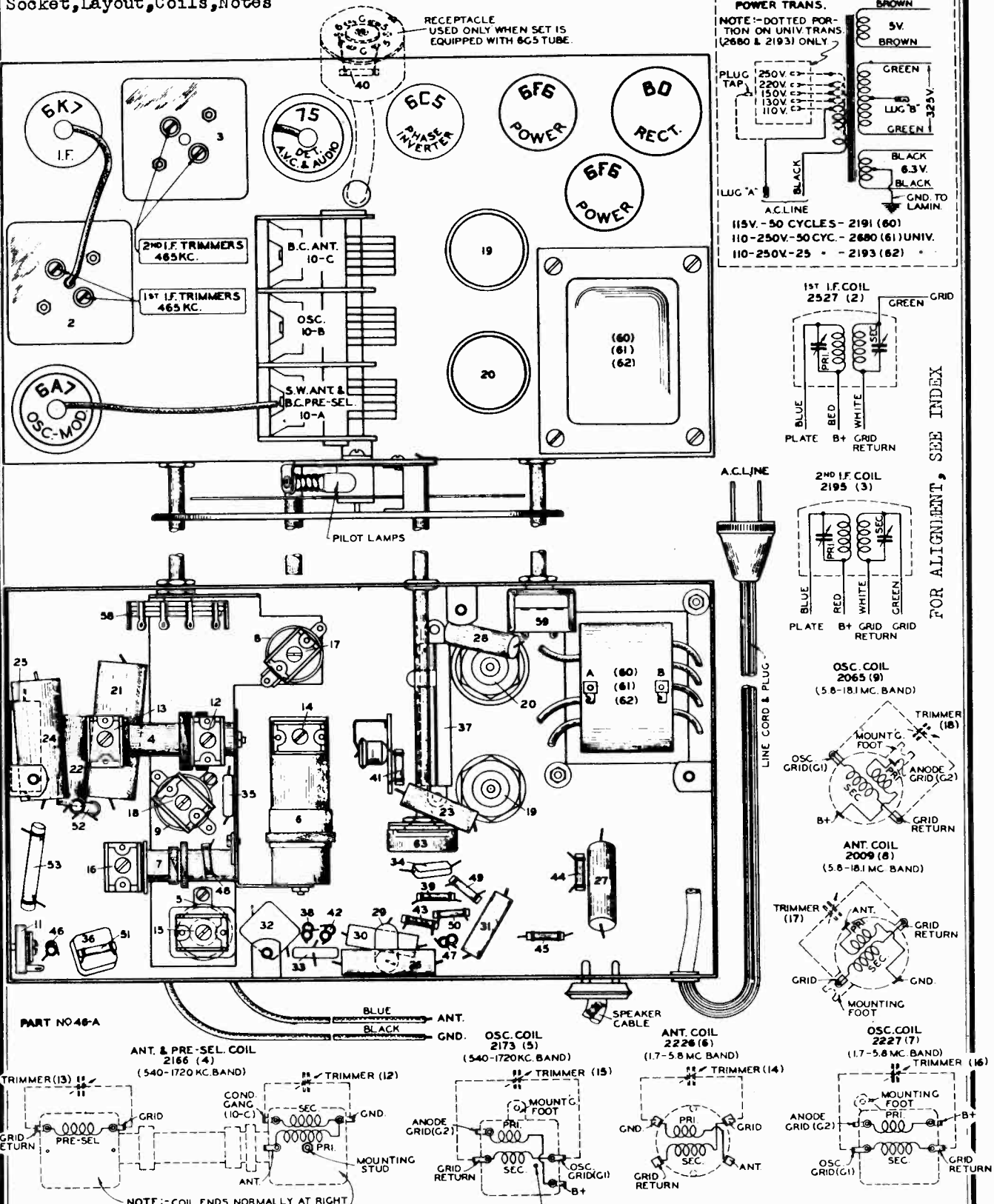
MODELS A9752, A9753, A9754

A9755

Chassis 46A

Socket, Layout, Coils, Notes

ALLIED RADIO CORP.

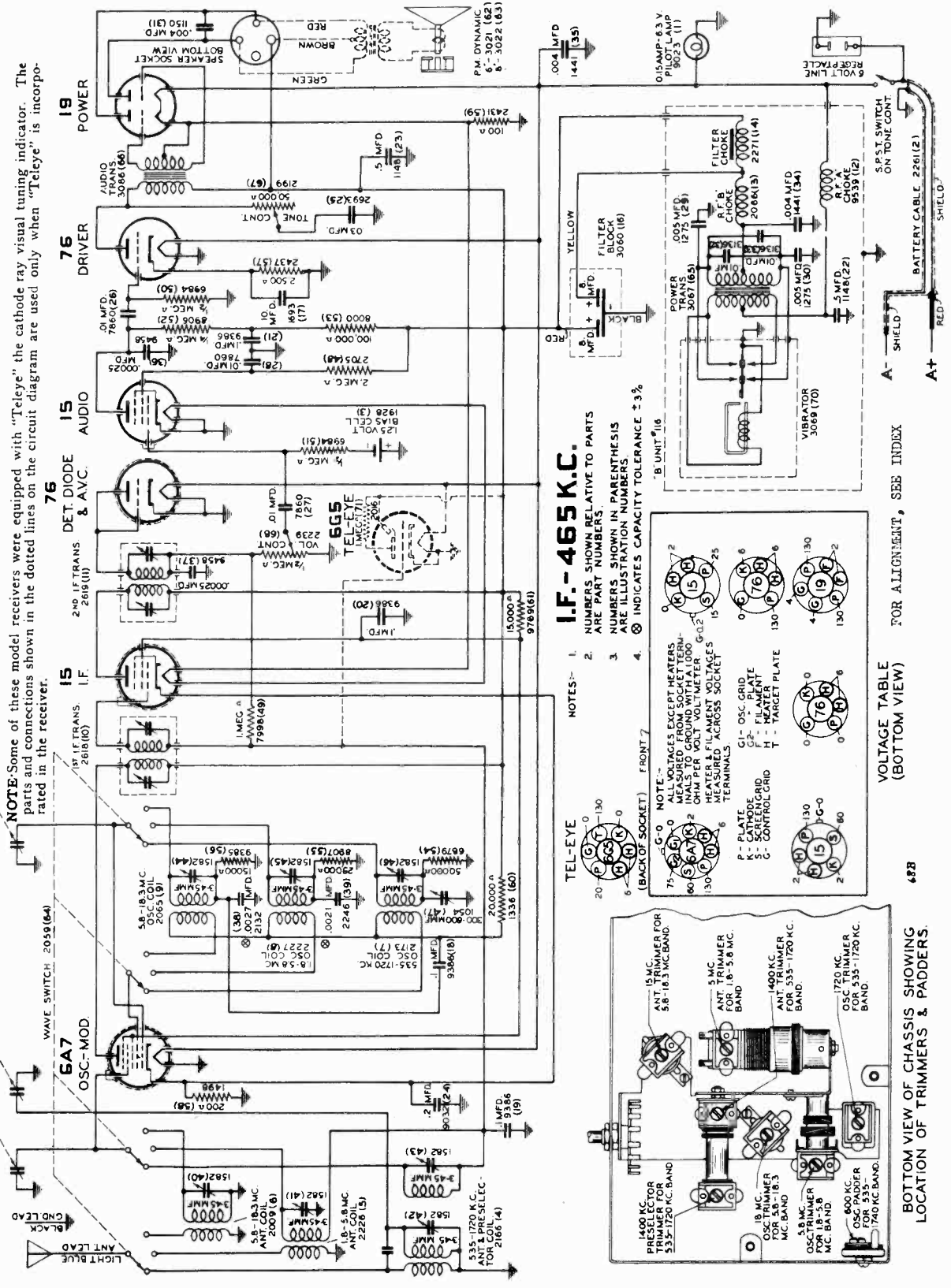


NOTE: Some of these model receivers were equipped with "Teleye" the cathode ray visual tuning indicator. A 6E5 tube was used in early production models, which was replaced by a 6G5 tube in later production. The parts and connections shown in the dotted lines on the complete circuit diagram are used only when a 6G5 "Teleye" tube is incorporated in the receiver. The **schem. diag.** shows 6E5 tube connections.

Schematic, Trimmers Voltage

ALLIED RADIO CORP.

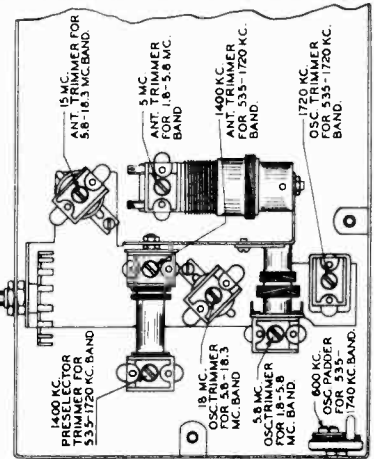
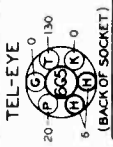
MODELS A9768, A9769, A9770 Chassis 68B, 68BE



NOTE-Some of these model receivers were equipped with "Teleye" the cathode ray visual tuning indicator. The parts and connections shown in the dotted lines on the circuit diagram are used only when "Teleye" is incorporated in the receiver.

I.F. - 465 K.C.

- NOTES:-
1. NUMBERS SHOWN RELATIVE TO PARTS ARE PART NUMBERS
 2. NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS
 3. ⊕ INDICATES CAPACITY TOLERANCE ± 3%
 4. ⊗ UNIT #16

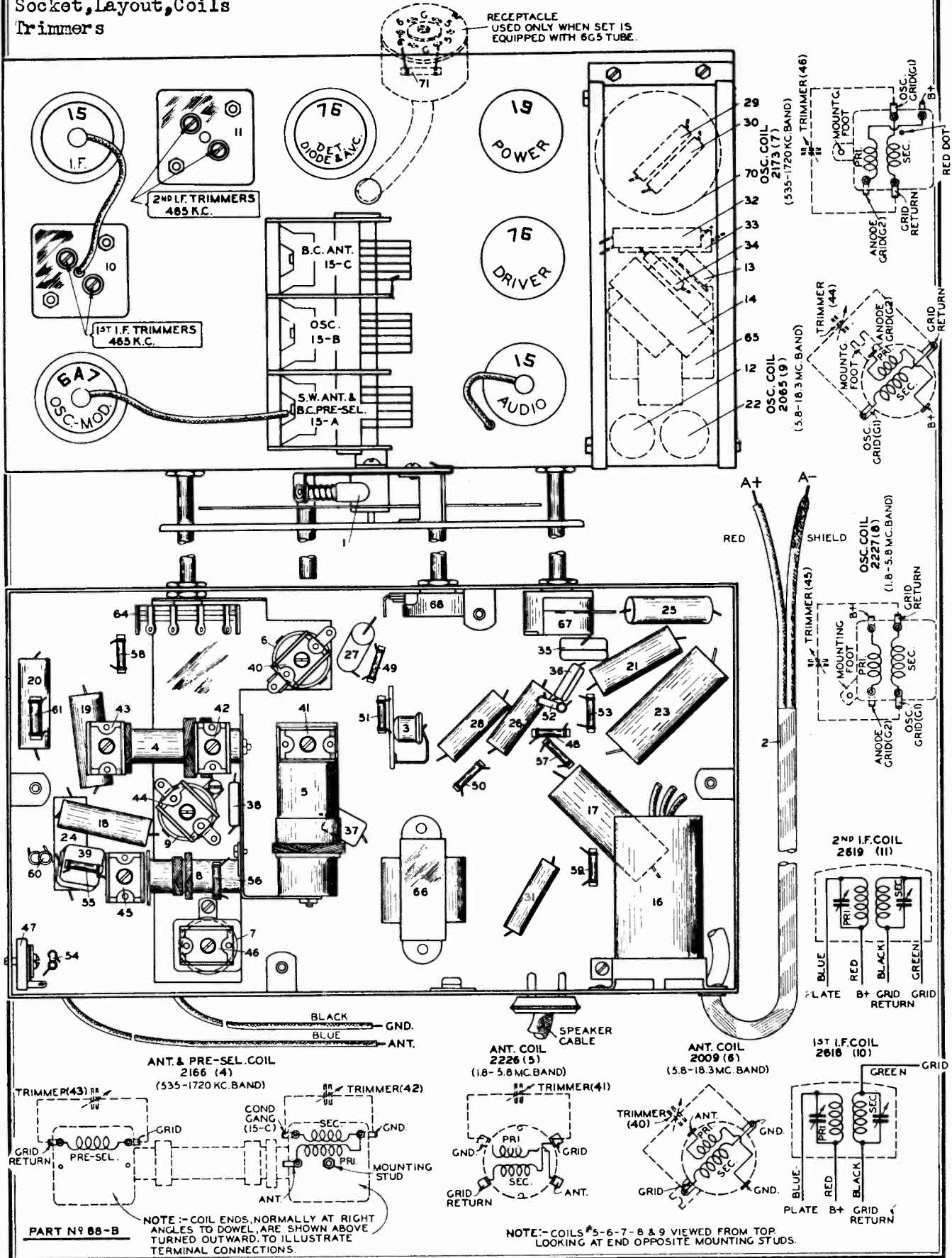


VOLTAGE TABLE (BOTTOM VIEW)

FOR ALIGNMENT, SEE INDEX

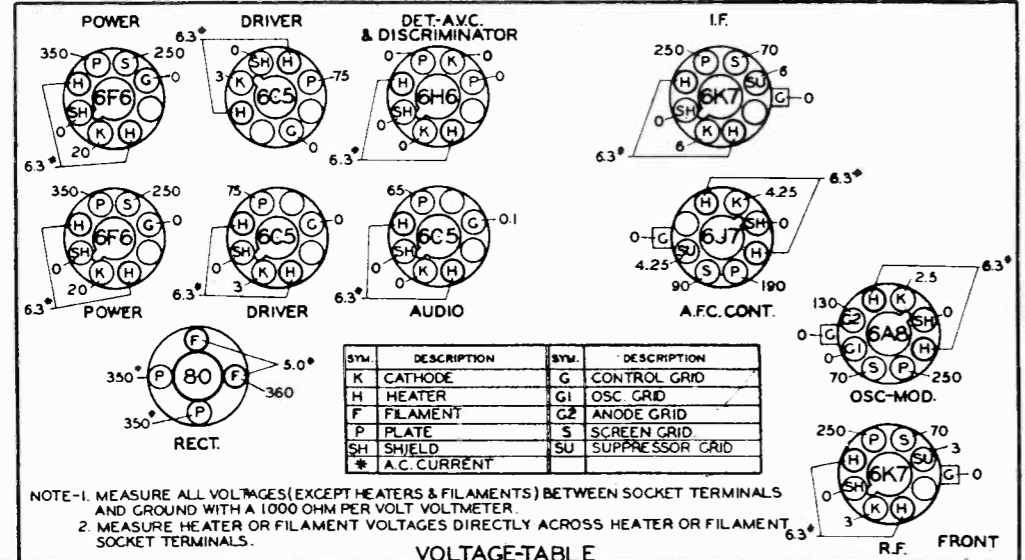
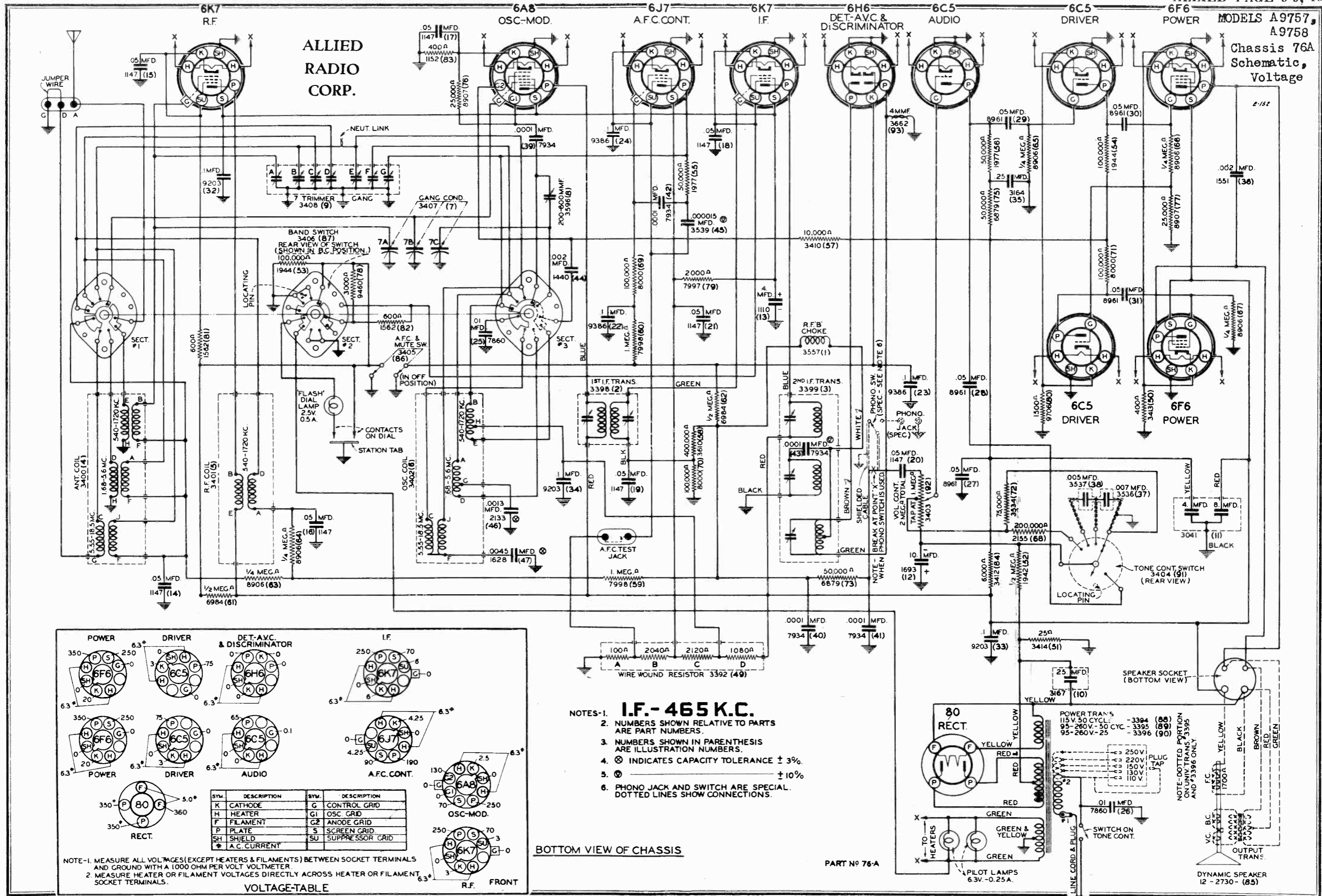
ALLIED RADIO CORP.

MODELS A9768, A9769, A9770
Chassis 68B, 68BE
Socket, Layout, Coils
Trimmers



ALLIED
RADIO
CORP.

MODELS A9757,
A9758
Chassis 76A
Schematic,
Voltage



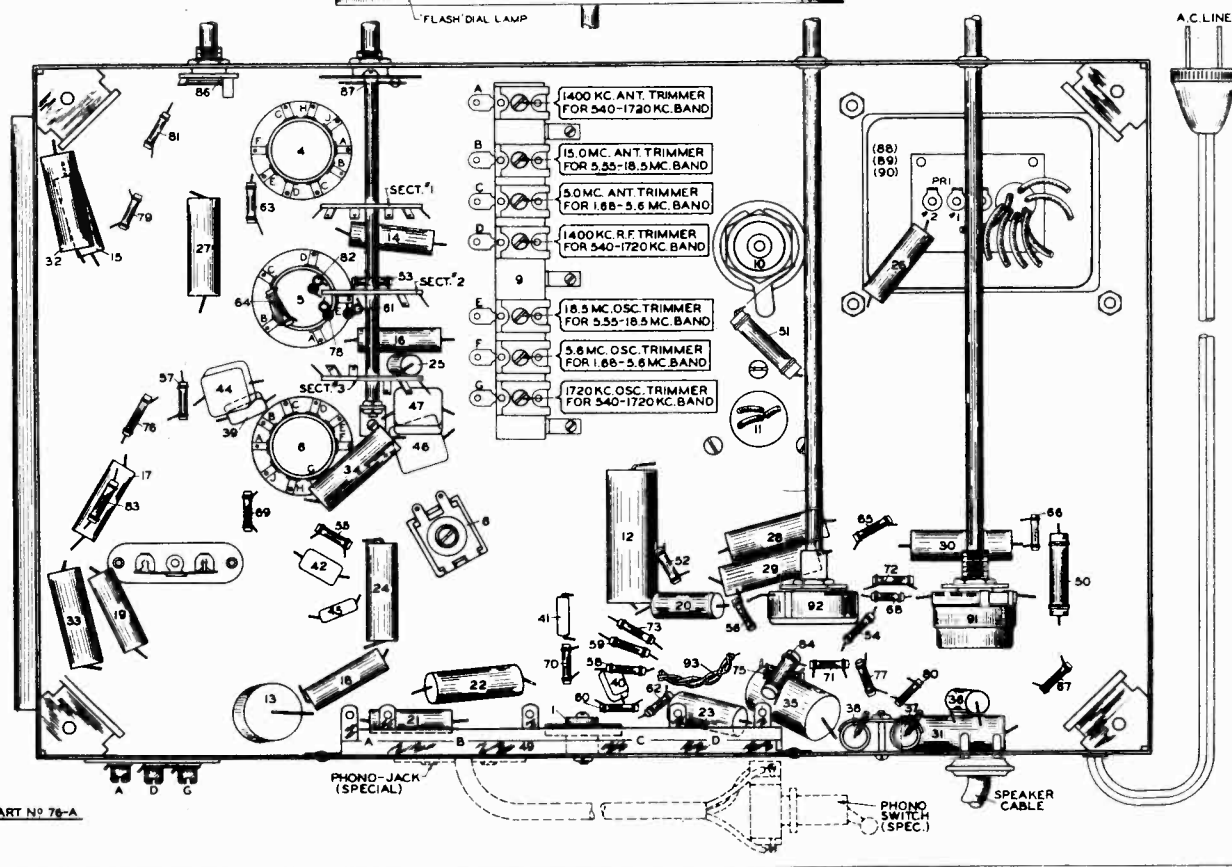
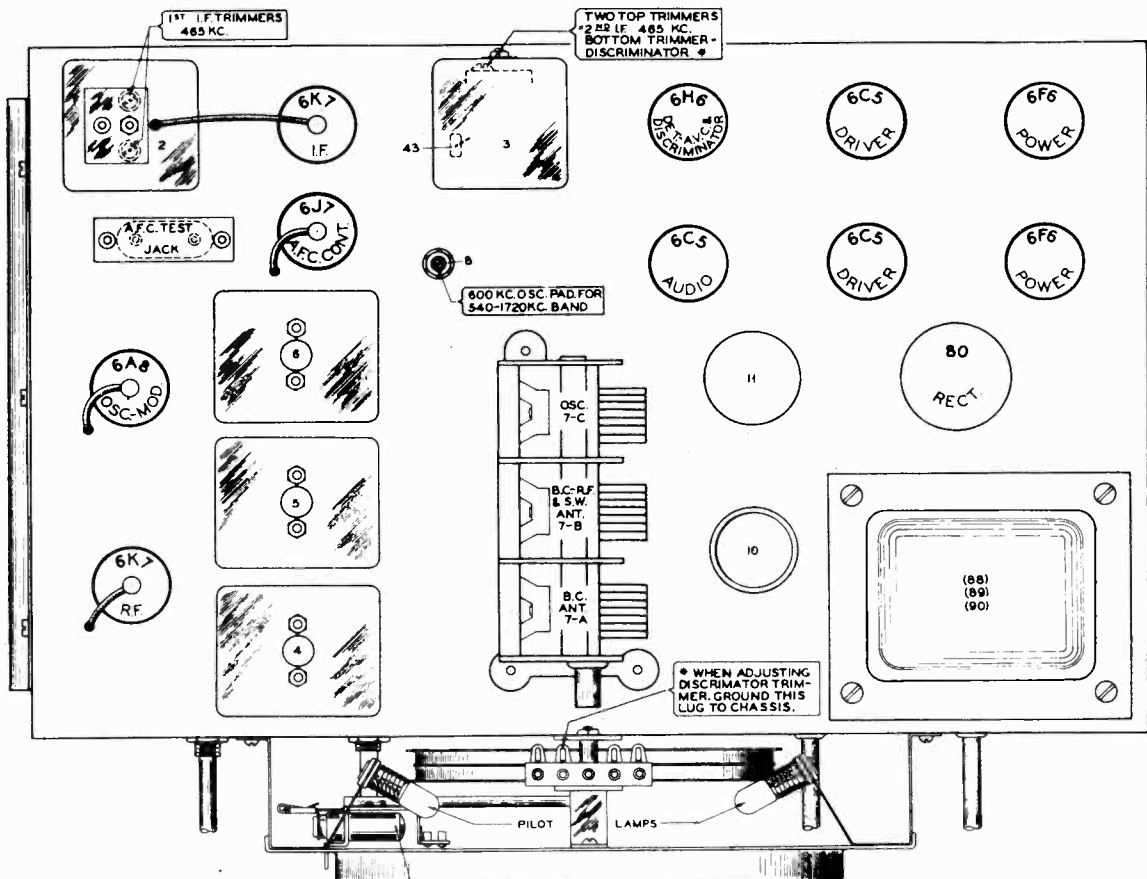
- NOTES-1. **I.F. - 465 K.C.**
- NUMBERS SHOWN RELATIVE TO PARTS ARE PART NUMBERS.
 - NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS.
 - ⊗ INDICATES CAPACITY TOLERANCE ± 3%.
 - ⊙ INDICATES CAPACITY TOLERANCE ± 10%.
 - PHONO JACK AND SWITCH ARE SPECIAL. DOTTED LINES SHOW CONNECTIONS.

BOTTOM VIEW OF CHASSIS

PART No 76-A

ALLIED RADIO CORP.

MODELS A9757, A9758
Chassis 76A
Socket, Trimmers
Layout



MODELS A9757, A9758
Chassis 76A
Alignment, Tuner

ALLIED RADIO CORP.

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.
4. To assure most accurate adjustment always carefully repeat all adjustments several times.
5. Once the alignment of the receiver has been completed, do not change the oscillator control tube, particularly with one of a different make.

ALIGNING I.F. STAGE AT 465 KILOCYCLES:

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

ALIGNING 1720-540 KILOCYCLE BAND:

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

ALIGNING DISCRIMINATOR CIRCUIT:

- (a) After completing 1720-540 kilocycle adjustment, set test oscillator 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 6L7 tube. To avoid possibility of damaging the meter should one of the milliammeter leads short to the metal chassis, ALWAYS TURN OFF RECEIVER WHEN INSERTING OR REMOVING MILLIAMMETER LEADS FROM A.F.C. TEST JACK.
- (b) Short out A.F.C. mute switch by grounding the second from the left (looking at the front of the chassis) of the four lugs mounted on top of the dial assembly. The proper lug to ground is indicated in the "Note X" on chassis top part view.
- (c) Turn receiver on, place A.F.C. switch knob in A.F.C. "on" 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.

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.

- (a) Rotate A.F.C. switch knob from A.F.C. "on" to A.F.C. "off" position and note whether the milliammeter reading changes as the position of the A.F.C. switch is changed. No change in reading indicates probable proper discriminator trimmer adjustment, while a noticeable change indicates improper discriminator trimmer adjustment.
- (b) IMPORTANT: DO NOT ADJUST DISCRIMINATOR TRIMMER UNLESS IT IS ABSOLUTELY NECESSARY. Place A.F.C. switch in A.F.C. "off" position and note milliammeter reading, then place A.F.C. switch in A.F.C. "on" position and CAREFULLY ADJUST DISCRIMINATOR TRIMMER UNTIL MILLIAMMETER READING IS EXACTLY THE SAME AS IT WAS WITH THE A.F.C. SWITCH IN THE "OFF" POSITION.

NOTE: As the discriminator trimmer screw is screwed in (increasing capacity) the milliammeter reading should decrease and as the discriminator trimmer is unscrewed (decreasing capacity) the milliammeter reading should increase. IF WHEN ADJUSTING THE DISCRIMINATOR TRIMMER THE MILLIAMMETER READING DOES NOT SHARPLY INCREASE OR DECREASE AS THE TRIMMER IS ADJUSTED EVEN AFTER SEVERAL TURNS OF THE TRIMMER SCREW, THIS DOES NOT INDICATE INCORRECT ADJUSTMENT 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 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 megacyycle test signal to maximum output by adjusting 5.6 M. C. oscillator trimmer.
- (c) Tune receiver dial and test oscillator frequency to EXACTLY 5 Megacycles and adjust 5 M.C. antenna trimmer for maximum sensitivity.

ALIGNING 5.55-18.5 MEGACYCLE BAND:

- (a) Leave 400 ohm resistor in series with test oscillator lead and place band selector switch for operation on 5.55-18.5 megacyycle 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 megacyycle test signal to maximum output.

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

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

"Automatic-Flash" tuning

1. Lay station call letter tab sheet on flat surface and with a razor or sharp knife cut out desired tabs by cutting around the black edges of each required station tab.
2. Unscrew the two knurled head screws mounted on front of the glass frame and then holding onto the screws pull dial glass away from the cabinet.
3. To illustrate the proper setting and installation of the metal holder and station call letter tabs, the receiver is shipped from the factory with a tab properly set for Station WGN, 720 kilocycles. Carefully study the way the call letter tab and celluloid envelope is inserted in the metal holder, and if WGN is not one of the selected stations, remove WGN celluloid envelope and call letter tab by sliding the celluloid envelope out through the top of the metal holder. See "B" in diagram.

(a) Dirt or corrosion on contact surface of tab holder or rail. (b) The rail to which the metal tab holders are clipped may be sprung forward, preventing contact between the mute switch and the tab holder. To correct this condition, press slightly inward near the middle of the rail, and if the motor-boating sound is eliminated and the signal is heard with normal clarity, it is a positive indication that the rail will have to be bent in slightly or—the contact surface of the metal holder is dirty or—the mute switch tension spring is bent back or has loosened. If the rail requires adjustment, place thumbs near the upper right and left ends of the rail and press slightly inward until proper contact is made to all metal holders. While the rail will naturally come forward slightly after pressure is released, do not attempt to force the rail inward with too much pressure at one point, as this may cause the contact surface to break. If the metal tab holders move as the tuning lever is rotated, the tabs have probably been sprung, which can be corrected by removing them from the rail and slightly squeezing the tabs with a pair of long nosed pliers so as to decrease the clearance between the rear contact portion of the metal tab and the front portion.

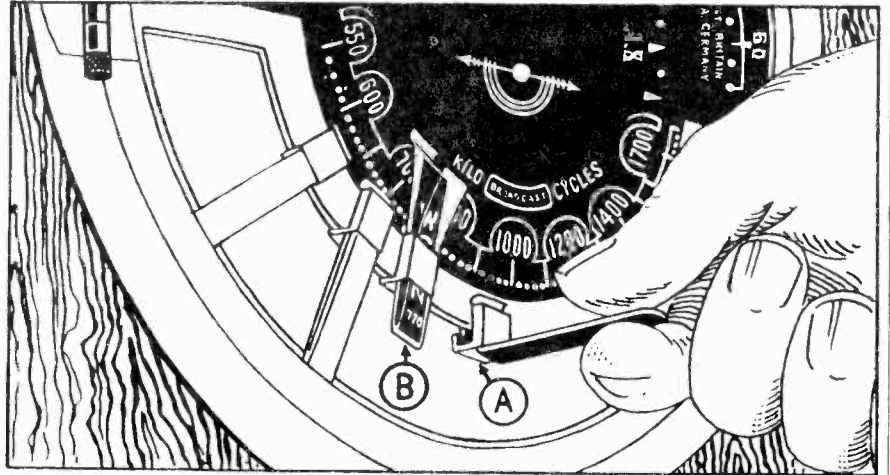
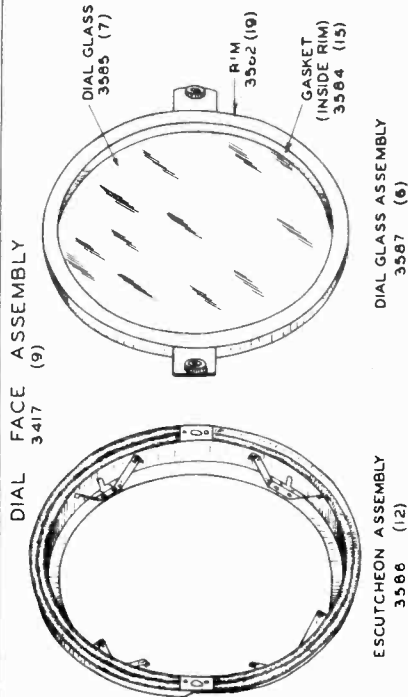
NOTE: When adjusting this trimmer two peaks, the fundamental and the image peak will be noticed. CARE MUST BE TAKEN THAT THE FUNDAMENTAL PEAK AND NOT THE IMAGE PEAK IS USED FOR ALIGNING THE RECEIVER AT 18.5 MEGACYCLES. Always back off the trimmer to minimum capacity, then screw down the trimmer (add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

4. Turn Automatic Frequency and Inter-Station Noise Silencer Control to maximum left hand position.
5. As it is desirable to begin setting metal tab holders at the lowest frequency possible, tune the receiver to the lowest frequency in the selected station which broadcasts on the lowest frequency—least number of kilocycles.
6. By using the metal holder tool (see "A" in diagram) or by using a sharp razor blade, carefully trim the metal holder tabs which are clipped to the low frequency end of the broadcast band (540 kilocycles) along the metal rail to which the metal holders are clipped, until a narrow light appears directly below the metal tab holder being adjusted. Place paper tab having call letters and frequency of station to be aligned on the metal holder, and push the metal holder down until the curved end of the celluloid envelope fits into the curved top of the metal holder.
7. Turn Automatic Frequency and Inter-Station Noise Silencer Control to the maximum right hand "Automatic-Flash" position. Slowly tune slightly to the right and left of the station tuned to, until the call letter tab is properly illuminated, the white face of the call letter tab will be illuminated at approx-

Dial Assembly, Parts Data

ALLIED RADIO CORP.

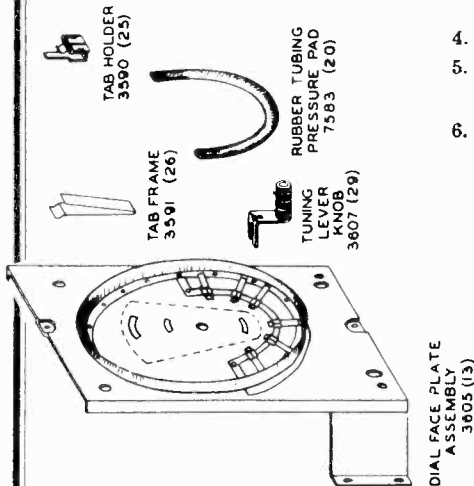
MODELS A9757, A9758
Chassis 76A



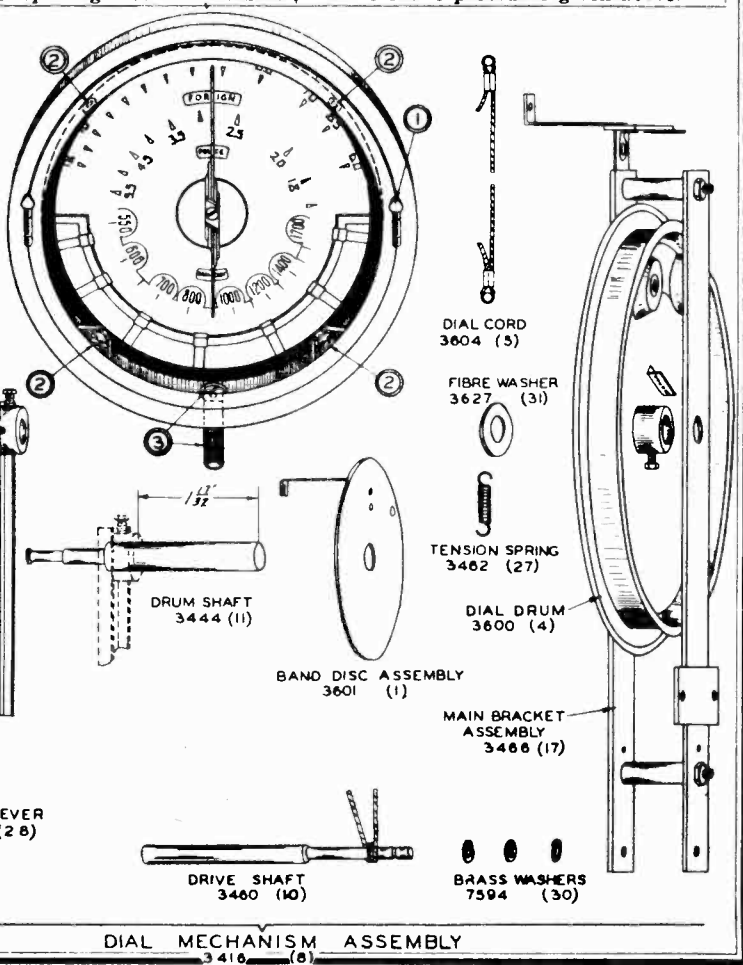
Above Diagram shows method of inserting and setting tabs.

PROCEDURE FOR REMOVING RECEIVER FROM CABINET.

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



NOTES—
1. NUMBERS SHOWN RELATIVE TO PARTS ARE PART NUMBERS.
2. NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS.



MODELS A9757, A9758

Chassis 76A

Parts

ALLIED RADIO CORP.

PARTS LIST

DIAL PARTS

Part No.	Part Name	Description	List Price
47	1628	Condenser	.21
49	3392	Resistor	1.15
50	3413	Resistor	.20
51	3414	Resistor	.19
52	1942	Resistor	.19
53	1944	Resistor	.19
54	1944	Resistor	.19
55	1977	Resistor	.19
56	3410	Resistor	.19
57	3410	Resistor	.19
58	3410	Resistor	.19
59	7998	Resistor	.19
60	7998	Resistor	.19
61	6984	Resistor	.19
62	6984	Resistor	.19
63	8006	Resistor	.19
64	8006	Resistor	.19
65	8006	Resistor	.19
66	8006	Resistor	.19
67	8006	Resistor	.19
68	2155	Resistor	.19
69	8000	Resistor	.19
70	8000	Resistor	.19
71	8000	Resistor	.19
72	3534	Resistor	.19
73	6879	Resistor	.19
74	6879	Resistor	.19
75	6879	Resistor	.19
76	8907	Resistor	.19
77	8907	Resistor	.19
78	9460	Resistor	.19
79	7997	Resistor	.19
80	9706	Resistor	.20
81	1562	Resistor	.20
82	1562	Resistor	.20
83	**1152	Resistor	.26
84	3412	Resistor	.18
85	2730	Speaker	.30
86	3405	Switch	.30
87	3406	Switch	.21
88	3394	Transformer	.21
89	3395	Transformer	.21
90	3396	Transformer	.21
91	3404	Tone Control	.21
92	3403	Volume Control	.21
93	3662	Condenser	.27
	*3738	Coil	.21

Part No.	Part Name	Description	List Price
18	6248	Pilot Light	\$12.75
19	3582	Rim	.20
20	7583	Rubber Tubing	.40
21	*5751	Socket Assembly For "Flash" Pilot Light	.25
22	7592	Speed Nut	1.10
23	3461	Spring Washer	.20
24	9805	Spring Washer	.20
25	3590	Tab Holder	1.25
26	3591	Tab Frame	.45
27	3462	Tension Spring	4.00
28	3602	Tuning Lever	4.00
29	3607	Tuning Lever	4.00
30	7594	Washers, Brass	7.75
31	3627	Washer, Fibre	.20
32	7593	Washers, Fibre	.35

MISCELLANEOUS PARTS LIST

Part No.	Part Name	Description	List Price
3089	Arm	Wave Switch	.06
3663	Cover	Meter Jack	.06
3666	Cover	2nd I.F. Trimmer Shield	.04
3665	Cover	1st I.F. Trimmer Shield	.03
3612	Guide Bracket	Chassis Right Hand	.05
3613	Guide Bracket	Chassis Left Hand	.05
2534	Knob	Marked "Tuning"	.30
2444	Knob	Marked "Volume"	.30

Prices are subject to change without notice

NOT SHOWN IN ASSEMBLIES

Call Letter Sheet No. 1 and No. 2

Net, Set

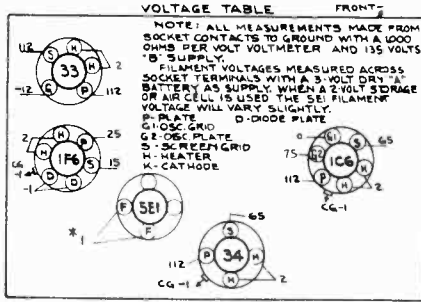
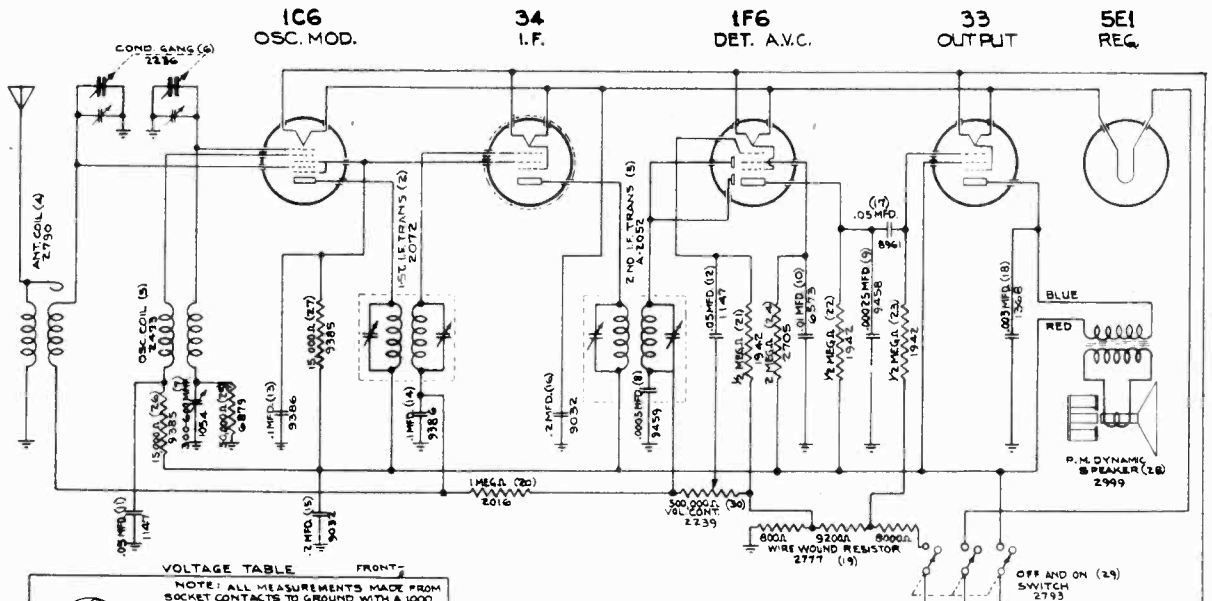
Note * 3463 Appears as 3643 on dial part diagram.

Note ** 3731 Appears as 2766 on dial part diagram.

Chassis 60B
Schematic, Voltage, Socket
Trimmers, Layout

ALLIED RADIO CORP.

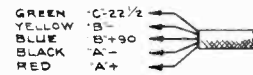
MODELS A9760, A9761, A9762
A9826, A9828



BOTTOM VIEW OF CHASSIS

CABLE CONNECTIONS WHEN USING THREE 'B' BATTERIES

- GREEN 'B'
- YELLOW 'B+22'
- BLUE 'B+135'
- BLACK 'A'
- RED 'A+'

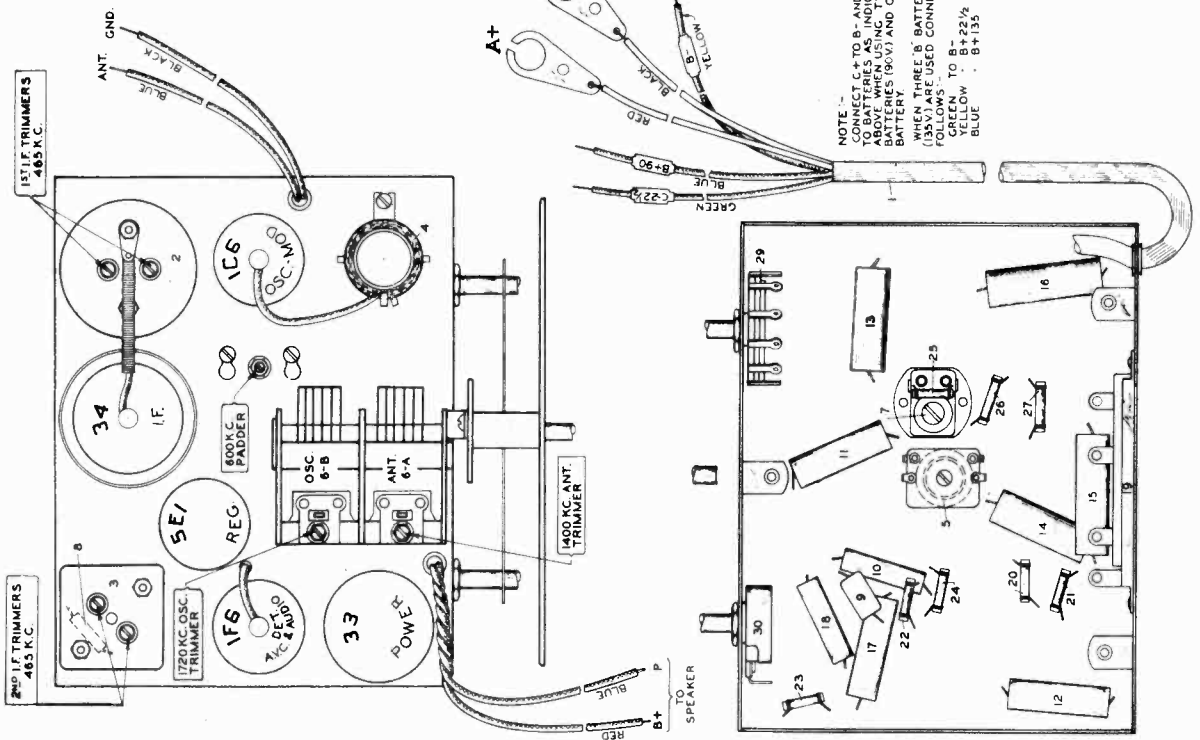


I.F. - 465 K.C.

CABLE CONNECTIONS WHEN USING TWO 'B' BATTERIES AND ONE 'C' BATTERY.

NOTE: CONNECT C+ TO B- AND CABLE TO BATTERIES AS INDICATED BY BATTERIES (90V) AND ONE 'C' BATTERY (135V) ARE USED CONNECT AS FOLLOWS:

- GREEN TO B-
- YELLOW TO B+22 1/2
- BLUE TO B+135



MODELS A9760, A9761, A9762
A9826, A9828

ALLIED RADIO CORP.

Chassis 60B

Alignment, Coils, Parts

Alignment of this receiver should never be necessary unless one of the coils has been replaced.

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

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

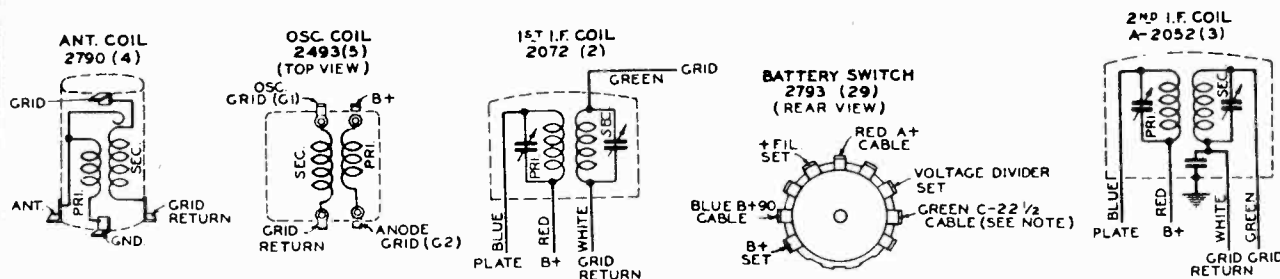
IT IS ABSOLUTELY NECESSARY THAT AN ACCURATELY CALIBRATED TEST OSCILLATOR WITH SOME TYPE OF OUTPUT MEASURING DEVICE BE USED WHEN ALIGNING THE RECEIVER.

ALIGNING I. F. STAGE AT 465 KILOCYCLES:

- (a) Connect the ground lead of the test oscillator to the chassis or set ground lead. Connect the other lead of the test oscillator to the grid cap of the 1C6 tube through a .02 Mfd. series condenser. **DO NOT REMOVE GRID CLIP.**
 - (b) Set test oscillator to **EXACTLY** 465 kilocycles and turn receiver volume control on full.
 - (c) Peak each of the second I. F. transformer trimmers.
 - (d) Peak each of the first I. F. transformer trimmers.
- To assure most accurate trimmer setting repeat above adjustment several times always using lowest possible test oscillator output consistent with readable output meter scale deflection.

ALIGNING ANTENNA AND OSCILLATOR CIRCUIT:

- (a) Remove test oscillator lead from grid of the 1C6 tube and attach it to the receiver antenna lead through a .00025 Mfd. series condenser.
- (b) Check tuning dial adjustment by turning gang condenser until plates touch maximum capacity stop (completely in mesh), at which point the dial needle must be exactly even with the last line at the low frequency end of the dial calibration. If the dial needle does not point exactly to the last line move needle to correct position.
- (c) Set receiver dial and test oscillator frequency to **EXACTLY** 1720 kilocycles.
- (d) Bring in 1720 KC test oscillator signal to maximum output by adjusting the trimmer condenser mounted on top of the oscillator section of the gang condenser. Looking at the front of the receiver the rear section of the gang condenser is the oscillator section.
- (e) Tune receiver dial and set test oscillator frequency to **EXACTLY** 1400 kilocycles.
- (f) Adjust trimmer on top of the front section gang condenser (antenna section) for maximum 1400 kilocycle test signal response.
- (g) Tune receiver dial and set test oscillator frequency to approximately 600 kilocycles.
- (h) While rocking the tuning condenser back and forth adjust 600 KC oscillator padder condenser which is accessible through the hole in the top of the chassis adjacent to the gang condenser for maximum 600 kilocycle signal response.



Illus. No.	Part No.	Part Name	Description	List Price
1	2240	Cable	5 Conductor Battery	.68
2	2072	Coil	1st I. F. Trans.	1.55
3	2052	Coil	2nd I. F. Trans.	1.90
4	2790	Coil	Antenna	1.00
5	2493	Coil	Oscillator	.55
6	2236	Condenser	Two Gang Tuning	2.50
7	1054	Condenser	Padding (300-600 M.M.F.)	.55
8	9459	Condenser	Mica 0.0005 Mfd.	.21
9	9458	Condenser	Mica 0.00025 Mfd.	.21
10	6573	Condenser	Tubular 0.01 Mfd. 200 Volt	.17
11	1147	Condenser	Tubular 0.05 Mfd. 200 Volt	.19
12	1147	Condenser	Tubular 0.05 Mfd. 200 Volt	.19
13	9386	Condenser	Tubular 0.1 Mfd. 200 Volt	.19
14	9386	Condenser	Tubular 0.1 Mfd. 200 Volt	.19
15	9032	Condenser	Tubular 0.2 Mfd. 200 Volt	.23
16	9032	Condenser	Tubular 0.2 Mfd. 200 Volt	.23
17	8961	Condenser	Tubular 0.05 Mfd. 400 Volt	.19
18	1368	Condenser	Tubular 0.005 Mfd. 400 Volt	.17
19	2777	Resistor	Wire Wound 18,000 Ohm	.63
20	2016	Resistor	Carbon 1 Meg Ohm 1/3 Watt Ins.	.19

Illus. No.	Part No.	Part Name	Description	List Price
21	1942	Resistor	Carbon 1/2 Meg Ohm 1/3 Watt Ins.	.19
22	1942	Resistor	Carbon 1/2 Meg Ohm 1/3 Watt Ins.	.19
23	1942	Resistor	Carbon 1/2 Meg Ohm 1/3 Watt Ins.	.19
24	2705	Resistor	Carbon 2 Meg Ohm 1/3 Watt Ins.	.19
25	6879	Resistor	Carbon 50,000 Ohm 1/3 Watt Ins.	.19
26	9385	Resistor	Carbon 15,000 Ohm 1/3 Watt Ins.	.19
27	9385	Resistor	Carbon 15,000 Ohm 1/3 Watt Ins.	.19
28	2999	Speaker	P. M. Dynamic (6")	5.50
29	2793	Switch	On-Off (3 pole 2 Pos.)	.69
30	2239	Volume Control		.80
MISCELLANEOUS				
	9987	Base	Tube Shield	.05
	3183	Dial Assembly	Complete Tuning, Mention Required Name	2.25
	3177	Dial Scale	Calibrated Scale, Mention Required Name	.48
	2799	Dial Indicator	Off & On Scale for Dial	.27
	2796	Glass	For Dial	.95
	3031	Knob	Small	.19
	3032	Knob	Large	.18
	3043	Pointer	For Tuning Dial	.15
	1411	Shield	Tube	.14

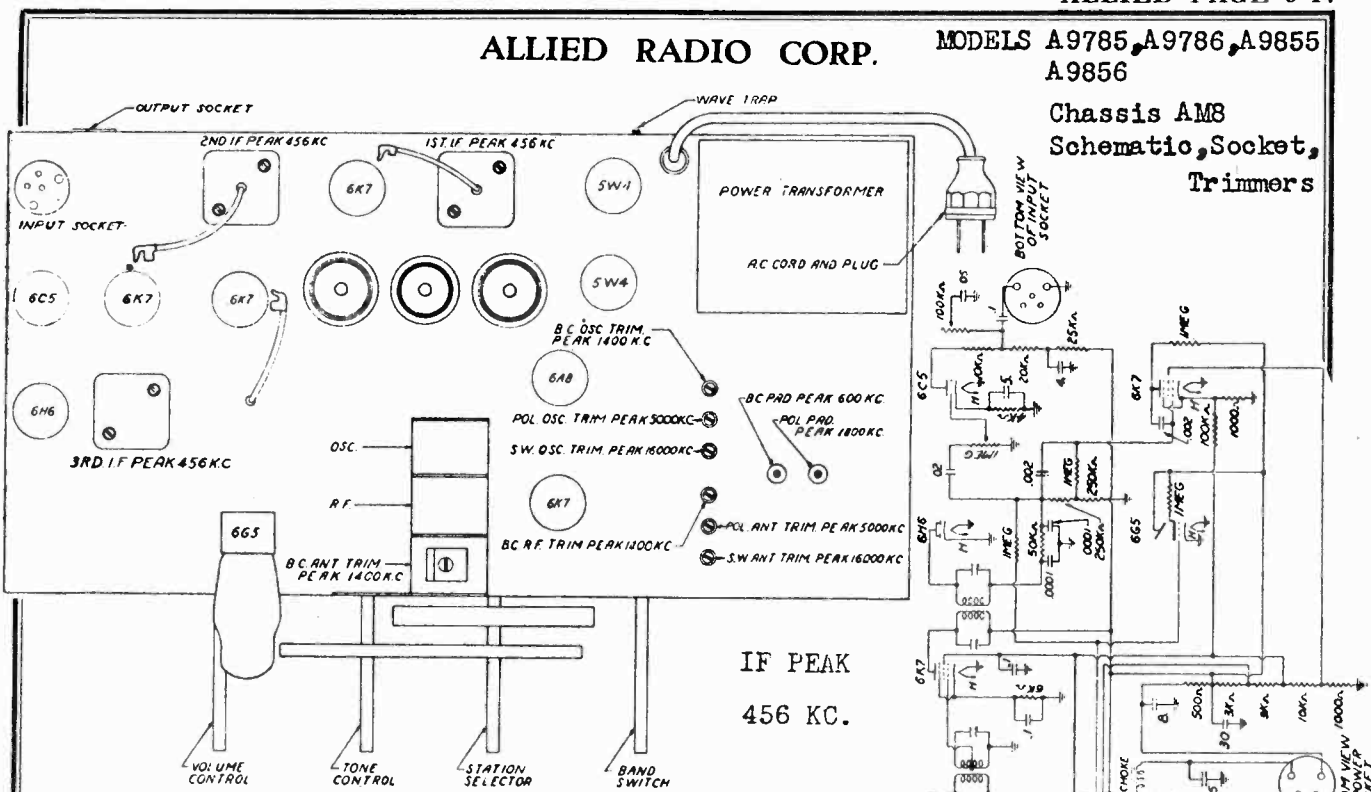
Prices are subject to change without notice.

Part No. 60B

ALLIED RADIO CORP.

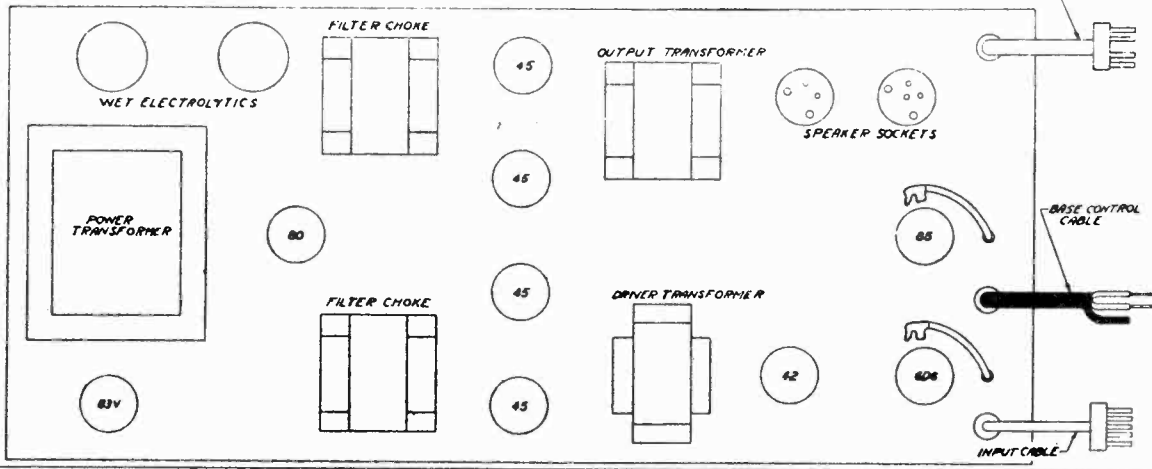
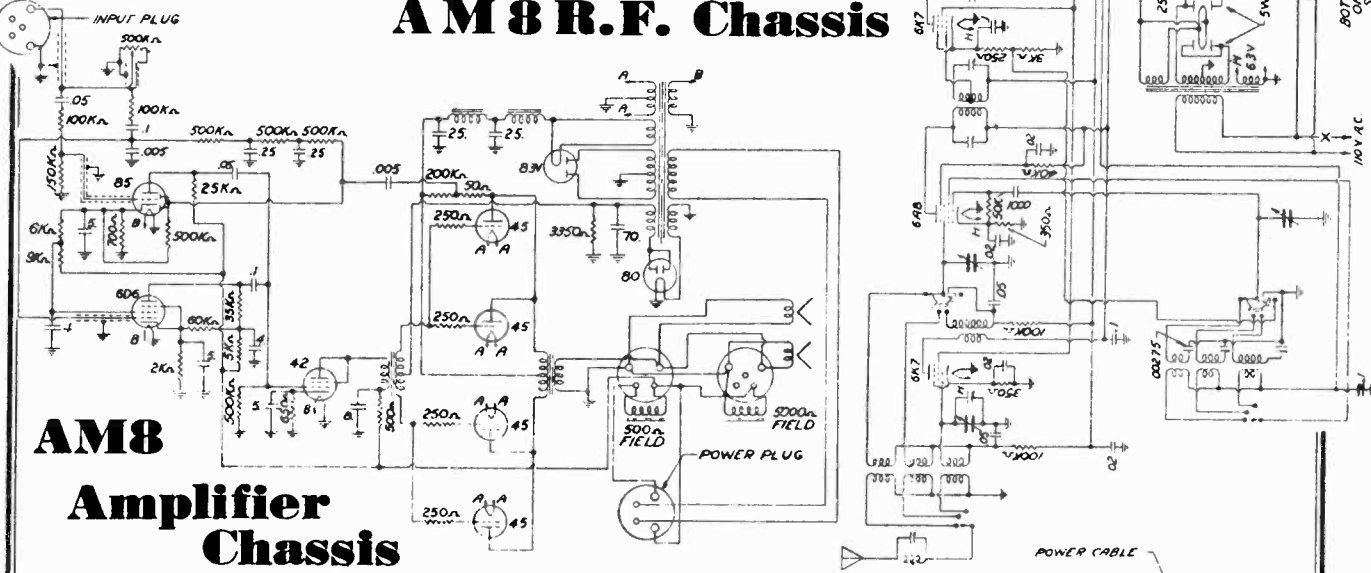
MODELS A9785, A9786, A9855, A9856

Chassis AM8
Schematic, Socket,
Trimmers



AM8 R.F. Chassis

AM8
Amplifier
Chassis



MODELS A9785, A9786, A9855
A9856

ALLIED RADIO CORP.

Chassis AM8
Alignment, Parts

GENERAL DATA

The alignment of this receiver requires the use of a test oscillator which will cover the frequencies of 456, 600, 1400, 1800, 4000, 6000, and 14,000 KC and an output meter which is to be connected across the primary or secondary of the output transformer. 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 Broadcast Band should always be the next procedure; after which, either or both of the Short Wave Bands will be aligned.

I.F. ALIGNMENT

Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6A8) through a .05 or .1 mid. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all five I.F. trimmers to peak or maximum reading on the output meter. As there are two stages of I.F. in this receiver, there will be consequently three I.F. transformers to align.

BROADCAST BAND ALIGNMENT

Adjust the oscillator to 1400 KC and connect the output to the antenna post marked "A" through a .001 mid. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 KC and adjust the broadcast oscillator trimmer to peak. (See drawing for location.) After this has been carefully done, the next step is to adjust the front trimmer of the gang condenser to peak. The front condenser section tunes the pre-amplifier stage. Then adjust the Broadcast Band R. F. trimmer to peak. This trimmer aligns the grid or input circuit of the 6A8 tube. (See drawing for position of Broadcast R. F. trimmer). Next, re-set the dial pointer on the receiver and the test oscillator to 600 KC. Slowly increase or decrease the B. C. oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated but is the easiest way to adjust the oscillator to the R.F. section. (For location of B.C. padding condenser see drawing.) Return to 1400 KC and again go over the adjustments of this frequency to

ensure that the alignment is correct. Then slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated but is the easiest way to adjust the oscillator to the R.F. section. (For location of B.C. padding condenser see drawing.) Return to 1400 KC and again go over the adjustments of this frequency to ensure that the alignment is correct.

POLICE BAND ALIGNMENT

In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with a .0001 mid. condenser on the output lead of the test oscillator. This resistor is used and should not be used for Broadcast Band alignment.

FOREIGN BAND ALIGNMENT

The Foreign Band of 19 to 49 meters can be aligned by adjusting the two KC trimmers marked and illustrated in the drawing as S.W. oscillator and S.W. trimmer. In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with the .0001 mid. condenser on the output lead of the test oscillator. Set the receiver pointer to 14,000 KC (also test oscillator).

WAVE TRAP ADJUSTMENT

At the rear of the chassis near the Air filter it out. It is to be used only if such interference is encountered when adjustment of this screw will be found. It is to be used only if such interference is encountered when adjustment of this screw will be found. It is to be used only if such interference is encountered when adjustment of this screw will be found.

M8 19 Tube Radio Set

Part No.	Description	Part No.	Description
P 124	Pilot Light	P 1181	Gang Condenser Resistor
P 1028	Output Audio Transformer	P 1182	Volume Control with Switch
P 1028	Large Knob	P 1183	.002-400 V. Condenser
P 1040	Small Knob	P 1184	.005-400 V. Condenser
P 1047	Broadcast Intermediate Coil	P 1185	.00775 Mica Condenser - 8%
P 1046	Broadcast Antenna Coil	P 480	.0001 Mica Condenser
P 1182	Wave Trap Coil	P 1114	2 Megohm 1/2 Watt Resistor
P 1172	Power Transformer	P 1124	1 Megohm Insulated 1/2 Watt Resistor
P 1174	AC Cord and Plug	P 1182	1.500 Ohm 1/2 Watt Resistor
P 1149	1st I.F. Transformer	P 417	50,000 Ohm 1/2 Watt Resistor
P 1151	2nd I.F. Transformer	P 278	1,000 Ohm 1/2 Watt Resistor
P 1152	Double Tuned I.F. Transformer	P 182	1 Meg. Ohm 1/2 Watt Resistor
P 1123	3 Gang Variable Condenser	P 136	250 Ohm 1/2 Watt Resistor
P 1146	Tilt Dial Complete	P 280	100,000 Ohm 1/2 Watt Resistor
P 807	Excitecath Plate	P 1186	800 Ohm 1/2 Watt Resistor
P 486	6E8 Tube Socket	P 757	4,000 Ohm 1/2 Watt Resistor
P 844	5W4 Tube Socket	P 1188	15,000 Ohm 1/2 Watt Resistor
P 489	6A8 Tube Socket	P 810	350 Ohm 1/2 Watt Resistor
P 1041	6G5 Tube Socket	P 187	10,000 Ohm 1/2 Watt Resistor
P 1032	Input Audio Transformer	P 419	20,000 Ohm 1/2 Watt Resistor
P 873	Speaker Plug	P 186	25,000 Ohm 1/2 Watt Resistor

Amplifier Unit Parts AM8

P 138	250 Ohm Resistor	P 1207	45 Tube Socket
P 137	500,000 Ohm Resistor	P 1211	Bass Tone Control
P 183	25,000 Ohm Resistor	P 1212	5 Prong Speaker Socket
P 187	10,000 Ohm Resistor	P 1213	5 Prong Speaker Plug
P 118	150,000 Ohm Resistor	P 1221	Base Control Cable
P 1215	35,000 Ohm Resistor	P 1222	Power Cable
P 1216	5,000 Ohm Resistor	P 1223	Input Cable
P 1218	80,000 Ohm Resistor	P 1040B	Knob
P 1219	2,000 Ohm Resistor	P 141	25,200 V. Condenser
P 1218	500 Ohm Resistor	P 1209	70 Mid. 100 V. Electrolytic Con.
P 1220	200,000 Ohm Resistor	P 304	5 Mid. 25 V. Electrolytic Con.
P 1209	Canadaban Resistor	P 850	4.8 Mid. 450 V. Electrolytic Con.
P 1210	Gang Condenser Resistor	P 1156	25 Mid. 450 V. Electrolytic Con.

LOWER CENTER KNOB

(Continuous Variable Bass Control). The bass control permits the regulation of the extreme low notes at the usual volume for reception in the average room, without affecting the high notes.

be certain that they were not put slightly out of alignment when adjustment was made at 600 KC. This completes the correct sequence of operations in properly aligning the receiver for the Broadcast Band.

The Foreign Band of 19 to 49 meters can be aligned by adjusting the two KC trimmers marked and illustrated in the drawing as S.W. oscillator and S.W. trimmer. In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with the .0001 mid. condenser on the output lead of the test oscillator. Set the receiver pointer to 14,000 KC (also test oscillator).

Then proceed to adjust these two trimmers for peak at 14,000 KC (adjust oscillator trimmer first) and as the inherent design of the circuit has been expressly developed for simplicity in servicing, only these two adjustments are necessary for aligning this band.

NOTE: Always start this procedure by having the oscillator coil trimmer loose (out all the way), and otherwise it is possible to make a false alignment on the image frequency. In order to prevent alignment on the image frequency, it is suggested that the following check be made: Readjust the pointer to 13,100 KC where the image frequency should be found. If properly aligned, the image frequency will be found to be weaker. If, however, the signal at 13,100 KC is found to be stronger than the signal at 14,000 KC, it signifies that alignment was incorrectly made on the image frequency.

In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with a .0001 mid. condenser on the output lead of the test oscillator. This resistor is used and should not be used for Broadcast Band alignment.

Set the receiver pointer to 4000 KC (also test oscillator) and adjust the Police Band oscillator circuit trimmer to peak.

After this has been carefully done, the next step is to adjust the Police Band antenna trimmer to peak. Now reset the dial pointer and the test oscillator to 1800 KC in preparation for adjusting the police band padding condenser.

Slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated but is the easiest way to adjust the oscillator to the R.F. section. (For location of B.C. padding condenser see drawing.) Return to 1400 KC and again go over the adjustments of this frequency to ensure that the alignment is correct.

Then slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated but is the easiest way to adjust the oscillator to the R.F. section. (For location of B.C. padding condenser see drawing.) Return to 1400 KC and again go over the adjustments of this frequency to ensure that the alignment is correct.

At the rear of the chassis near the Air filter it out. It is to be used only if such interference is encountered when adjustment of this screw will be found. It is to be used only if such interference is encountered when adjustment of this screw will be found.

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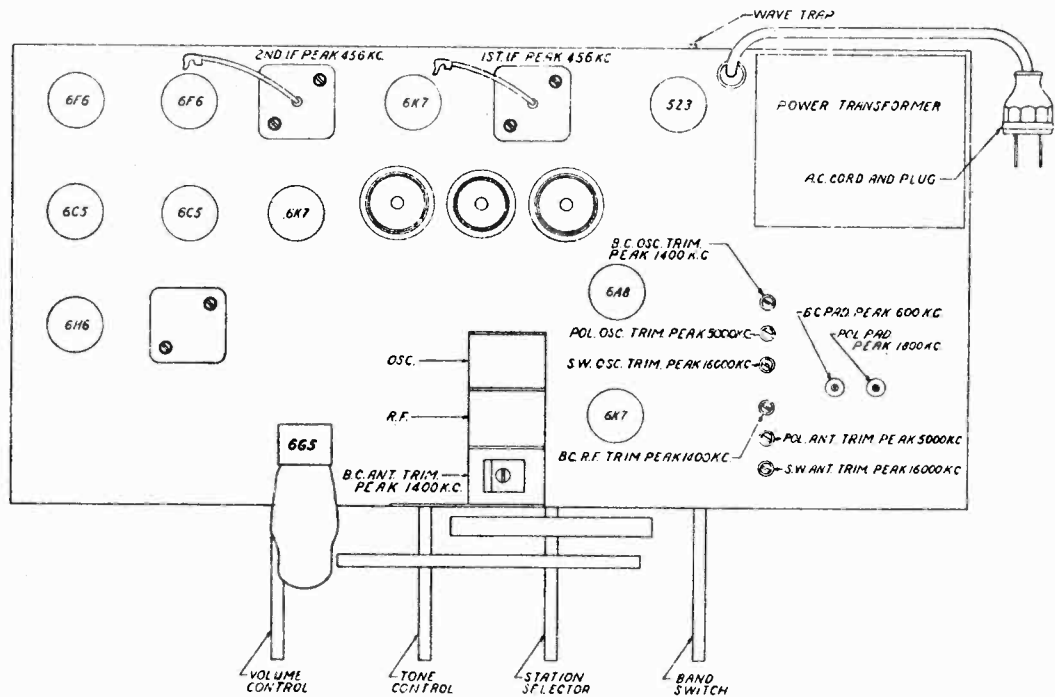
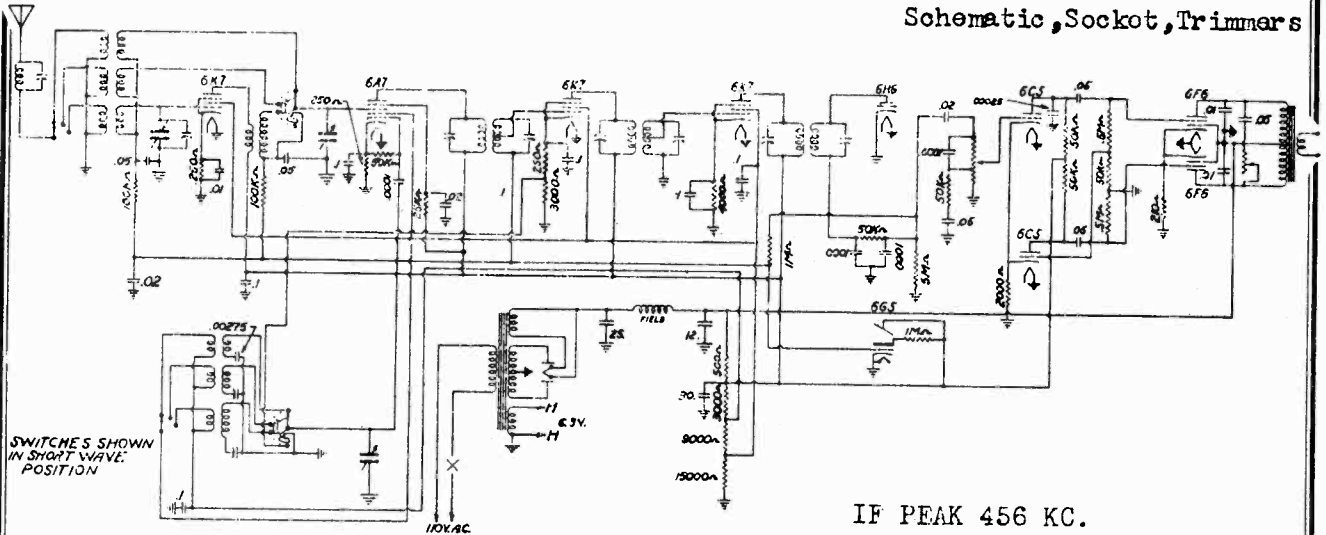
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ALLIED RADIO CORP.

MODELS A9788, A9789, A9852
A9854
Chassis AM7
Schematic, Socket, Trimmers



The dial is calibrated with each band covering 340 degrees of tuning scale length and are each concentric with the center of the dial face. The innermost scale is calibrated from 150 to 375 K.C. (2000 to 800 meters) and covers the range necessary for receiving governmental time and weather reports. The second band from the center is for standard broadcasts covering from 550 to 1700 K.C. (175 to 545 meters). The third band from the center covers the intermediate short wave length broadcasts of Police, Amateur, Aircraft and ships and extends from 1700 to 5400 K.C. (55 to 180 meters). The fourth band covers all of the principle short wave channels for reception from countries all over the world. This band carries a calibration of from 5.5 to 18 megacycles (16.4 to 55 meters.) This short wave scale is the one which includes the five internationally assigned bands—the 19, 25, 31, 39 and 49 meter channels.

MODELS A9788, A9789, A9852
A9854

ALLIED RADIO CORP.

Chassis AM7
Alignment, Parts

GENERAL DATA

The alignment of this receiver requires the use of a test oscillator which will cover the frequencies of 456, 600, 1400, 1800, 4000, 6000, and 14,000 KC and an output meter which is to be connected across the primary or secondary of the output transformer. 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 Broadcast Band should always be the next procedure; after which, either or both of the Short Wave Bands may be aligned.

I.F. ALIGNMENT

Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6A8) through a .05 or .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all five I.F. trimmers to peak or maximum reading on the output meter. As there are two stages of I.F. in this receiver, there will be consequently three I.F. transformers to align.

BROADCAST BAND ALIGNMENT

Adjust the oscillator to 1400 KC and connect the output to the antenna post marked "A" through a .001 mfd. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 KC and adjust the broadcast oscillator trimmer to peak. (See drawing for location.) After this has been carefully done, the next step is to adjust the front trimmer of the gang condenser to peak. The front condenser section tunes the pre-amplifier stage. Then adjust the Broadcast Band R. F. trimmer to peak. This trimmer aligns the grid or input circuit of the 6A8 tube. (See drawing for position of Broadcast R. F. trimmer). Next, re-set the dial pointer on the receiver and the test oscillator to 600 KC. Slowly increase or decrease the B. C. oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated but is the easiest way to adjust the oscillator to the R.F. section. (For location of B.C. padding condenser see drawing.) 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.

This completes the correct sequence of operations in properly aligning the receiver for the Broadcast Band.

FOREIGN BAND ALIGNMENT

The Foreign Band of 19 to 49 meters can be adjusted by the two trimmers marked and illustrated in the drawing as S.W. oscillator and S.W. trimmer. In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with the .0001 mfd. condenser on the output lead of the test oscillator. Set the receiver pointer to 14,000 KC (also test oscillator).

Then proceed to adjust these two trimmers for peak at 14,000 KC (adjust oscillator trimmer first) and as the inherent design of the circuit has been expressly developed for simplicity in servicing, only these two

adjustments are necessary for aligning this band. NOTE: Always start this procedure by having the oscillator coil trimmer loose (out all the way), and the antenna coil trimmer fairly tight (in all the way); otherwise it is possible to make a false alignment on the image frequency. In order to prevent alignment on the image frequency, it is suggested that the following check be made: Readjust the pointer to 13,100 KC where the image frequency should be found. If properly aligned, the image frequency will be found to be weaker. If, however, the signal at 13,100 KC is found to be stronger than the signal at 14,000 KC, it signifies that alignment was incorrectly made on the image frequency.

POLICE BAND

In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with a .0001 mfd. condenser on the output lead of the test oscillator. This resistor is used with the test oscillator only on the Short Wave Bands and should not be used for Broadcast Band alignment.

Set the receiver pointer to 4000 KC (also test oscillator) and adjust the Police Band oscillator circuit trimmer to peak.

After this has been carefully done, the next step is to adjust the Police Band antenna trimmer to peak.

Now reset the dial pointer and the test oscillator to 1800 KC in preparation for adjusting the police band padding condenser.

Slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated, but is the easiest way to correctly adjust the oscillator to the R.F. or antenna section. Return to 4000 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 1800 KC.

If it is found that in returning to 4000 KC the pointer is accurately on scale, no further adjustment should be necessary (in this recheck). If the pointer is found off scale, it may be corrected and put on scale by readjustment of the police band oscillator trimmer. Alignment of the pointer can only be corrected by adjustment of the oscillator trimmer.

IMPORTANT: The Police Band Oscillator Trimmer, Police Band Antenna Trimmer, Police Band Padding Trimmer are the only three adjustments required in aligning this band.

WAVE TRAP ADJUSTMENT

At the rear of the chassis near the Antenna and Ground posts is an adjustment screw connected to a trap circuit for elimination of code interference when operating on the broadcast band. If code interference is encountered adjustment of this screw will filter it out. It is to be used only if such interference is experienced in broadcast reception. Its use prevents code transmitters operating on a frequency around 456 K. C. from being received by the I. F. amplifier which is tuned to 456 K. C.

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

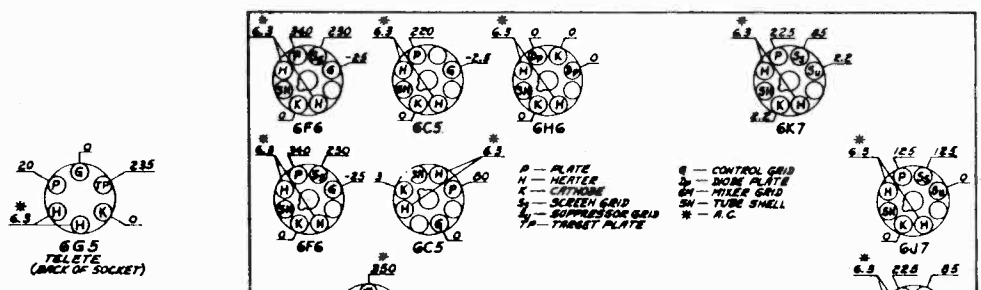
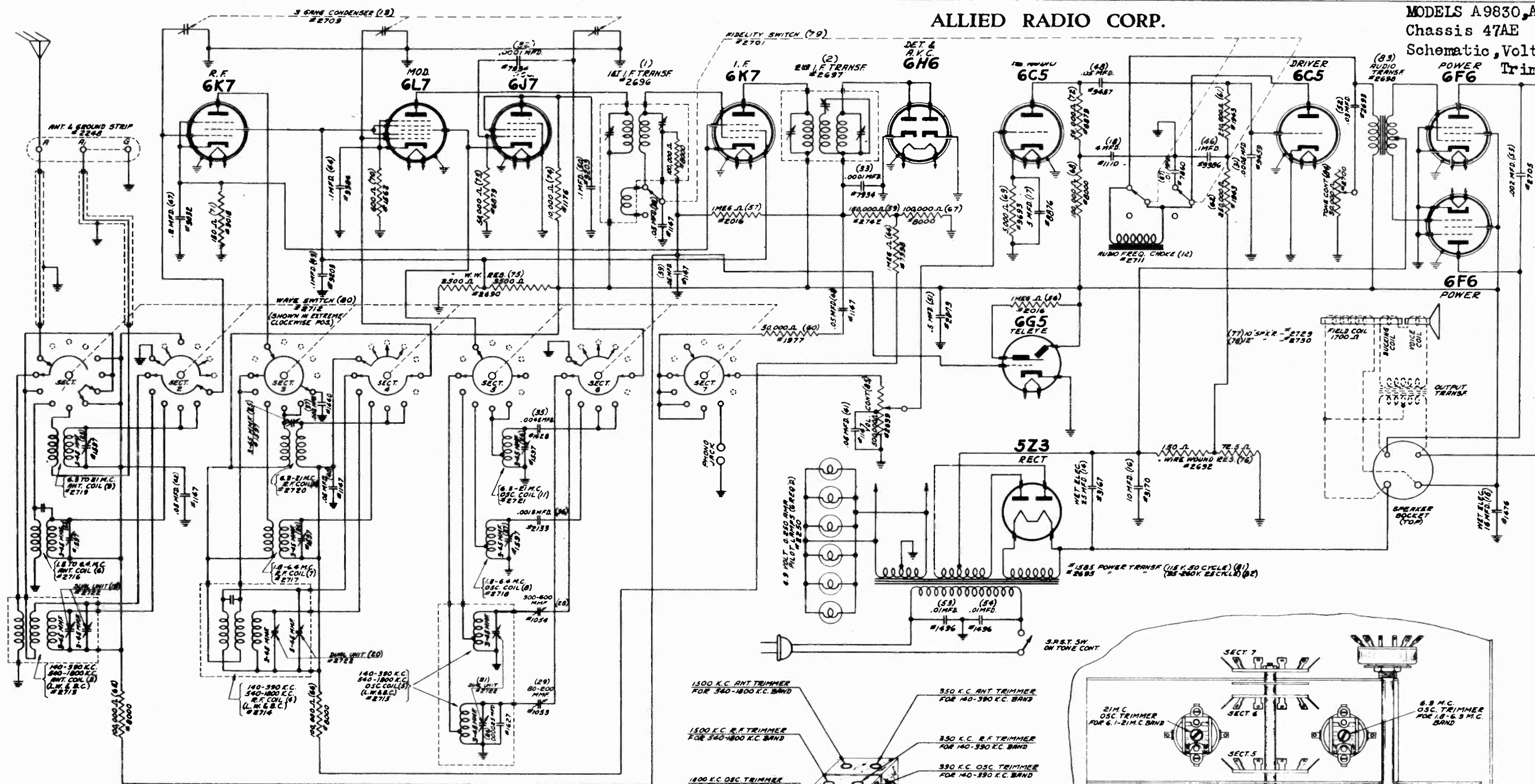
AM 7, 11 Tube Radio

Part No.	DESCRIPTION
P 124	Pilot Light
P1165	Output Audio Transformer
P1038	Knob Large
P1040	Knob Small
P1047	Broadcast Interstage Coil
P1046	Broadcast Antenna Coil
P1162	Wave Trap Coil
P1150	Power Transformer
P 176	AC Cord and Plug
P1149	1st I.F. Transformer
P1151	2nd I.F. Transformer
P1152	Double Tuned I.F. Transformer
P1159	3 Gang Variable Condenser
P1146	Tilt Dial Complete
P 907	Escutcheon Plate and Glass
P 490	6H6 Tube Socket
P 493	6F6 Tube Socket
P 522	6C5 Tube Socket
P 489	6K7 Tube Socket
P 488	6A8 Tube Socket
P1153	5Z3 Tube Socket
P1041	6G5 Tube Socket
p 945	Speaker Socket
P 873	Speaker Plug
P1157	Gang Candohm Resistor
P1158	Volume Control and Switch
P1159	Tone Control
P1135	Wave Switch
P1160	6 Gang Trimmer Condenser
P 517	500 Mmfd. Padding Condenser
P1139	1500 Mmfd. Padding Condenser
P1145	Straight Dial Complete
P1166	Volume Control and Switch (S. Dial)
P1167	Tone Control (S. Dial)
P1143	Wave Switch (S. Dial)
P906	Escutcheon Plate (S. Dial)
P1154	30 Mid. 300 V. Electrolytic Con.
P1155	12 Mid. 300 V. Electrolytic Con.
P1156	25 Mid. 450 V. Electrolytic Con.
P 142	10-200 V. Condenser
P 275	10-400 V. Condenser
P 334	.05-400 V. Condenser
P 143	.02-400 V. Condenser
P 671	.01-200 V. Condenser
P 335	.01-600 V. Condenser
P1055	.00275 Mica 5% Condenser
P 480	.0001 Mica Condenser
P 137	500,000 1/4 Watt Resistor
P 147	50,000 1/4 Watt Resistor
P 278	1,000 1/4 Watt Resistor
P 162	1 Meg. 1/4 Watt Resistor
P 756	2,000 1/4 Watt Resistor
P1169	15,000 1 Watt Resistor
P 136	250 1/4 Watt Resistor
P 280	100,000 1/4 Watt Resistor
P1186	600 1/4 Watt Resistor
G1187	Short Wave Antenna Coil Comp.
G1188	Short Wave Oscillator Coil Comp.
G1189	Middle Band Antenna Coil Comp.
G1190	Middle Band Oscillator Coil Comp.
G1195	12" Speaker Complete (Less Output)

If it is suspected that the oscillator has slipped but is doubtful due to the presence of the usual amount of noise level, it is suggested that the oscillator plate voltage be checked. To ascertain whether the tube is oscillating, ground the oscillator grid of the 6A8 (short stator and rotor plates of oscillator section on gang condenser). If oscillating properly, grounding the grid will cause an appreciable drop in oscillator voltage. Grounding or shorting the stator and grid components should be accomplished by grounding the stator mounting nut to the frame of the condenser with a screw-driver or any metallic conductor.

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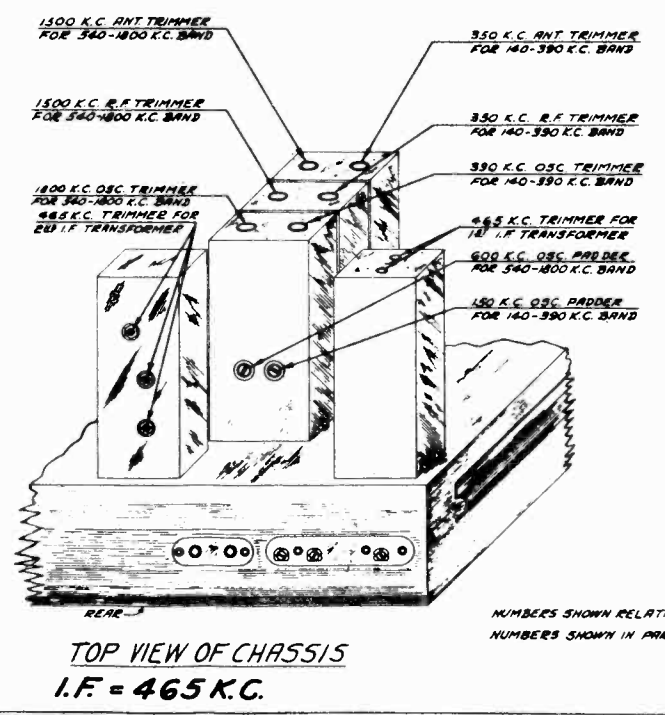
MODELS A9830, A9831
Chassis 47AE
Schematic, Voltage,
Trimmers



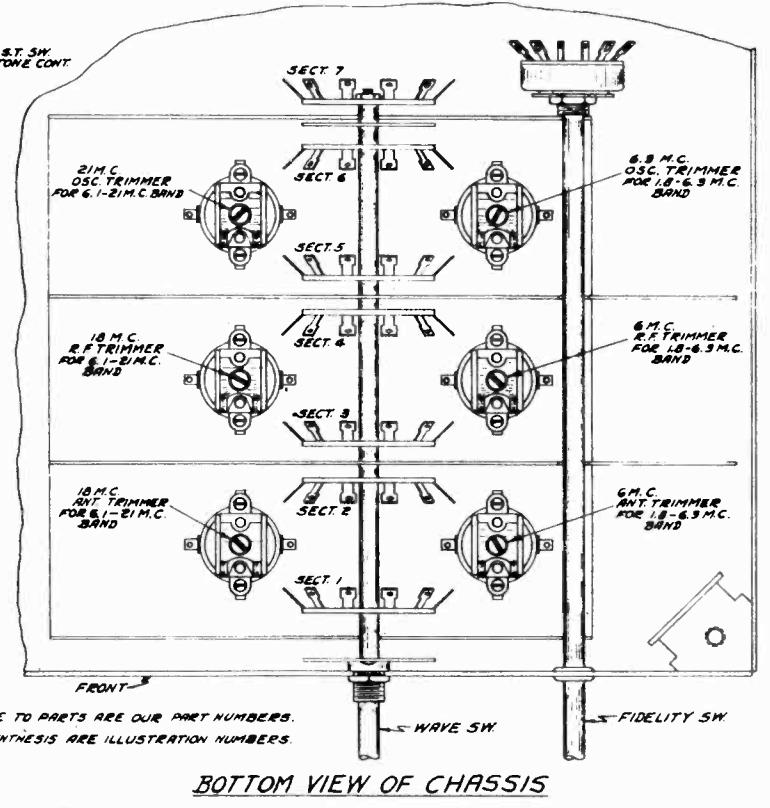
BOTTOM VIEW OF CHASSIS

VOLTAGE TABLE

- LINE VOLTAGE - 110 VOLTS A.C.
- MEASURE ALL HEATERS DIRECTLY ACROSS HEATER PRONGS WITH A 10VOLT A.C. VOLTMETER.
- MEASURE PLATES OF 5Z3 FROM PRONGS TO GROUND WITH A .500 VOLT A.C. VOLTMETER.
- MEASURE ALL OTHER VOLTAGES FROM PRONGS TO GROUND WITH A 1000 OHM PER VOLT B.C. VOLTMETER.



TOP VIEW OF CHASSIS
I.F. = 465 K.C.



BOTTOM VIEW OF CHASSIS

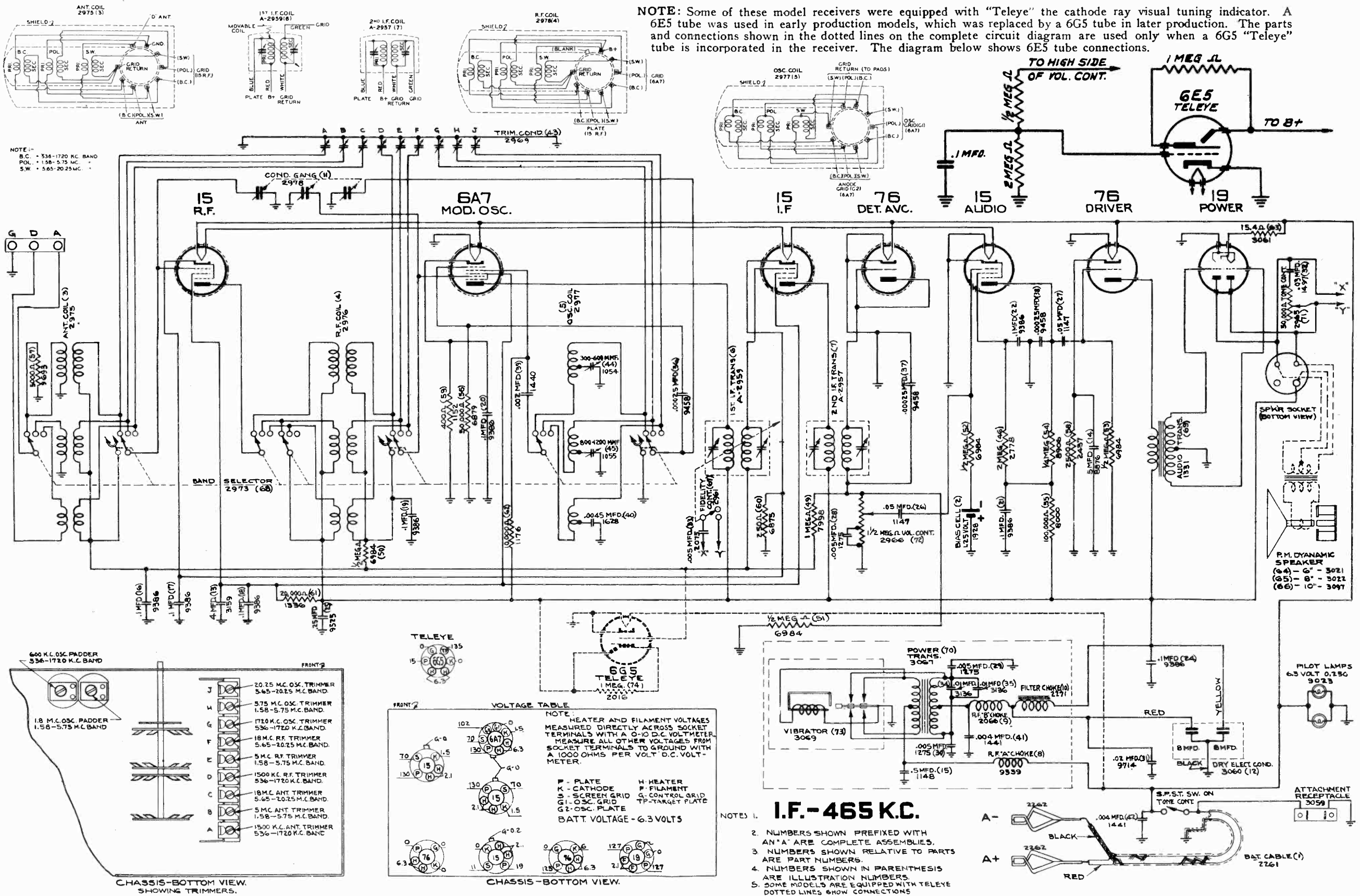
NUMBERS SHOWN RELATIVE TO PARTS ARE OUR PART NUMBERS.
NUMBERS SHOWN IN PARENTHESES ARE ILLUSTRATION NUMBERS.

Schematic, Trimmers, Voltage Coils

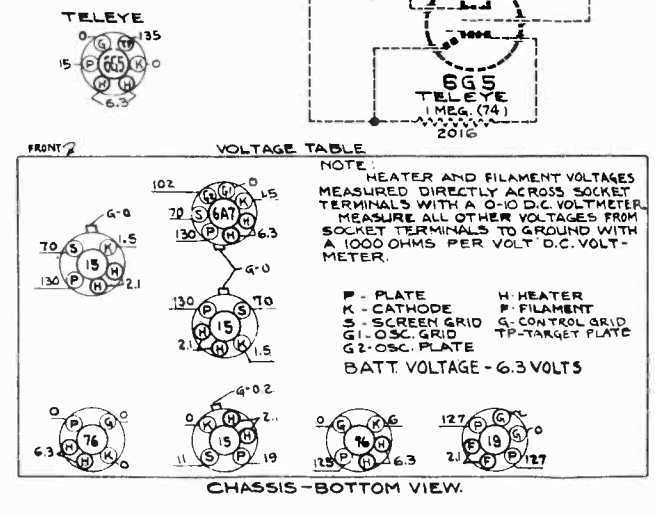
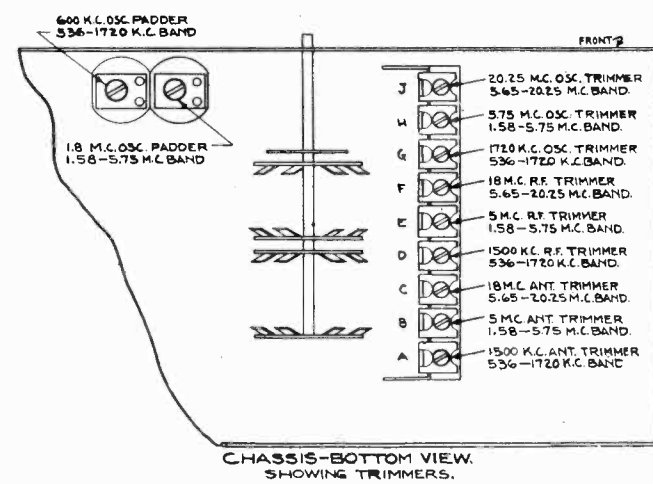
ALLIED RADIO CORP

MODELS A9833 to A9838 incl.
Chassis 66B, 66BE

NOTE: Some of these model receivers were equipped with "Teleye" the cathode ray visual tuning indicator. A 6E5 tube was used in early production models, which was replaced by a 6G5 tube in later production. The parts and connections shown in the dotted lines on the complete circuit diagram are used only when a 6G5 "Teleye" tube is incorporated in the receiver. The diagram below shows 6E5 tube connections.



NOTE: B.C. - 536-1720 KC BAND
POL. - 1.58-5.75 MC. BAND
S.W. - 5.65-20.25 MC.



I.F. - 465 K.C.

NOTES:

- NUMBERS SHOWN PREFIXED WITH AN "A" ARE COMPLETE ASSEMBLIES.
- NUMBERS SHOWN RELATIVE TO PARTS ARE PART NUMBERS.
- NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS.
- SOME MODELS ARE EQUIPPED WITH TELEYE. DOTTED LINES SHOW CONNECTIONS.

P.M. DYNAMIC SPEAKER
(64) - 6" - 3021
(65) - 8" - 3022
(66) - 10" - 3097

PILOT LAMPS
6.3 VOLT 0.150
9023

ATTACHMENT RECEPTACLE
3059

Chassis 47AE
Alignment, Parts

ALLIED RADIO CORP.

MODELS A9830, A9831

**Service Notes
For The
Four Band
AC Operated Superheterodyne Receiver**

Prices are subject to change without notice.

Illus. No.	Part No.	Part Name	Description	List Price
1	2696	Coil	1st I. F. Transformer	\$1.85
2	2697	Coil	2nd I. F. Transformer	2.25
3	2713	Coil	Antenna 140-390 & 540-1800 K.C. Band	1.80
4	2714	Coil	R.F. 140-390 & 540-1800 K.C. Band	2.00
5	2715	Coil	Osc. 140-390 & 540-1800 K.C. Band	3.25
6	2716	Coil	Antenna 1.8-6.3 M.C. Band	.77
7	2717	Coil	R.F. 1.8-6.3 M.C. Band	.70
8	2718	Coil	Oscillator 1.8-6.3 M.C. Band	.70
9	2719	Coil	Antenna 6.1-21 M.C. Band	.70
10	2720	Coil	R.F. 6.1-21 M.C. Band	.70
11	2721	Coil	Oscillator 6.1-21 M.C. Band	.80
12	2711	Choke	Audio Frequency	.90
13	2709	Condenser	Three Gang Tuning	4.00
14	3167	Condenser	25 Mfd. Wet Electrolytic	1.25
15	1476	Condenser	16 Mfd. Wet Electrolytic	1.40
16	3170	Condenser	10 Mfd. Dry Electrolytic	.70
17	8876	Condenser	5 Mfd. Dry Electrolytic	.85
18	1110	Condenser	4 Mfd. Dry Electrolytic	.14
19	2722	Condenser	3-45 M.M.F. (Dual Unit) Trimmer	.27
20	2722	Condenser	3-45 M.M.F. (Dual Unit) Trimmer	.27
21	2722	Condenser	3-45 M.M.F. (Dual Unit) Trimmer	.27
22	1597	Condenser	3-45 M.M.F. Trimmer	.21
23	1597	Condenser	3-45 M.M.F. Trimmer	.21
24	1597	Condenser	3-45 M.M.F. Trimmer	.21
25	1597	Condenser	3-45 M.M.F. Trimmer	.21
26	1597	Condenser	3-45 M.M.F. Trimmer	.21
27	1597	Condenser	3-45 M.M.F. Trimmer	.21
28	1053	Condenser	3-45 M.M.F. Trimmer	.21
29	1053	Condenser	3-45 M.M.F. Trimmer	.21
30	9459	Condenser	300-600 M.M.F. Padding (Red Dot)	.55
31	9459	Condenser	80-200 M.M.F. Padding (Yellow Dot)	.50
32	7934	Condenser	.0005 Mfd. Mica	.31
33	7934	Condenser	.0001 Mfd. Mica	.21
34	1440	Condenser	.001 Mfd. Mica	.21
35	1628	Condenser	.0045 Mfd. Mica (Yellow Dot)	.21
36	2133	Condenser	.0013 Mfd. Mica (Yellow Dot)	.21
37	1440	Condenser	.002 Mfd. Mica	.21
38	1147	Condenser	.05 Mfd. 200 Volt Tubular	.19
39	1147	Condenser	.05 Mfd. 200 Volt Tubular	.19
40	1147	Condenser	.05 Mfd. 200 Volt Tubular	.19
41	1454	Condenser	.05 Mfd. 200 Volt Tubular	.19
42	1147	Condenser	.05 Mfd. 200 Volt Tubular	.19
43	9386	Condenser	.05 Mfd. 200 Volt Tubular	.19
44	9386	Condenser	.05 Mfd. 200 Volt Tubular	.19
45	9032	Condenser	.1 Mfd. 200 Volt Tubular	.19
46	9437	Condenser	.2 Mfd. 200 Volt Tubular	.19
47	9203	Condenser	.1 Mfd. 400 Volt Tubular	.18
48	9203	Condenser	.1 Mfd. 400 Volt Tubular	.18
49	2073	Condenser	.5 Mfd. 400 Volt Tubular	.16
50	2693	Condenser	.01 Mfd. 400 Volt Tubular	.19
51	1496	Condenser	.01 Mfd. 600 Volt Tubular	.18
52	1496	Condenser	.01 Mfd. 600 Volt Tubular	.18
53	2705	Condenser	.002 Mfd. 1000 Volt Tubular	.19
54	2016	Resistor	Carbon 1 Meg. Ohm 1/3 Watt Ins.	.19
55	2016	Resistor	Carbon 1 Meg. Ohm 1/3 Watt Ins.	.19

Illus. No.	Part No.	Part Name	Description	List Price
59	2742	Resistor	Carbon 150,000 Ohm 1/3 Watt Ins.	.19
60	1977	Resistor	Carbon 50,000 Ohm 1/3 Watt Ins.	.19
61	1943	Resistor	Carbon 250,000 Ohm 1/3 Watt Ins.	.19
62	1943	Resistor	Carbon 250,000 Ohm 1/3 Watt Ins.	.19
64	7998	Resistor	Carbon 1 Meg. Ohm 1/3 Watt Ins.	.19
65	8000	Resistor	Carbon 100,000 Ohm 1/3 Watt Ins.	.19
66	8000	Resistor	Carbon 100,000 Ohm 1/3 Watt Ins.	.19
67	8000	Resistor	Carbon 100,000 Ohm 1/3 Watt Ins.	.19
68	8000	Resistor	Carbon 100,000 Ohm 1/3 Watt Ins.	.19
69	9693	Resistor	Carbon 5,000 Ohm 1/3 Watt Ins.	.19
70	1562	Resistor	Carbon 600 Ohm 1/3 Watt Ins.	.19
71	9018	Resistor	Carbon 150 Ohm 1/3 Watt Ins.	.19
72	6879	Resistor	Carbon 50,000 Ohm 1/3 Watt Ins.	.19
73	6879	Resistor	Carbon 50,000 Ohm 1/3 Watt Ins.	.19
74	1176	Resistor	Carbon 10,000 Ohm 1/3 Watt Ins.	.19
75	2690	Resistor	Wire Wound 2500 & 3500 Ohm	.19
76	2692	Resistor	Wire Wound 72.5 & 150 Ohm	.85
77	2719	Speaker	Dynamic (10")	10.00
78	2730	Speaker	Dynamic (12")	11.00
79	2701	Switch	Fidelity Band Selector	.76
80	2712	Switch	Power (115 Volt 50 Cycle)	6.50
81	1585	Transformer	Audio (95-260 Volt 25 Cycle)	12.00
82	2693	Transformer	Volume Control (With S.P.S.T. Sw.)	1.00
83	2698	Transformer	Volume Control	.80
84	2700	Transformer	Volume Control	.21
85	2699	Transformer	Volume Control	.80
86	1627	Condenser	.00025 Mfd. Mica	.19
87	7860	Condenser	.01 Mfd. 400 Volts	.17

Illus. No.	Part No.	Part Name	Description	List Price
2250	Bulb	6.3 Volt .250 Amp.	Miscellaneous	.19
2500	Cable	For 6E5 Tube Socket		.50
2498	Tube	For 6E5 Tube Socket		.38
2418	Dial Assembly	Complete with Bulbs		10.00
2419	Dial Scale	Calibrated Glass Scale 1st type Green Band		2.25
3225	Dial Scale	Calibrated Glass Scale 2nd type Yellow Band		.75
2748	Dial Indicator	"Broad & Sharp" Scale with arm		.55
2759	Dial Indicator	"Band" Scale with arm, use with No. 2419		.75
3323	Dial Indicator	"Band" Scale with arm, use with No. 3325		.75
2725	Dial Glass	With Beutcheon Marked "Tuning"		2.00
3149	Knob	Marked "Volume"		.30
2442	Knob	Marked "Volume"		.30
2732	Knob	Marked "Selectivity"		.30
2443	Knob	Marked "Band Selector"		.30
2519	Knob	"Tone-On-Off"		.30
2762	Pointer	Long Band Spread		.10
2763	Pointer	Short Band Spread		.10
2765	Pointer	For Pointer		Net
2765	Pointer	For Pointer		Net
2520	Socket	Radio for 6E5 Tube Socket		.09
2248	Strip	For 6E5 Tube Socket		.09
2248	Strip	Antenna and Ground Post Assembly		.22

NOTE: IT IS ABSOLUTELY NECESSARY THAT AN ACCURATELY CALIBRATED TEST OSCILLATOR WITH SOME TYPE OF OUTPUT MEASURING DEVICE BE USED WHEN ALIGNING THE RECEIVER AND THAT THE PROCEDURE BE CAREFULLY FOLLOWED, OTHERWISE THE RECEIVER WILL BE INSENSITIVE AND THE DIAL CALIBRATION WILL BE INCORRECT. TRIMMER AND PADDING CONDENSERS WILL BE REFERRED TO BY THEIR FUNCTION AS INDICATED ON THE CIRCUIT DIAGRAM.

ALIGNING I. F. STAGE AT 465 KILOCYCLES:
(a) Attach the ground lead of the test oscillator to the chassis. Connect the other lead to the grid cap of the 6L7 tube through a .02 Mfd. series condenser. DO NOT REMOVE GRID CLIP.
(b) Set test oscillator to EXACTLY 465 kilocycles and turn receiver volume control on full.
(c) Peak each of the second I. F. transformer trimmers.
(d) Peak each of the first I. F. transformer trimmers.

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

ALIGNING 1800-540 KILOCYCLE BAND:
(a) Adjust band selector switch for operation on the 1800-540 kilocycle band, remove test oscillator lead from grid of 6L7 tube and connect to receiver antenna terminal through a .00025 Mfd. series condenser.
(b) Set test oscillator frequency and receiver dial to EXACTLY 1800 kilocycles, and bring in 1800 kilocycle test oscillator signal to maximum output by adjusting 1800 kilocycle oscillator trimmer.
(c) Tune receiver dial and set test oscillator frequency to EXACTLY 1500 kilocycles. Adjust 1500 K. C. R. F. and ant. trimmers for maximum sensitivity.
(d) 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 padder for maximum signal response.

ALIGNING 1.8-6.3 MEGACYCLE BAND:
(a) Replace .00025 Mfd. antenna series condenser with 400 ohm resistor; adjust band selector switch to 1.8-6.3 megacycles band, tune receiver dial and set test oscillator frequency to EXACTLY 6.3 megacycles. Bring in 6.3 megacycle test oscillator signal to maximum output by adjusting 6.3 M.C. oscillator trimmer.
(b) Tune receiver dial and set test oscillator frequency to EXACTLY 6 megacycles. Then adjust 6 M.C. ant and R.F. trimmers for maximum sensitivity.

ALIGNING 6.1-21 MEGACYCLE BAND:
(a) Place band selector switch for operation on 6.1-21 megacycle band, tune receiver dial and set test oscillator frequency to EXACTLY 21 megacycles.
(b) Adjust 21 M. C. oscillator trimmer to bring in 21 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 21 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 21 megacycles always check to see if the proper peak has been used. To do this leave test oscillator frequency at 21 megacycles, increase the output of the test oscillator and tune receiver dial to approximately 20 megacycles. Then vary the receiver dial slightly to the right and left of 20 megacycles, and if the fundamental peak was used in aligning at 21 megacycles the test oscillator signal will be heard at approximately 20 megacycles on the receiver dial.
(c) Tune receiver dial and set test oscillator frequency to EXACTLY 18 megacycles.
(d) Adjust 18 M. C. antenna and R. F. trimmers for maximum 18 megacycle test signal response.

ALIGNING 390-140 KILOCYCLE BAND:
(a) Adjust band selector switch for operation on 390 to 140 kilocycle band, tune receiver dial and set test oscillator frequency to EXACTLY 390 kilocycles.
(b) Bring in 390 Kilocycle test signal to maximum output by adjusting 390 K. C. oscillator trimmer.
(c) Tune receiver dial and set test oscillator frequency to EXACTLY 350 kilocycles. Adjust 350 K. C. ant. and R. F. trimmers for maximum sensitivity.
(d) Tune receiver dial and set test oscillator frequency to approximately 150 kilocycles, then while rocking gang condenser slightly to right and left adjust 150 kilocycle oscillator padder for maximum sensitivity.

MODELS A9752, A9753, A9754
A9755, Chassis 46A
MODELS A9768, A9769, A9770
Chassis 68B, 68BE

ALLIED RADIO CORP.

Alignments

Model 68B-68BE— Three Band Superheterodyne Receiver

Six Volt Storage Battery Operated

ALIGNMENT PROCEDURE:

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

NOTE: IT IS ABSOLUTELY NECESSARY THAT AN ACCURATELY CALIBRATED TEST OSCILLATOR WITH SOME TYPE OF OUTPUT MEASURING DEVICE BE USED WHEN ALIGNING THE RECEIVER AND THAT THE PROCEDURE BE CAREFULLY FOLLOWED. OTHERWISE THE RECEIVER WILL BE INSENSITIVE AND THE DIAL CALIBRATION WILL BE INCORRECT. THE TRIMMER AND PADDING CONDENSERS WILL BE REFERRED TO BY THEIR FUNCTION AS INDICATED ON THE CIRCUIT DIAGRAM.

ALIGNING I.F. STAGE AT 465 KILOCYCLES:

- (a) Attach the ground lead of the test oscillator to the chassis. Connect the other lead to the grid cap of the 6A7 tube through a .02 Mfd. series condenser. DO NOT REMOVE GRID CLIP.
- (b) Set test oscillator to EXACTLY 465 kilocycles and turn receiver volume control on full.
- (c) Peak each of the second I.F. transformer trimmers.
- (d) Peak each of the first I.F. transformer trimmers.

ALIGNING 1720-535 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 6A7 tube and connect to receiver antenna lead through a .00025 Mfd. series condenser.
- (c) Adjust band selector switch for operation on the 1720-535 kilocycle band.
- (d) Set test oscillator frequency and receiver dial to EXACTLY 1720 kilocycles, and BRING IN 1720 KILOCYCLE TEST OSCILLATOR SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING 1720 KILOCYCLE OSCILLATOR TRIMMER.
- (e) Tune receiver dial and set test oscillator frequency to EXACTLY 1400 kilocycles. Adjust 1400 K.C. prescaler 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 padder for maximum signal response.

ALIGNING 1.8-5.8 MEGACYCLE BAND:

- (a) Replace .00025 Mfd. test oscillator antenna lead series condenser with a 400 ohm resistor.
- (b) Adjust band selector switch to 1.8-5.8 megacycles, tune receiver dial and set test oscillator frequency to EXACTLY 5.8 megacycles. Bring in 5.8 megacycle test signal to maximum output by adjusting 5.8 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 5.8-18.3 MEGACYCLE BAND:

- (a) Leave 400 ohm resistor in series with test oscillator lead and place band selector switch for operation on 5.8-18.3 megacycle band, tune receiver dial and set test oscillator frequency to EXACTLY 18 megacycles.
- (b) Adjust 18 M.C. oscillator trimmer to bring in 18 megacycle test signal to maximum output. CARE MUST BE TAKEN THAT THE FUNDAMENTAL PEAK AND NOT THE IMAGE PEAK IS USED FOR ALIGNING THE RECEIVER AT 18 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 megacycles, always check to see if the proper peak has been used. To do this leave test oscillator frequency at 18 megacycles, increase the output of the test oscillator and tune receiver dial, vary the receiver dial slightly to the right and left of 17 megacycles, and if the fundamental peak was used in aligning at 18 megacycles the test oscillator signal will be heard at approximately 17 megacycles on the receiver dial.
- (c) Tune receiver dial and set test oscillator frequency to EXACTLY 15 megacycles.
- (d) 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.

8. Leave band selector switch for operation on 540 to 1720 kilocycle band, tune receiver dial and set test oscillator frequency to approximately 600 kilocycles. While rocking gang condenser slightly to right and left adjust 600 kilocycle oscillator padder for maximum sensitivity.

CHASSIS MODEL No. 46A
A. C. Superheterodyne Receiver

ALIGNMENT PROCEDURE:

Realignment of this receiver should never be necessary unless one of the oscillator, antenna, or I. F. coils has been replaced. Lack of sensitivity, selectivity, and poor tone quality may be due to any one or a combination of causes, such as weak or defective tubes or speaker, inadequate or excessively long antenna, open or grounded bias resistor, bypass condenser, etc. Under no circumstances should realignment be attempted until all other possible sources have been first thoroughly investigated and have been definitely proven not to be the cause.

If an I. F. tube is replaced it is advisable to realign the I. F. Amplifier particularly if the replacement tube is one of a different manufacture than the one in the receiver. It is important when aligning to carefully follow the procedure in the order given, otherwise the receiver will lack sensitivity and the dial calibration will be incorrect.

IT IS IMPERATIVE THAT AN ACCURATELY CALIBRATED OSCILLATOR BE USED WITH SOME TYPE OF OUTPUT MEASURING DEVICE.

INTERMEDIATE ALIGNMENT:

1. Connect the high side of the test oscillator output to the control grid of the 6D6 modulator tube through a .02 Mfd. condenser. Leave the grid cap connected to the grid terminal of the tube, and connect the ground side of the test oscillator to the receiver ground.
2. Set the test oscillator frequency to 465 kilocycles (this must be accurate).
3. Align the second intermediate transformer by turning one of the trimmer screws accessible through holes in the top of the transformer shields up and down (increasing and decreasing capacity) until maximum reading is obtained on the output meter, after which adjust the other trimmer screw of the same transformer for maximum sensitivity.
4. Adjust the first intermediate transformer in the same manner as the second I. F. transformer.

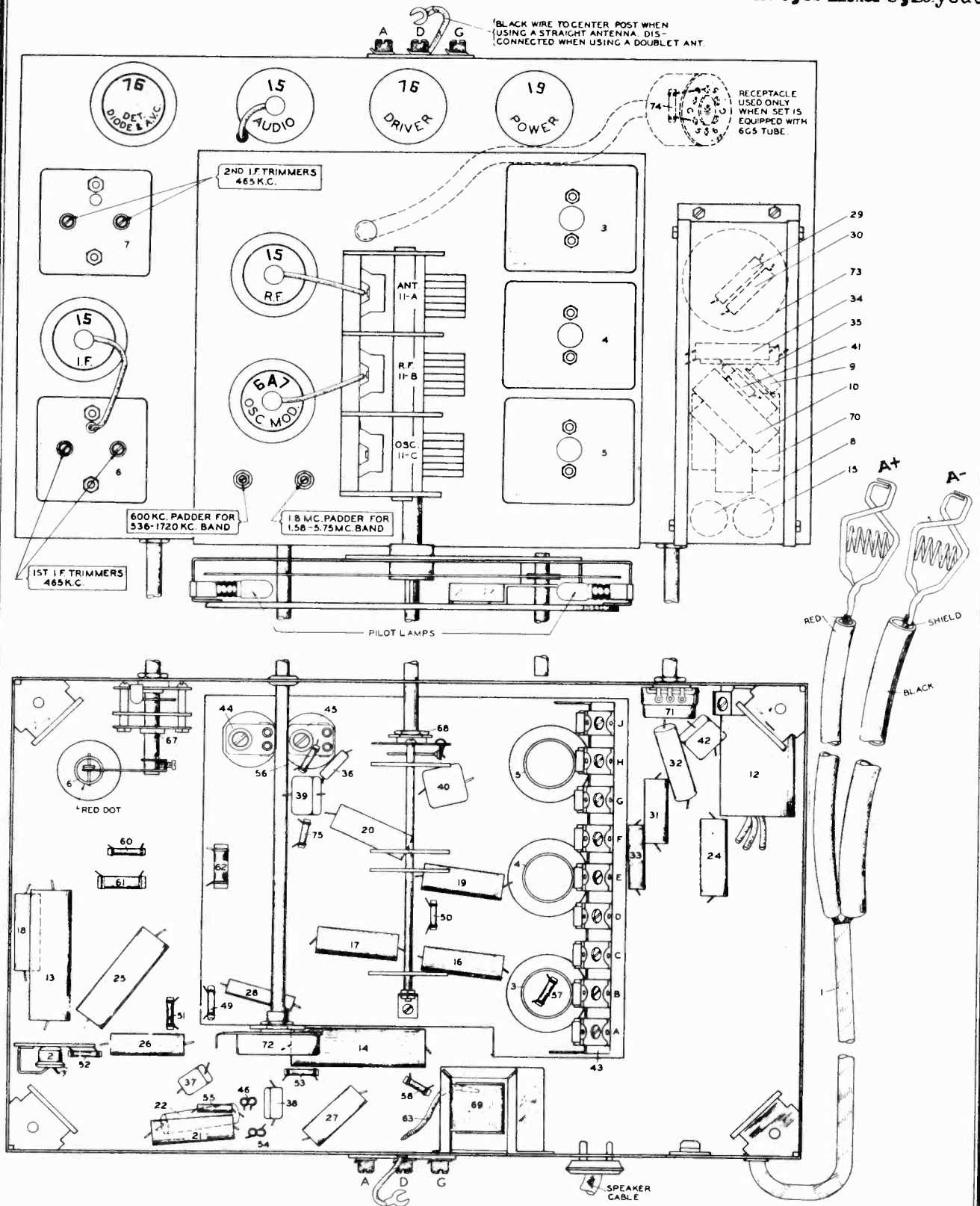
TO ALIGN THE VARIABLE CONDENSER:

It is important when aligning the gang condenser, padding and trimmer condensers to follow the procedure carefully, otherwise the receiver will be insensitive and the dial calibration will be incorrect. The padding and trimmer condensers located underneath the chassis will be referred to by their function as indicated on the circuit diagram.

1. Connect the high output side of the test oscillator through a 400 ohm resistor to the receiver antenna lead and the low side to the set ground.
2. Place the band selector switch for operation on the 5.8 to 18.1 megacycle band, tune the receiver dial, and set the test oscillator frequency to EXACTLY 18.1 MEGACYCLES.
Tune in the 18.1 MEGACYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING THE 18.1 MEGACYCLE OSCILLATOR TRIMMER. 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 18.1 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 18.1 megacycles, always check to see if the proper peak has been used. To do this leave the test oscillator frequency at 18.1 megacycles, increase the output of the test oscillator and tune the receiver dial to approximately 17.1 megacycles, and if the fundamental peak was used in aligning at 18.1 megacycles the test oscillator signal will be heard at approximately 17.1 megacycles on the receiver dial. If it is not possible to receive the signal, then the fundamental peak was not used and the 18.1 megacycle oscillator trimmer must be properly re-adjusted.
3. With band selector switch set for operation on 5.8 to 18.1 megacycle band tune the receiver dial and set test oscillator frequency to EXACTLY 16 MEGACYCLES. Adjust 16 megacycle antenna trimmer for maximum 16 megacycle signal sensitivity.
4. Place band selector switch for operation on 1.7 to 5.8 megacycle band, tune the receiver dial, and set test oscillator frequency to EXACTLY 5.8 MEGACYCLES. BRING IN 5.8 MEGACYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING 5.8 MEGACYCLE OSCILLATOR TRIMMER.
5. With the band selector switch set for operation on the 1.7 to 5.8 megacycle band tune receiver dial and set test oscillator frequency to EXACTLY 5 MEGACYCLES. Then adjust 5 megacycle antenna trimmer for maximum 5 megacycle signal sensitivity.
6. Replace the 400 ohm resistor in series with test oscillator lead with a 200 Mmf. condenser, place the band selector switch for operation on the 540 to 1720 kilocycle band, tune receiver dial, and set test oscillator frequency to EXACTLY 600 KILOCYCLES. NEXT BRING IN THE 1720 KILOCYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING 1720 KILOCYCLE OSCILLATOR TRIMMER.
7. With band selector switch placed for operation on the 540 to 1720 kilocycle band set test oscillator frequency and receiver dial to EXACTLY 1400 KILOCYCLES. Adjust 1400 kilocycle prescaler and antenna trimmers for maximum 1400 kilocycle signal sensitivity.

ALLIED RADIO CORP.

MODELS A9833 to A9838
Chassis 66B, 66BE incl.
Socket, Trimmers, Layout



**Three Band Model 66B and 66BE
Six Volt Battery Operated Superheterodyne Receiver**

MODELS A9833 to A9838 incl.
Chassis 66B,66BE

ALLIED RADIO CORP.

Alignment, Parts

ALIGNING I.F. STAGE AT 465 KILOCYCLES:

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

ALIGNING 1720-536 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 6A7 tube and connect to receiver antenna post through a .00025 Mfd. series condenser.
- (c) Adjust band selector switch for operation on the 1720-536 kilocycle band.
- (d) Set test oscillator frequency and receiver dial to EXACTLY 1720 kilocycles, and BRING IN 1720 KILOCYCLE TEST OSCILLATOR SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING 1720 KILOCYCLE OSCILLATOR TRIMMER.
- (e) Tune receiver dial and set test oscillator frequency to EXACTLY 1500 kilocycles. Adjust 1500 K.C., R.F. and antenna trimmers for maximum sensitivity.
- (e) 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 padder for maximum signal response.

ALIGNING 1.58-5.75 MEGACYCLE BAND:

- (a) Replace .00025 Mfd. test oscillator antenna lead series condenser with a 400 ohm resistor.
- (b) Adjust band selector switch to 1.58-5.75 megacycles, tune receiver dial and set test oscillator frequency to EXACTLY 5.75 megacycles. Bring in 5.75 megacycle test band signal to maximum output by adjusting 5.75 M.C. oscillator trimmer.
- (c) Tune receiver dial and test oscillator frequency to EXACTLY 5 Megacycles, and adjust 5 M.C. antenna and R.F. trimmers for maximum sensitivity.
- (d) Set test oscillator and receiver dial to approximately 1.8 megacycles. Then while rotating gang condenser slightly to right and left adjust 1.8 megacycle oscillator padder.

ALIGNING 5.65-20.25 MEGACYCLE BAND:

- (a) Leave 400 ohm resistor in series with test oscillator lead and place band selector switch for operation on 5.65-20.25 megacycle band, tune receiver dial and set test oscillator frequency to EXACTLY 20.25 megacycles.
- (b) Adjust 20.25 M.C. oscillator trimmer to bring in 20.25 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 20.25 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 20.25 megacycles always check to see if the proper peak has been used. To do this leave test oscillator frequency at 20.25 megacycles, increase the output of the test oscillator and tune receiver dial to approximately 19.25 megacycles. Then vary the receiver dial slightly to the right and left of 19.25 megacycles, and if the fundamental peak was used in aligning at 20.25 megacycles the test oscillator signal will be heard at approximately 19.25 megacycles on the receiver dial.

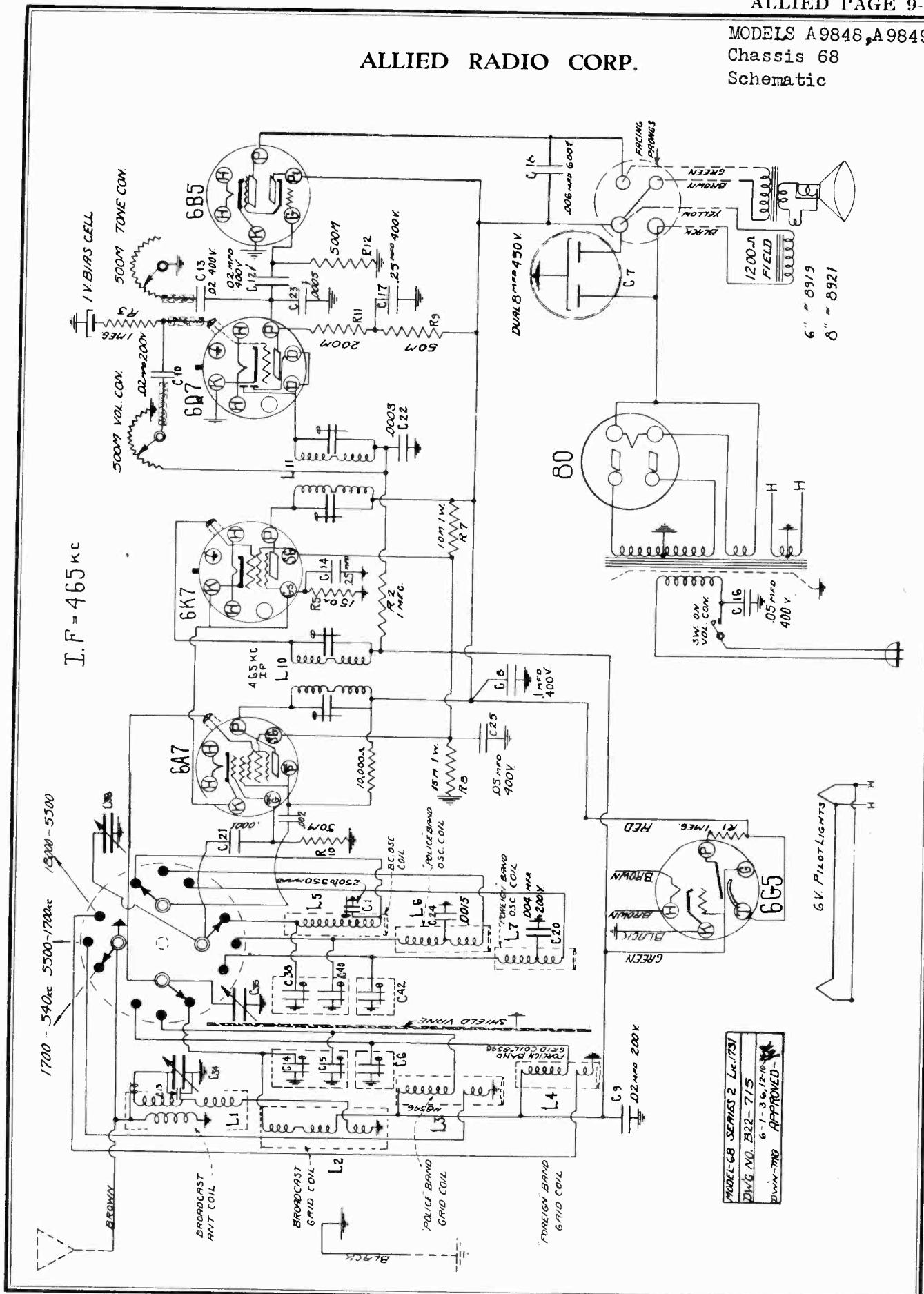
- (c) Tune receiver dial and set test oscillator frequency to EXACTLY 18 megacycles.
- (d) Rock gang condenser slightly to right and left and adjust 18 M.C. antenna and R.F. trimmers for maximum 18 megacycle test signal response.

Prices are subject to change without notice.

Illus. No.	Part No.	Part Name	Description	List Price	Illus. No.	Part No.	Part Name	Description	List Price
1	2261	Cable	Battery with Clips	.65	51	6984	Resistor	Carbon 1/2 Meg. Ohm 1/3 Watt	.19
2	1928	Coil	Bias 1.25 Volt	.22	52	6984	Resistor	Carbon 1/2 Meg. Ohm 1/3 Watt	.19
3	2975	Coil	Antenna	2.10	53	6984	Resistor	Carbon 1/2 Meg. Ohm 1/3 Watt	.19
4	2976	Coil	R. F.	2.20	54	8906	Resistor	Carbon 1/4 Meg. Ohm 1/3 Watt	.19
5	2977	Coil	Oscillator	1.80	55	8000	Resistor	Carbon 100,000 Ohm 1/3 Watt	.19
6	2959	Coil	1st I. F. Trans.	1.60	56	6879	Resistor	Carbon 50,000 Ohm 1/3 Watt	.19
7	2957	Coil	2nd I. F. Trans. Complete	1.80	57	9693	Resistor	Carbon 5,000 Ohm 1/3 Watt	.19
			Less Sel-Fid. Switch Assembly		58	2437	Resistor	Carbon 2,500 Ohm 1/3 Watt	.19
8	9539	Choke	R. F. "A"	.45	59	1152	Resistor	Carbon 400 Ohm 1/3 Watt	.19
9	2066	Choke	R. F. "B"	.28	60	6875	Resistor	Carbon 250 Ohm 1/3 Watt	.19
10	2271	Choke	Filter	1.00	61	1336	Resistor	Carbon 20,000 Ohm 1/3 Watt	.19
11	2978	Condenser	3 Gang Tuning	4.25	62	1176	Resistor	Carbon 10,000 Ohm 1/3 Watt	.19
12	3060	Condenser	Dry Elec. (Dual 8 Mfd.)	1.15	63	3061	Resistor	Flex. Wire Wound 15.4 Ohm 1 Watt	.19
13	3159	Condenser	Dry Elec. 4 Mfd. Tubular	.80	64	3021	Speaker	P. M. Dynamic (6")	5.00
14	8876	Condenser	Dry Elec. 5 Mfd. Tubular	.85	65	3022	Speaker	P. M. Dynamic (8")	6.00
15	1148	Condenser	Tubular .5 Mfd. 200 Volt	.40	66	3097	Speaker	P. M. Dynamic (10")	7.00
16	9386	Condenser	Tubular .1 Mfd. 200 Volt	.19	67	2961	Switch	Selectivity-Fidelity Complete with Arm and Connecting Link	1.05
17	9386	Condenser	Tubular .1 Mfd. 200 Volt	.19	68	2973	Switch	Band Selector	.80
18	9386	Condenser	Tubular .1 Mfd. 200 Volt	.19	69	1331	Transformer	Audio	1.40
19	9386	Condenser	Tubular .1 Mfd. 200 Volt	.19	70	3067	Transformer	Power	2.35
20	9386	Condenser	Tubular .1 Mfd. 200 Volt	.19	71	2965	Tone Control	With "On-Off" Switch	1.00
21	9386	Condenser	Tubular .1 Mfd. 200 Volt	.19	72	2966	Volume Control		.85
22	9386	Condenser	Tubular .1 Mfd. 200 Volt	.19	73	3069	Vibrator		4.50
23	9525	Condenser	Tubular .25 Mfd. 200 Volt	.24	74	2616	Resistor	Carbon 1 Meg. Ohm 1/3 Watt	.19
24	9386	Condenser	Tubular .1 Mfd. 200 Volt	.19					
26	1147	Condenser	Tubular .05 Mfd. 200 Volt	.19					
27	1147	Condenser	Tubular .05 Mfd. 200 Volt	.18					
28	1275	Condenser	Tubular .005 Mfd. 400 Volt	.18	2758	Arm	Selectivity-Fidelity Mechanism		.10
29	1275	Condenser	Tubular .005 Mfd. 400 Volt	.18	9023	Bulb	6.3 Volt .150 Amp. Dial Light		.19
30	1275	Condenser	Tubular .005 Mfd. 400 Volt	.18	9063	Base	Tube Shield		.05
31	9714	Condenser	Tubular .02 Mfd. 400 Volt	.18	2500	Cable	For 6G5 Tube Socket		.50
32	1497	Condenser	Tubular .03 Mfd. 600 Volt	.19	2498	Clamp	For 6G5 Socket		.08
33	2075	Condenser	Tubular .01 Mfd. 1200 Volt	.23	3092	Rod	8-32x2-1/2" Threaded for Blm.		.35
34	3136	Condenser	Tubular .01 Mfd. 1200 Volt	.23	3070	Covers	Front and Back for Blm.		.425
35	3136	Condenser	Tubular .01 Mfd. 1200 Volt	.23	2422	Dial Assembly	Complete		.80
36	9458	Condenser	Mica .00025 Mfd.	.21	2423	Dial Scale	Calibrated Scale—Mention Name Required		.55
37	9458	Condenser	Mica .00025 Mfd.	.21	2981	Dial Indicator	Band Indicator with Arm		1.35
38	9458	Condenser	Mica .00025 Mfd.	.21	2987	Glass	With Escutcheon		.30
39	1440	Condenser	Mica .002 Mfd.	.21	2534	Knob	Marked "Tuning"		.30
40	1628	Condenser	Mica .0045 Mfd.	.21	2444	Knob	Marked "Volume"		.30
41	1441	Condenser	Mica .004 Mfd.	.21	2732	Knob	Marked "Selectivity"		.30
42	1441	Condenser	Mica .004 Mfd.	.21	2445	Knob	Marked "Band Selector"		.30
43	2969	Condenser	Trimmer (Assembly)	1.30	2535	Knob	Marked "Tone On and Off"		.15
44	1054	Condenser	Padding (300-600 M.M.F.)	.55	3083	Pointer	Dial		.15
45	1053	Condenser	Padding (800-1200 M.M.F.)	.55	3059	Receptacle	6 Volt Attachment		.15
46	2778	Resistor	Carbon 2 Meg. Ohm 1/3 Watt	.19	1361	Strip	Tube		.25
49	7998	Resistor	Carbon 1 Meg. Ohm 1/3 Watt	.19	2953	Strip	Antenna and Ground		.25
50	6984	Resistor	Carbon 1/2 Meg. Ohm 1/3 Watt	.19	2528	Shell	Bakelite for 6G5 Socket		.09

ALLIED RADIO CORP.

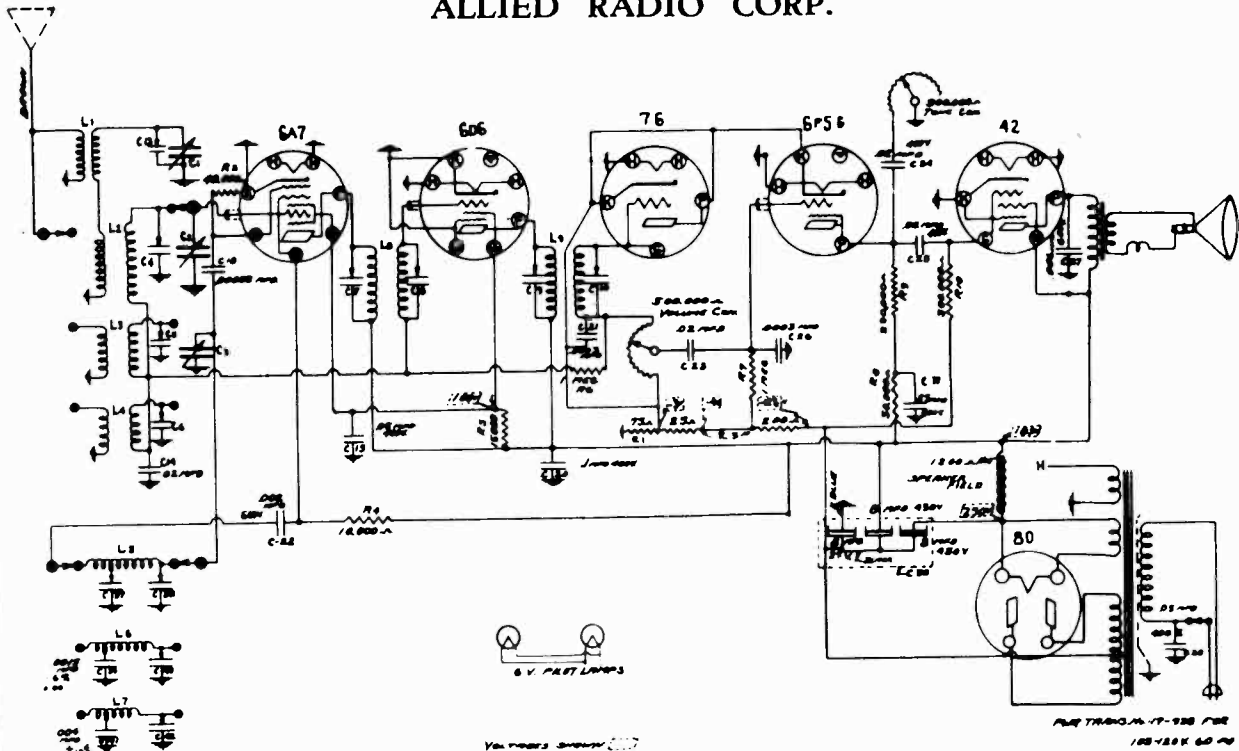
MODELS A9848, A9849
Chassis 68
Schematic



MODELS A9848, A9848

Chassis 266, 268
Schematics

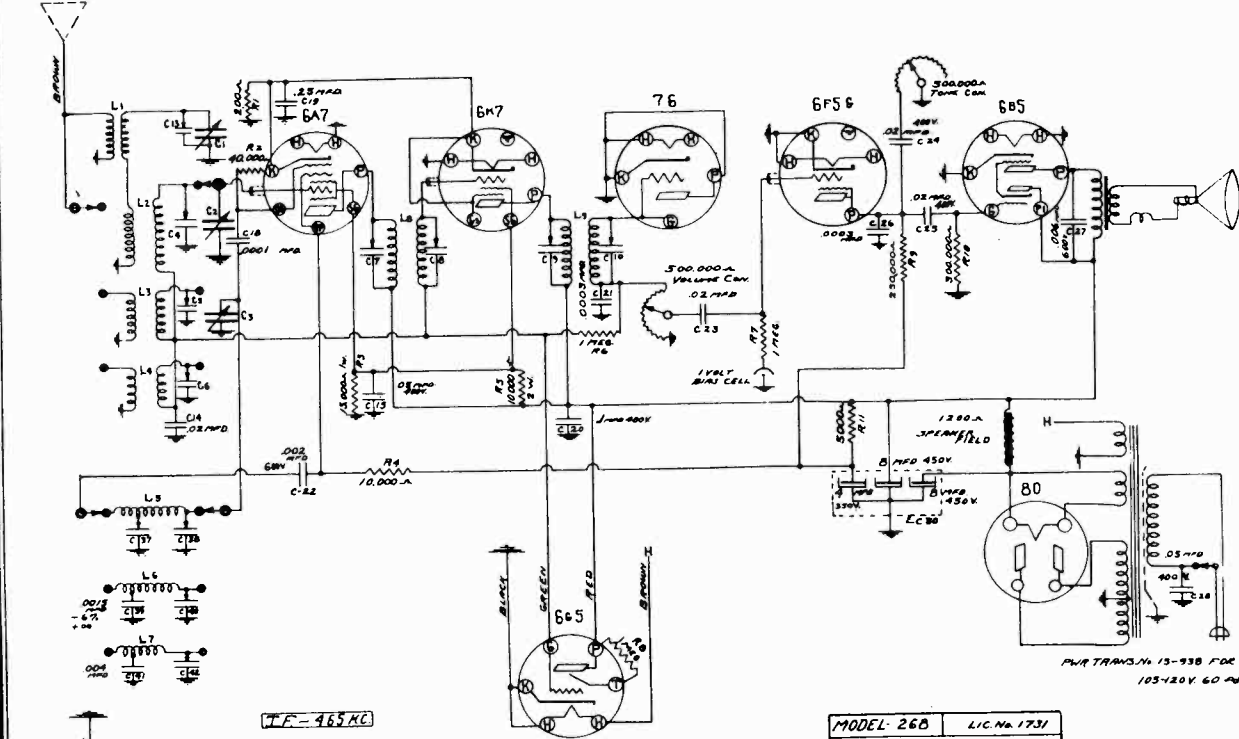
ALLIED RADIO CORP.



TF-485KC

VALUES SHOWN IN
PARENTS POTENTIAL
FROM GROUND, WITH
LINE VOLTAGE 117V

MODEL 266	LIC. No. 1731
Dist. No. 23-715	12-30-36
Dist. - 700	CHD. - 200



TF-465KC

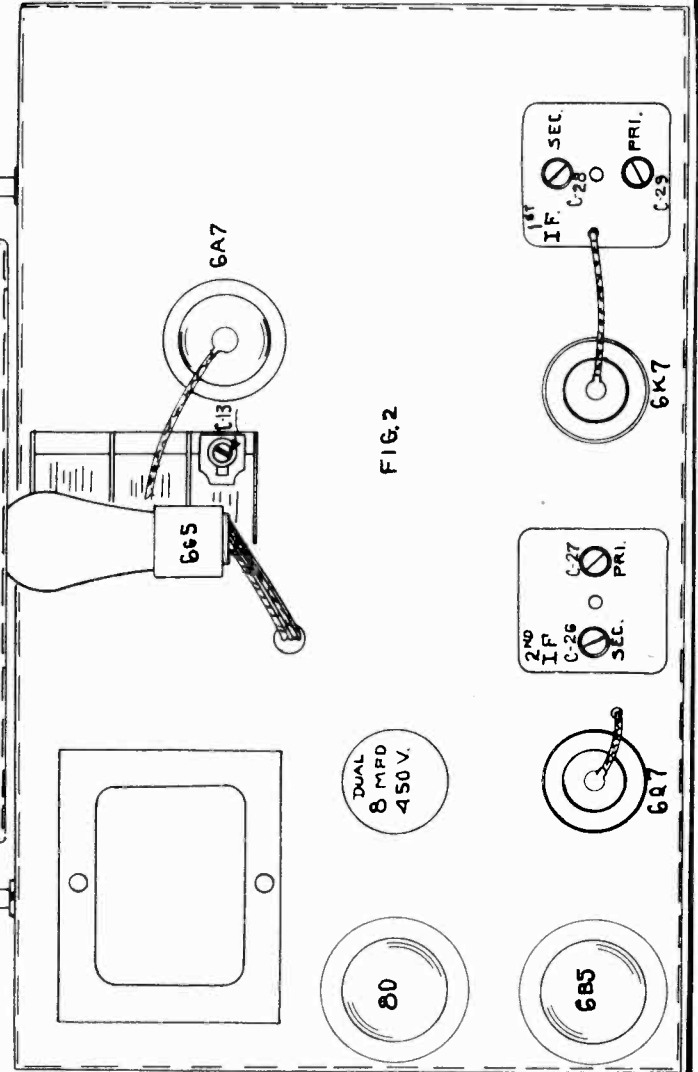
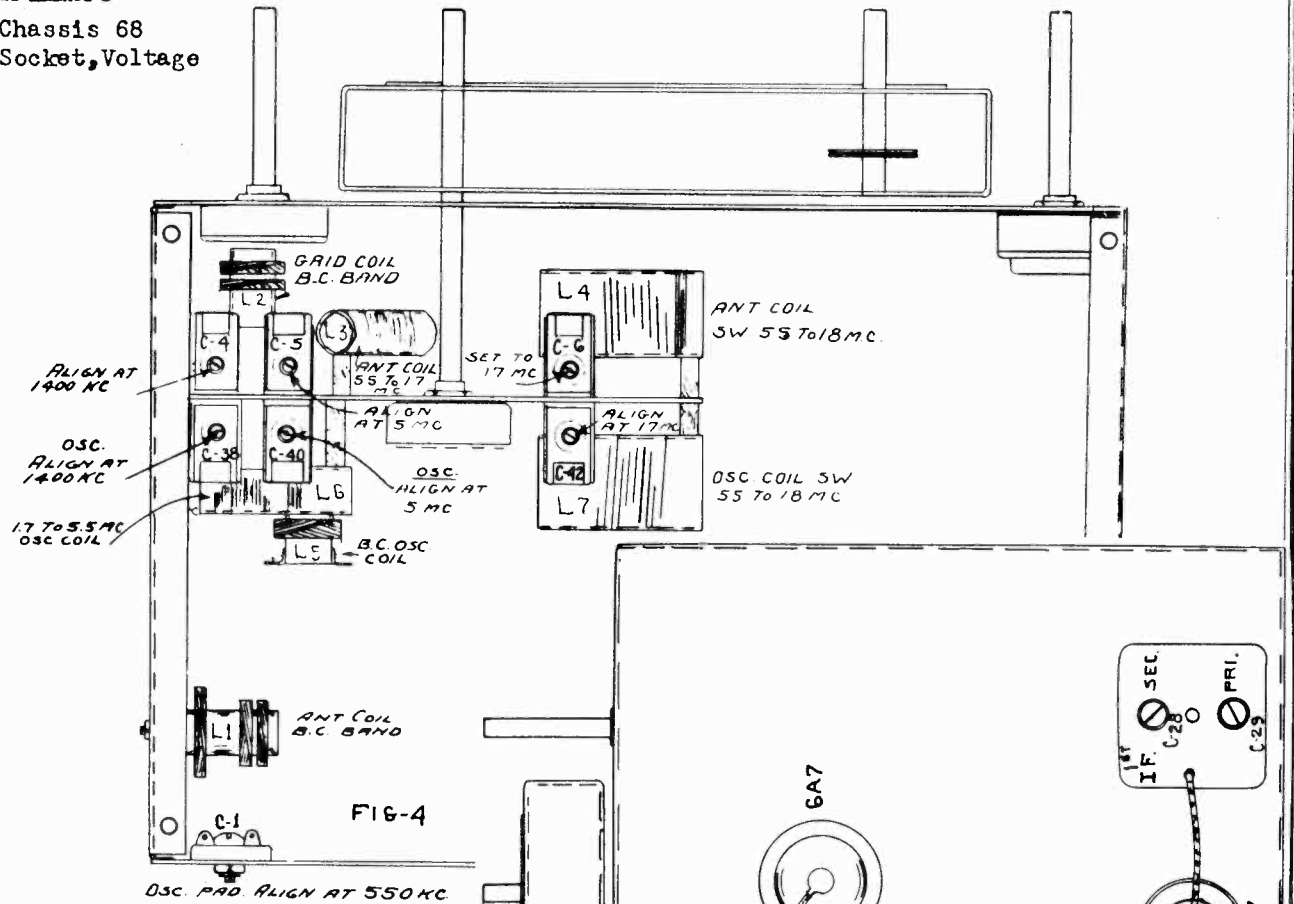
MODEL 268	LIC. No. 1731
Dist. No. 221-715	12-30-36
Dist. - 700	CHD. - 200



Chassis 68,266,268
 Trimmers
 Chassis 68
 Socket, Voltage

ALLIED RADIO CORP.

MODELS A9848, A9849



TUBE	PLATE	CATHODE	S.G.	OSC. PLATE
6A7	230	2½	98	180 V.
6K7	230	2½	98	-
6Q7	35	-	-	-
6B5	220	-	-	P.1 235
6G5	Target 235	-	-	-
80	H.V. OFF FILAMENT 320 VOLTS DROP ACROSS SPEAKER FIELD 85 VOLTS			

VOLTAGE READINGS TAKEN FROM GROUND
 WITH LINE VOLTAGE AT 115 VOLTS
 NO SIGNAL IN ANTENNA

MODELS A9848, A9849
Chassis 68, 266, 268

ALLIED RADIO CORP.

Alignment

The following alignment instructions are given with the assumption that the Service Station has a signal generator capable of accurately covering the range of the receiver.

The only other apparatus necessary is a meter connected in the output stage to indicate resonance. This can be an 0 to 3 Volt AC meter connected across the voice coil of the speaker or preferably an output meter connected in the plate circuit of the power tube in series with an 8 Mfd. paper condenser.

I. THE I.F. STAGES

The intermediate frequency stages are aligned in the usual manner by feeding 465 K.C. into the grid of the mixer tube 6A7.

The two trimmers in each of the I.F. cans should be very carefully peaked to resonance as they are very critical and will greatly affect the performance of the set. These are trimmers Nos. C-26, 27, 28, 29 on Figure 2.

Always use as low an output as possible from the signal generator when making the various adjustments.

The sensitivity of the I.F. system alone will be found to be between 15 and 20 Microvolts.

II. ALIGNMENT OF THE SHORT WAVE BAND 5.5 TO 18 M.C.

First check the position of the dial hand by rotating the variable condenser to full capacity. The hand then should be in line with the lines that divide the dial in half. If the hand is off position it can be lined up by loosening the center screw.

1. Turn band switch all the way to the right for the 5.5 to 18 M.C. Band (Yellow), and set dial hand to 17 M.C.
2. Refer to Figure 3 and with a 17 M.C. signal from the generator, peak oscillator, trimmer condenser C-42 to 17 M.C.
3. Adjust trimmer C-6 of the antenna circuit to 17 M.C. after the above mentioned oscillator trimmer has been set.

III. ALIGNMENT OF SHORT WAVE BAND 1.7 TO 5.5 M.C.

1. With the band switch in the middle position, (Blue) and the dial hand set to 5 M.C., peak trimmer C-40 of the oscillator circuit to 5 M.C.
2. Adjust Antenna stage trimmer C-5 to 5 M.C. after the above oscillator trimmer has been set.

NOTE: After adjusting the two high bands at 17 megacycles and 5 megacycles the test oscillator input to antenna should be increased and receiver dial advanced to .9 megacycle lower and note if test oscillator signal is heard.

In case there is no response, the oscillator trimmers have been pulled down too tightly. The trimmers should be released until this condition exists, then go back to original point of alignment - reduce antenna input voltage and correct the trimmer adjustment.

EXAMPLE: The receiver has been adjusted to 17 megacycles. Tune receiver to approximately 16.9 M.C.

Increase oscillator signal by "opening up" the attenuator. Move the dial back and forth at 16.9 M.C.

If no signal is heard, let oscillator trimmer off until it is heard at 16.9 M.C.

Reduce signal voltage from generator, go back to 17 M.C. and slightly correct this last trimmer adjustment.

The same thing applies to the 5 M.C. adjustment.

IV. THE ALIGNMENT OF THE BROADCAST BAND

1. Set Band Switch to the 550-1700 K.C. band, and the hand to 1400 K.C.
2. Peak oscillator trimmer C-38 to 1400 K.C., then the R.F. Trimmer C-4 and the antenna stage trimmer C-13 on the variable condenser to 1400 K.C.
3. Rotate dial hand to 550 K.C. and adjust padding condenser C-37 to 550 K.C.
4. Re-check dial at 1400 K.C. as mentioned in (1) and (2).
5. Points in the middle of the dial may be checked and if necessary the plates of the oscillator section of the variable condenser (back section) may be bent for alignment.

V. NOTES

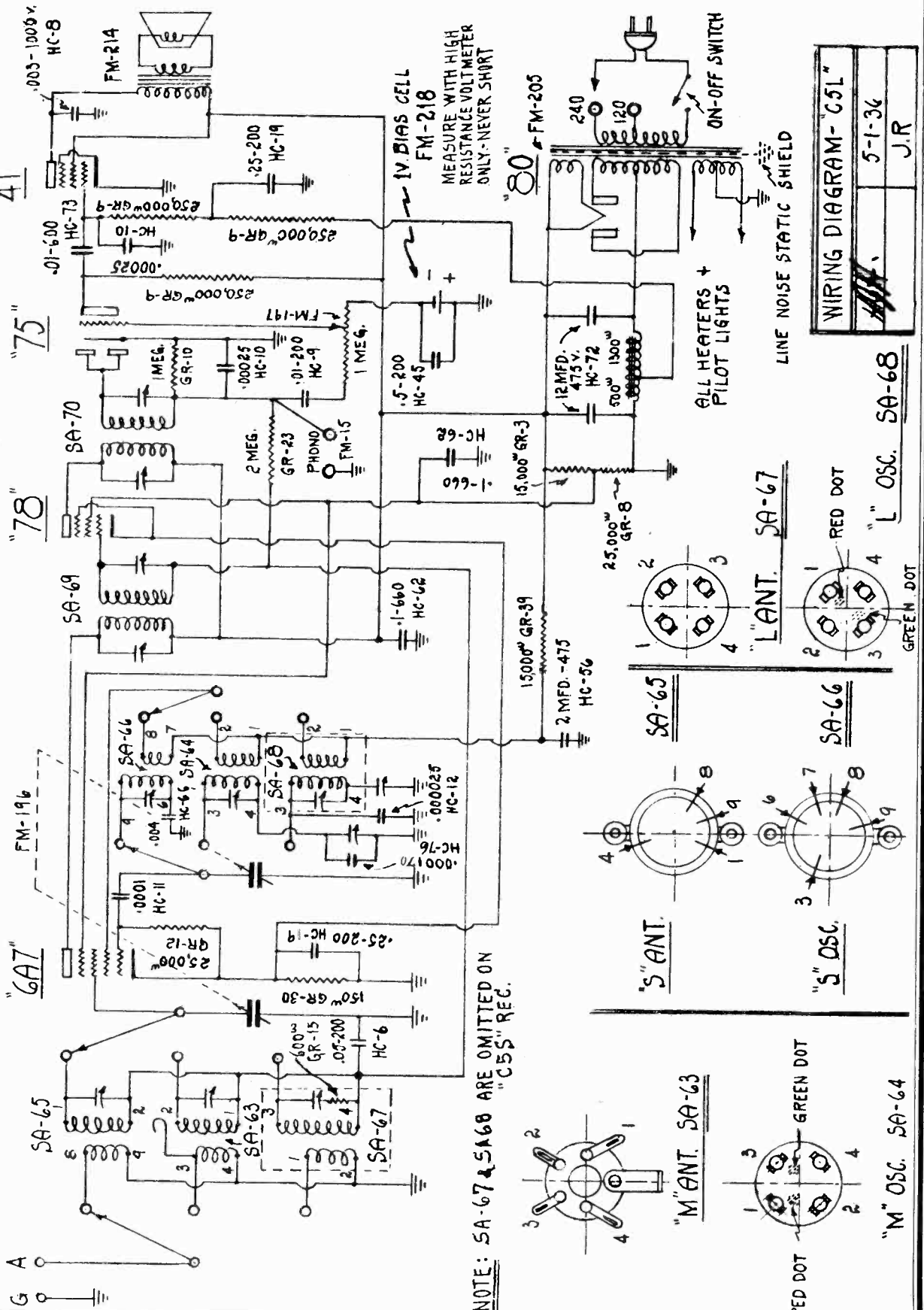
1. Seal all trimmers after their final adjustment.
2. Be sure that the settings are being made to the true fundamental signal from the oscillator and not on a harmonic or image frequency.
3. The normal voltage readings at the sockets are given in a separate chart on the following pages.
4. It is advisable to check the position of the tuning eye tube to make certain that it is not pushed against the inside of the dial card. With the adjustment screw on the bracket, allow a small amount of clearance between the end of the tube and the dial to avoid any possibility of the heat from the tube affecting the dial card.

ANDREA RADIO CORP.

MODELS 1C5, 2C5, 510, 511
Chassis C5L, C5S, UC5L, UC5S
Schematic, Coils,
Parts

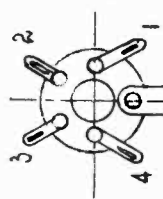
BAND SELECTOR SWITCH SHOWN IN SHORT WAVE POSITION

ALIGNING FREQ.S: "L" = 150-335 KC. "M" = 1400-600 KC. "S" = 15 MC. "IF" = 470 KC.

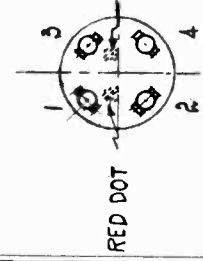


WIRING DIAGRAM - "C5L"
5-1-36
J.R.

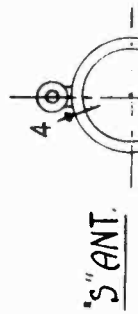
NOTE: SA-67 & SA-68 ARE OMITTED ON "C5S" REC.



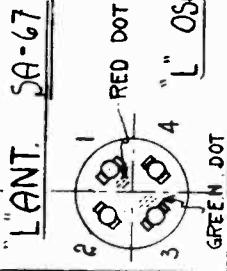
"M" ANT. SA-63



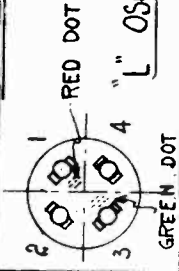
"M" OSC. SA-64



"S" ANT.



"L" ANT. SA-67



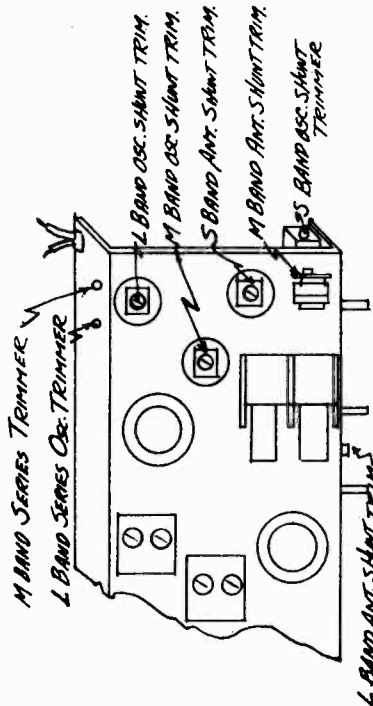
"L" OSC. SA-68

MODELS 1C5, 2C5, 510, 511
Chassis C5L, C5S, UC5L, UC5S
Alignment, Trimmers, Notes

ANDREA RADIO CORP.

ALIGN FREQUENCY DUMMY ANT. TUBE SWITCH
I.F. 470KC .1 MFD. 6A7 (Grid) --
"S" 15,000 KC 400 OHMS -- RIGHT
"M" 1400 KC .00025 MFD. -- CENTER
"W" 600 KC .00025 MFD. -- CENTER

I.F.
High potential lead in series with .1 mfd. condenser to grid of 6A7 tube.
Adjust trimmers on first and second I.F. transformers, to maximum output.
"S" (Short Wave)
Signal generator high potential lead in series with 400 ohm resistor to receiver antenna lead (RED). Receiver Ground wire to low side of signal generator output. Adjust antenna coil trimmer for maximum output.
"M" (Medium Wave)
Replace 400 ohm resistor with .00025 mfd. condenser. Set signal at 1400 KC.
Adjust antenna shunt trimmer to maximum output.
With connections as for 1400 KC, set signal generator at 600KC. Adjust "M" oscillator series trimmer to maximum output (rotate gang condenser back and forth). Recheck adjustment at 1400KC as before.
"L" (Long Wave) This band included only in UC5L and C5L Chassis.
With signal at 150KC, .1 mfd condenser as dummy antenna, connection to 6A7 grid as in previous adjustments; adjust L.W. series oscillator trimmer to LOWEST output signal.
Set generator at 355 KC. Adjust L.W. oscillator shunt trimmer to signal and readjust.
Set dial and generator at 150 Kc. Readjust L.W. series oscillator trimmer as before. Then repeat at 335KC as before.
Adjust antenna coil shunt trimmer for maximum output.
Then adjust L.W. series oscillator trimmer with dial and generator at 150 KC for maximum output. Repeat adjustment of antenna coil shunt trimmer for maximum output. Repeat adjustment of L.W. series oscillator trimmer with dial and generator at 150 KC.
Repeat these last two adjustments until the alignment is no longer improved.



December 2, 1936.

WARNING: These Receivers incorporate a 1 volt bias electrolytic cell in the 75 tube grid circuit.
Current must never be taken from this cell. All measurements must be made with a high resistance voltmeter. NEVER SHORT.
Be certain the 75 tube cap does not touch the chassis for any length of time.

MODELS 1C5, 2C5, 510, 511.
CHASSIS C5L, C5S, UC5L, UC5S.

SERVICE DATA

INSTRUCTIONS FOR INSTALLING FM-205 POWER TRANSFORMER IN ANDREA RADIO MODELS 1C5, 2C5, AND CHASSIS C5S, C5L.

Original production of receiver models 1C5, 2C5, chassis C5L, C5S, incorporated a two (2) tapped primary transformer for 120 or 240 volt, 50/60 cycle power lines. The voltage regulator socket used was of five (5) prongs with only two (2) of the five (5) prongs (marked 120-240) used.

Later production of these models used a four (4) tapped primary transformer in place of the above two tap unit. On these later models the voltage regulator socket was marked 100-120-150-220-250. Positions 100 and 120 were joined together.

All transformer replacement shipments will be of the four (4) tapped type FM-205. In receivers which are equipped with two (2) tap units and replacement is made with a four (4) tap FM-205, use ONLY the two taps needed, taping the extra two taps to eliminate short circuits. For convenience, all four taps may be wired up to the voltage regulator socket in such a manner as to have equivalent primary taps correspond to the socket marking.

The line voltage variation through which each primary tap may be used is as follows:

TAP	LINE VOLTAGE RANGE
120	105-130
150	135-160
220	205-230
250	235-260

The following is the color coding of the transformer primary taps:

ORIGINAL TWO TAPPED FM-205	PRESENT PRODUCTION FOUR TAPPED FM-205
Primary tap 120 - red & white tracer.	Primary tap 120 - red & yellow tracer
" " 240 - Green	" " 150 - yellow
" " Line - red	" " 220 - brown
	" " 250 - green
	" " Line - red

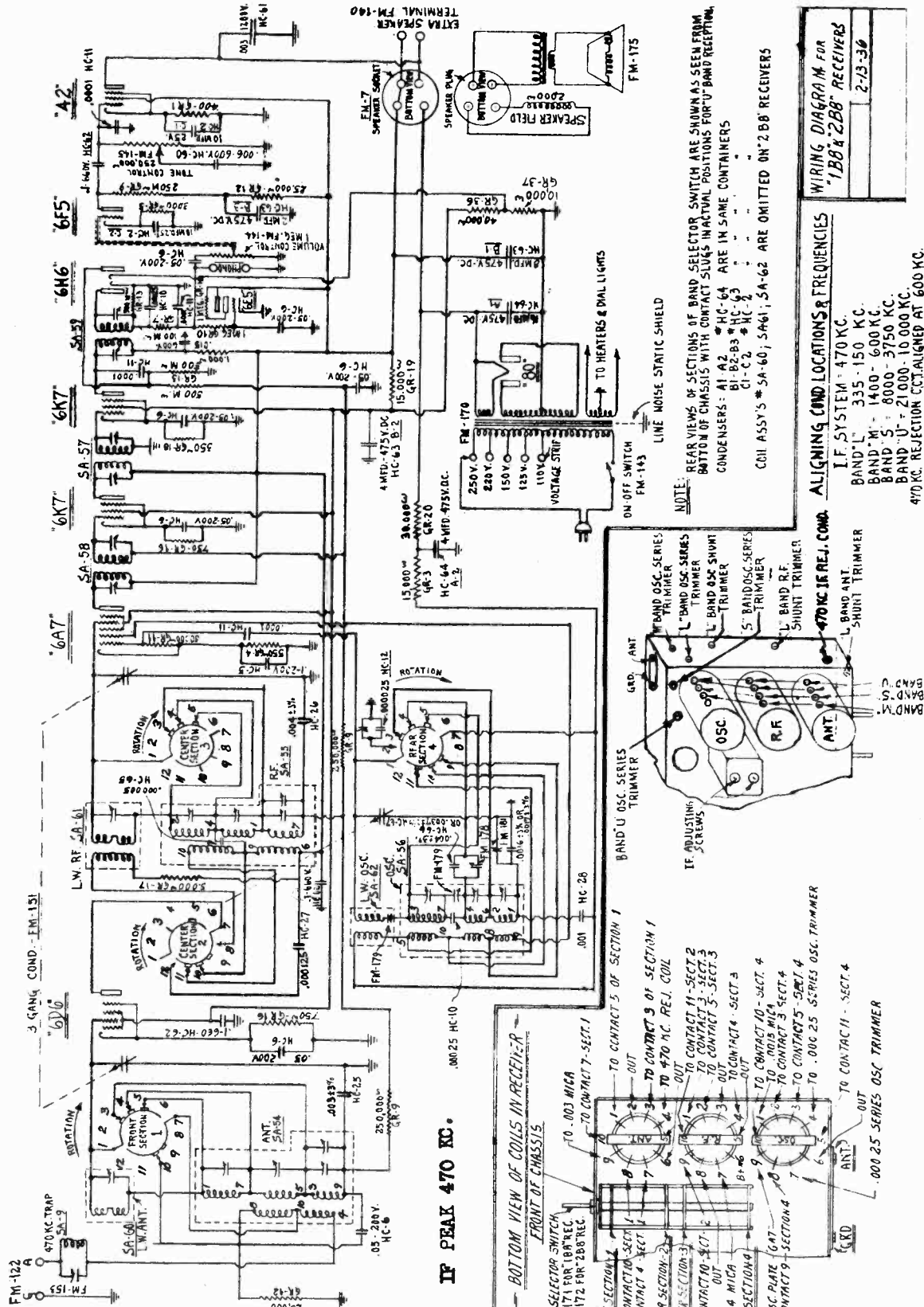
The design of this receiver is such that one band can be aligned regardless of order without disturbing the alignment on the other bands.

WARNING: Models 510, 511, Chassis UC5L and UC5S receivers are of the Universal type (AC or DC), hence the receiver chassis is at line potential. A ground wire must never be attached to the chassis directly, or damage to the receiver may result.

If the signal generator is grounded, be certain no direct connection is made to the receiver proper on Models 510 and 511. The antenna and ground leads of the receiver are isolated by means of condensers in the receiver. (see circuit diagram)

ANDREA RADIO CORP.

MODELS 1B8,2B8
Chassis B81,38S
Schematic, Trimmers
Alignment, Parts

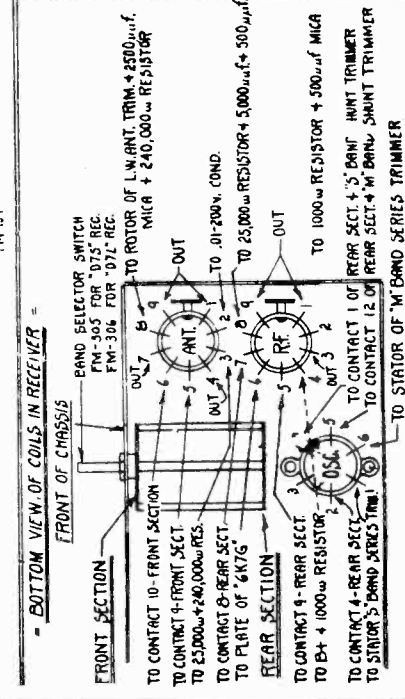
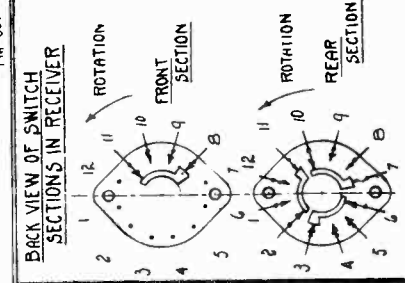
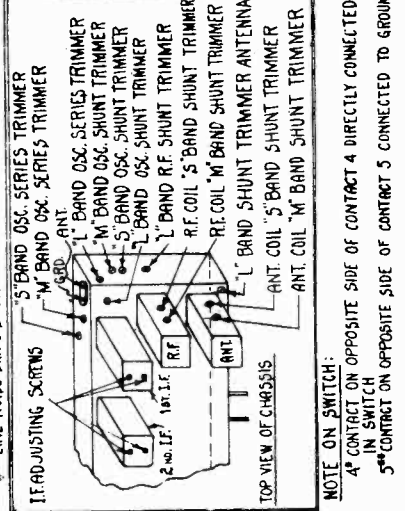
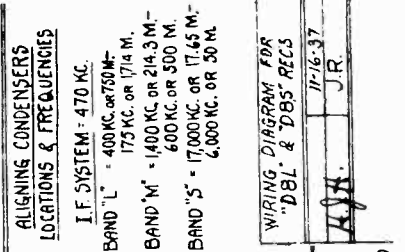
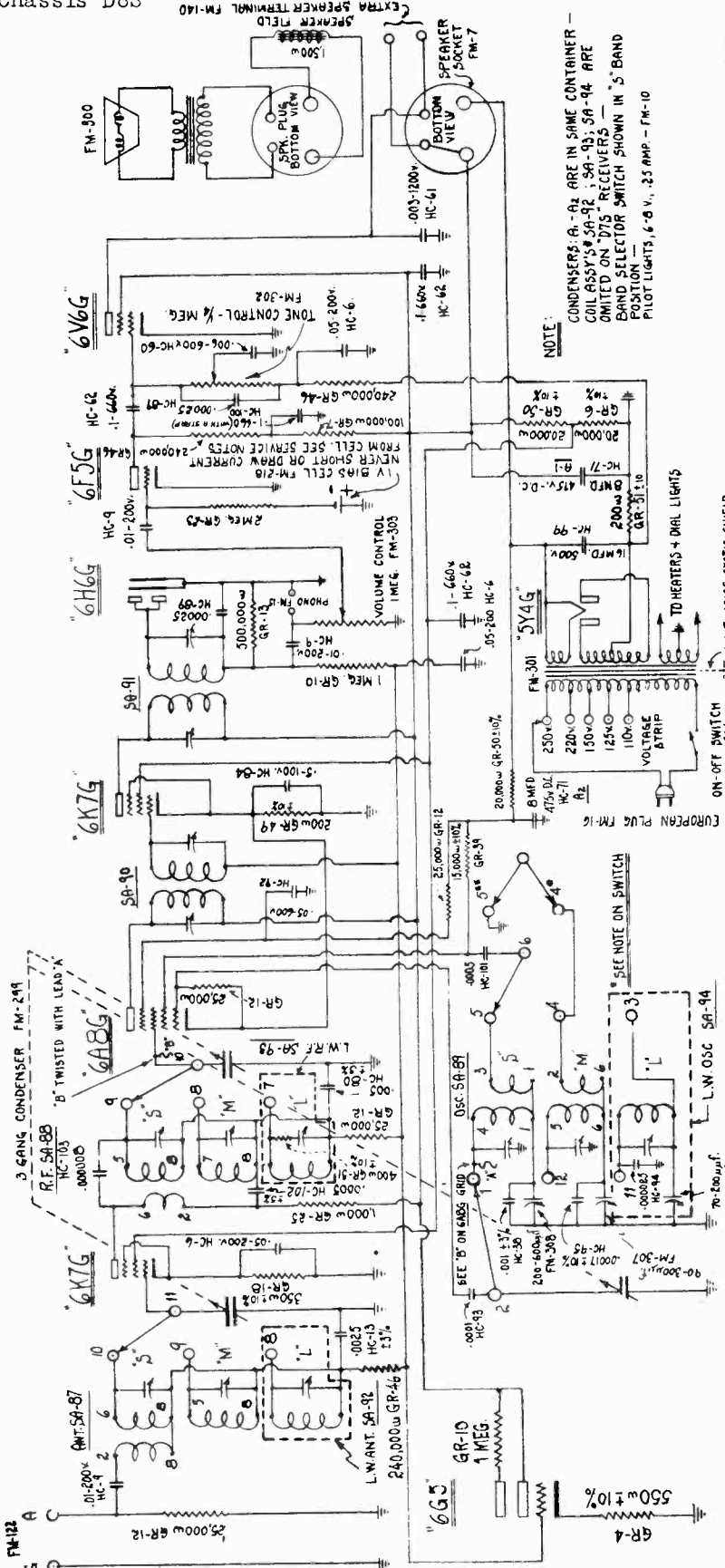


CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION VOL.-VIII

MODELS 1D8, 3D8, 5D8, 7D8
Chassis D8L
MODELS 2D8, 4D8, 6D8, 8D8
Chassis D8S

ANDREA RADIO CORP.

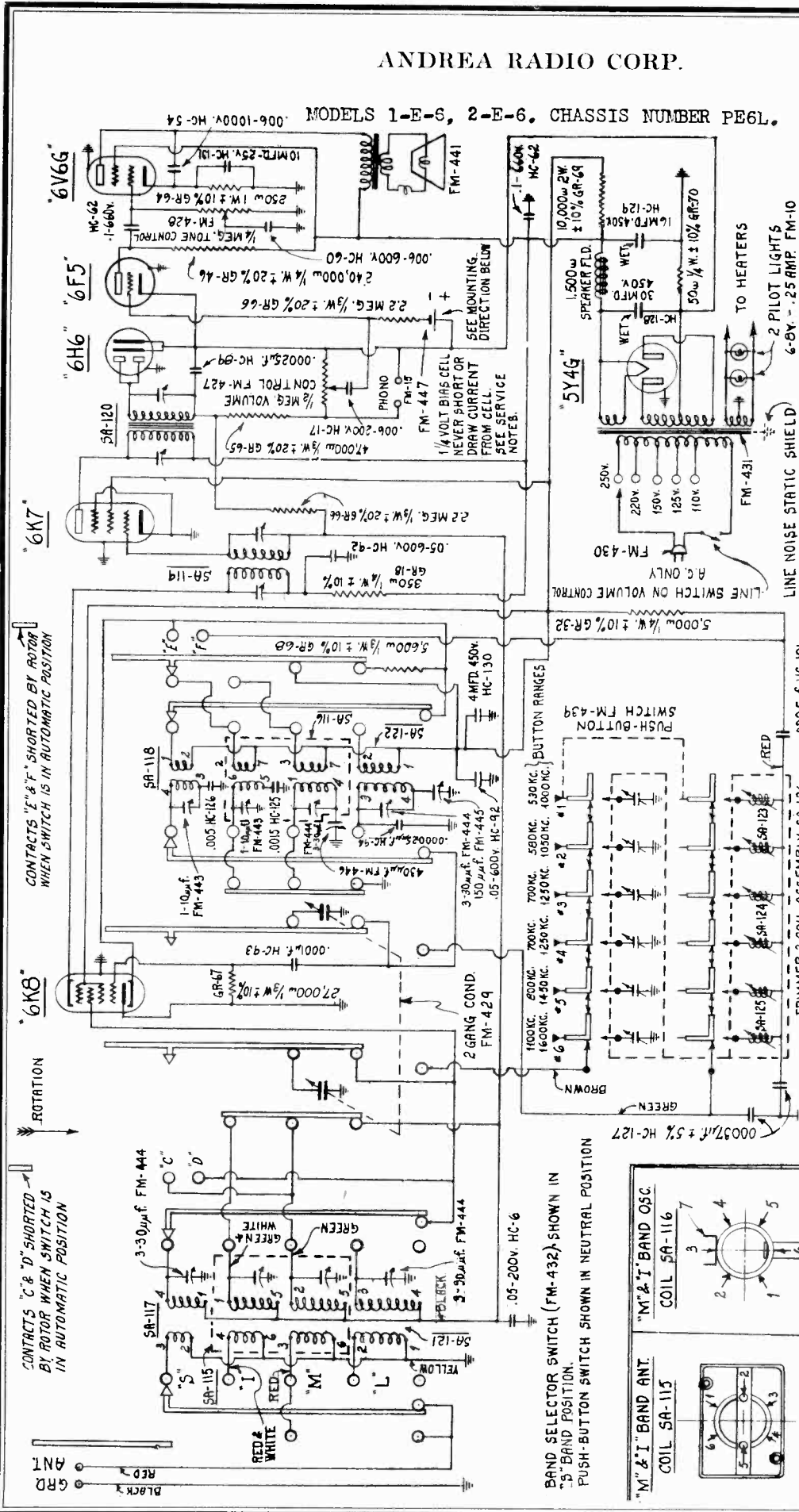
Schematic, Trimmers,
Alignment, Parts, Coils



CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION VOL. VIII

ANDREA RADIO CORP.

MODELS 1E6, 2E6
Chassis PE6L
Schematic, Trimmers
Coils, Parts



MODELS 1-E-6, 2-E-6. CHASSIS NUMBER PE6L.

10MFD-25V. HC-131
250W 1W ±10% GR-64
1/2 MEG. TONE CONTROL
FM-420
240.000W 1/4W ±20% GR-46
2.2 MEG. 1/8W ±20% GR-66
1/4 VOLT BIAS CELL
NEVER SHORT OR
DRAW CURRENT
FROM CELL.
SEE SERVICE
NOTES.
700
FM-441
1.600
HC-62
10,000W 2W
±10% GR-69
1.6MFD. 450V
30 MFD
450V
WET
HC-129
50W 1/4W ±10% GR-70
1.500W
SPK. PFLD.
WET
HC-128
30 MFD
450V
WET
FM-430
FM-431
250V
220Y
150Y
125Y
110Y
A.C. ONLY
LINE NOISE STATIC SHIELD
2 PILOT LIGHTS
6-ØY. - .25 AMP. FM-10
TO HEATERS

I.F. ADJUSTING SCREWS

ALIGNING COND. LOCATIONS & FREQUENCIES

"M" BAND OSC. SERIES TRIMMER	"L" BAND OSC. SERIES TRIMMER	"S" BAND OSC. SHUNT TRIMMER	"L" BAND OSC. SHUNT TRIMMER	"I" BAND ANT. SHUNT TRIMMER	"M" BAND ANT. SHUNT TRIMMER	"S" BAND ANT. SHUNT TRIMMER	"I" BAND ANT. SHUNT TRIMMER
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I.F. FREQUENCY = 470 K.C.
"L" BAND: 150 K.C. OR 200 METERS
400 K.C. OR 750 METERS
"M" BAND: 600 K.C. OR 500 METERS
1500 K.C. OR 200 M.
"I" BAND: 6 M.C. OR
50 METERS
"S" BAND: 21.5 M.C. OR
13.95 METERS

AFTER ALIGNING ALL PUSH-BUTTONS
BE SURE TO RECHECK EACH INDIVIDU-
ALLY FOR FINAL HAIR LINE ACCURACY.
DUBILLY FOR FINAL HAIR LINE ACCURACY.

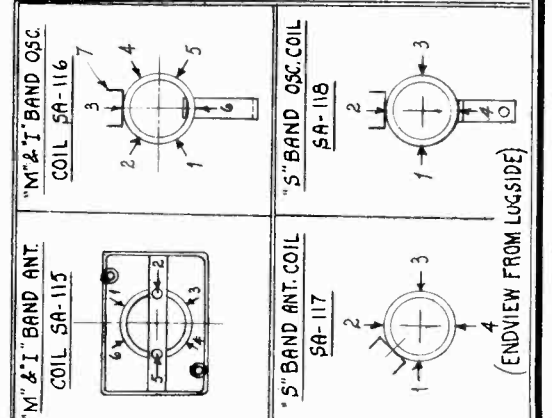
DATE: 4-27-36
OR J.R.
PART NO.

CONTRACTS "E" & "F" SHORTED BY ROTOR
WHEN SWITCH IS IN AUTOMATIC POSITION

ROTATION

CONTRACTS "C" & "D" SHORTED
BY ROTOR WHEN SWITCH IS
IN AUTOMATIC POSITION

BAND SELECTOR SWITCH (FM-432) SHOWN IN
"S" BAND POSITION.
PUSH-BUTTON SWITCH SHOWN IN NEUTRAL POSITION



MODELS 1E6, 2E6

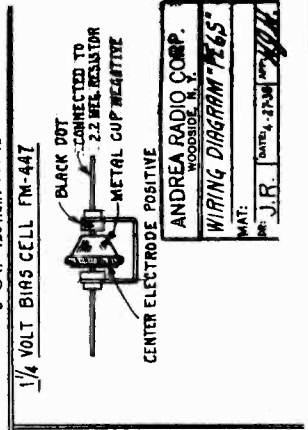
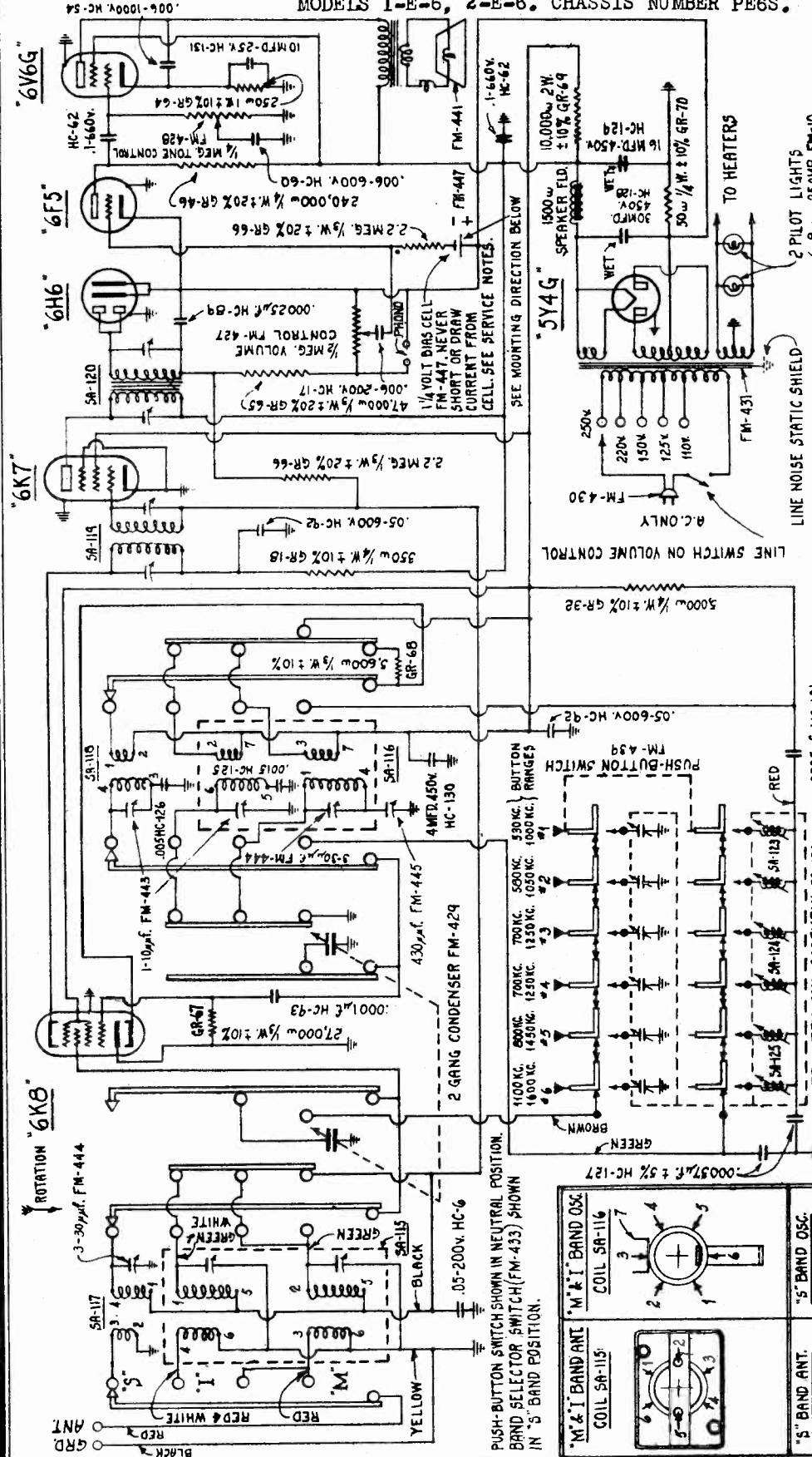
Chassis PE6S

Schematic, Trimmers

Coils, Parts

ANDREA RADIO CORP.

MODELS 1-E-6, 2-E-6. CHASSIS NUMBER PE6S.



1/4 VOLT BIAS CELL FM-447

BLACK DOT CONNECTED TO 2.2 MEG. RESISTOR

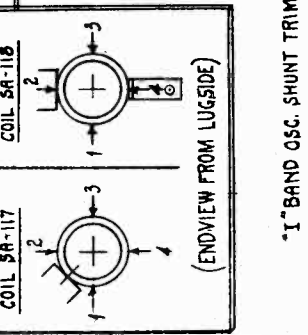
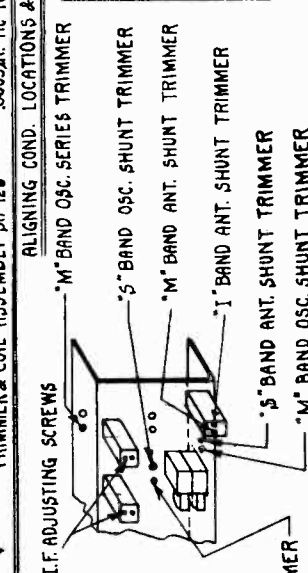
METAL CUP NEGATIVE

CENTER ELECTRODE POSITIVE

ANDREA RADIO CORP.
WOODBRIDGE, N. Y.

WIRING DIAGRAM PE6S

DATE: J.R. 1934



TRIMMER & COIL ASSEMBLY SA-126

TRIMMER & COIL ASSEMBLY SA-127

TRIMMER & COIL ASSEMBLY SA-128

TRIMMER & COIL ASSEMBLY SA-129

TRIMMER & COIL ASSEMBLY SA-130

TRIMMER & COIL ASSEMBLY SA-131

TRIMMER & COIL ASSEMBLY SA-132

TRIMMER & COIL ASSEMBLY SA-133

TRIMMER & COIL ASSEMBLY SA-134

TRIMMER & COIL ASSEMBLY SA-135

TRIMMER & COIL ASSEMBLY SA-136

TRIMMER & COIL ASSEMBLY SA-137

TRIMMER & COIL ASSEMBLY SA-138

TRIMMER & COIL ASSEMBLY SA-139

TRIMMER & COIL ASSEMBLY SA-140

TRIMMER & COIL ASSEMBLY SA-141

TRIMMER & COIL ASSEMBLY SA-142

TRIMMER & COIL ASSEMBLY SA-143

TRIMMER & COIL ASSEMBLY SA-144

TRIMMER & COIL ASSEMBLY SA-145

TRIMMER & COIL ASSEMBLY SA-146

TRIMMER & COIL ASSEMBLY SA-147

TRIMMER & COIL ASSEMBLY SA-148

TRIMMER & COIL ASSEMBLY SA-149

TRIMMER & COIL ASSEMBLY SA-150

Alignment, Tuner

ANDREA RADIO CORP.

MODELS 1E6, 2E6
Chassis PE6L, PE6S
MODELS 630, 631
Chassis PUE6L, PUE6S

Andrea Radio

STANDARD TUNING

AC Model **2-E-6**

(Chassis Numbers PE6L and PE6S)

LONG WAVE TUNING

AC Model **1-E-6**

SERVICE DATA

LONG WAVE TUNING

AC Model	1-E-6	AC-DC Model	631	AC Model	2-E-6	AC-DC Model	630
12.5-39.5 m.		24-7.6 mc.		12.5-39.5 m.		24-7.6 mc.	
38.5-133 m.		7.8-2.25 mc.		38.5-133 m.		7.8-2.25 mc.	
179-579 m.		1720-520 kc.		179-579 m.		1720-520 kc.	
720-2060 m.		415-146 kc.					

Universal Voltage Taps: AC models have taps for 100-120, 115-135, 140-160, 210-230, and 240-260 volts. AC-DC models have taps for 95-110, 110-130, 140-160, 210-230, and 240-260 volts. **AC Frequency:** AC models operate on 50-60 cycles. AC-DC models operate on 40-60 cycles.

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 21,500 kc., and the receiver to 21.5 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 21,500 kc. and tune the receiver slowly from 20,000 to 22,500 kc. Two signals should be heard, 940 kc. apart. One will be lower in frequency than 21,500 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 21,500 kc to about 22,500 kc.

A signal will be heard near 22,500 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.

"1" 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 1 position, and adjust the dial to 6 mc. Following the procedure just described, adjust the 1 band oscillator shunt trimmer for maximum signal response. Next, adjust the 1 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 1 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 200 m. 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 500 m. 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.

"L" BAND ALIGNMENT

Models 1-E-6 and 631, as well as chassis PE6L and PUE6L, have the long wave band also, as indicated by "L" on the wave band switch.

Connect the high-potential lead from the generator in series with a .1 mfd. condenser to the grid of the 6K8 tube. Set the generator at 150 kc., and the receiver at 2,000 m. Turn the wave band switch to the L position. Adjust the L band series oscillator trimmer for maximum response. This adjustment is required because of the wide frequency range obtained by adjusting this series oscillator trimmer. Due to this wide change in frequency, it is possible that a response will be obtained at several points, but the correct setting is indicated by maximum response.

Next, set the generator at 400 kc. and the receiver at 750 m., and adjust the L band oscillator shunt trimmer for maximum response. When this has been done, it is necessary to reset the generator at 150 kc., the receiver at 2,000 m., and to readjust the L band series oscillator trimmer in accordance with the preceding instructions.

Now, set the generator at 400 kc., the receiver at 750 m., and repeat the adjustment of the L band oscillator shunt trimmer for maximum response.

Without changing the settings of the generator and receiver, remove the generator lead from the grid of the 6K8, replace the .1 mfd. condenser with a .00025 mfd. condenser, and connect the lead to the antenna wire on the set. Adjust the L band antenna shunt trimmer for maximum response.

Next, set the generator at 150 kc., the receiver at 2,000 m., and align the L band series oscillator trimmer for maximum response. Be sure to rock the gang condenser for each adjustment of the trimmer.

Finally, set the generator at 400 kc., the receiver at 750 m., and readjust the L band antenna shunt trimmer. This completes the adjustment of the L band.

BIAS CELL

This receiver incorporates a bias cell in the grid of the audio tube, as shown in the wiring diagram. In case you remove the cell, handle it with the greatest care. Do not put your fingers across the terminals, for this will have the effect of short-circuiting the electrodes, and the voltage will not return to normal for several hours.

NEVER test this cell with an ordinary voltmeter. Since this a "no-current" cell, the only way to test it accurately is with a vacuum tube voltmeter. Always insert the cell in the mounting assembly so that the metal container (negative side) contacts the cell-holder pin with the black dot. This cell can be expected to render at least three years' service before it requires replacement.

SETTING BUTTON CONTROLS

Make a list of the stations: Set down the call letters of the six stations required, and put them in the order of their kilocycle ratings, the lowest at the top of the list. The kilocycle tuning ranges of the button controls are:

TOP BUTTON	No. 1	530 to 1,000 kc.
	No. 2	580 to 1,050 kc.
	No. 3	700 to 1,250 kc.
	No. 4	700 to 1,250 kc.
	No. 5	800 to 1,450 kc.
	No. 6	1,100 to 1,600 kc.

BOTTOM BUTTON

It is necessary, of course, to choose stations whose kilocycle ratings come within these button tuning ranges. The ranges given in the list above are conservative. Consequently, it may be possible to tune in a station which is just outside the range of any particular button control. For example, on button No. 3, although the range is shown as 700 to 1,250 kc., it may be possible to tune a station on 600 kc. or one on 1,300 kc.

MARKING THE BUTTONS

Remember the transparent disks: When you have made up your station list, locate the call letters on the station-call marker sheets, and punch them out carefully. If lettered markers are not provided for the stations you want, use the blank markers, and print the station letters on them.

Keeping the markers in the same order as your kilocycle list, press them into buttons, starting at the top. Do not attempt to glue them in place. Instead, put a transparent disk over each marker. That will hold it in place permanently. Use the end of a lead pencil to press the disks into position. In case you want to change a marker, you can pry it out with the point of a pin.

ADJUSTING THE CONTROLS

Do this with great care: Put the wave band switch in the M position, for dial tuning on the broadcast or medium band. Tune in the station whose call letters you have put on the top button. When you have adjusted the tuning accurately, turn the wave band switch to position A. Push in the top button until it locks, and turn the volume control to maximum.

When the set has been turned on for at least 10 minutes, so that it has become thoroughly warm, remove the rear dust cover from the cabinet. You will then see that the button controls are arranged in pairs, numbered 1 to 6. In each pair, the antenna adjustment (ANT.) is at the left, and the oscillator adjustment (OSC.) adjustment at the right.

Use a thin-blade screwdriver to adjust the screws. Do not force a thick blade into the slots. First adjust the No. 1 oscillator screw until you hear the station you tuned in previously with the dial. If the speaker breaks into a howl during this adjustment, turn the No. 1 antenna screw to the right or left until the howl stops. After you have an accurate setting of the oscillator screw, adjust the No. 1 antenna screw for maximum volume.

Finally, for a still sharper setting, cut the volume so that you can barely hear your station. If necessary, disconnect the antenna lead and twist it lightly around the insulated portion of the red wire. Again, adjust the No. 1 oscillator and antenna screws for maximum response from your station.

To check the accuracy of the settings, turn the wave band switch to position M. The station should sound practically the same whether the switch is in the A or M position. If there is considerable difference, the station was not tuned accurately with the dial or else the corresponding button controls were not set correctly.

Repeat the same routine for button No. 2, adjusting the No. 2 oscillator and antenna screws, and continue the process in the same way for the other controls.

To change any button to another station, if the station's kilocycle rating is within the range of the corresponding controls, it is only necessary to put in a new button marker, and to reset the controls in accordance with the preceding instructions.

FINAL ADJUSTMENT

After the preliminary adjustments have been made carefully and accurately, go over each one again, starting from the beginning, and follow the same order. This is essential, in order to assure absolute accuracy of the settings.

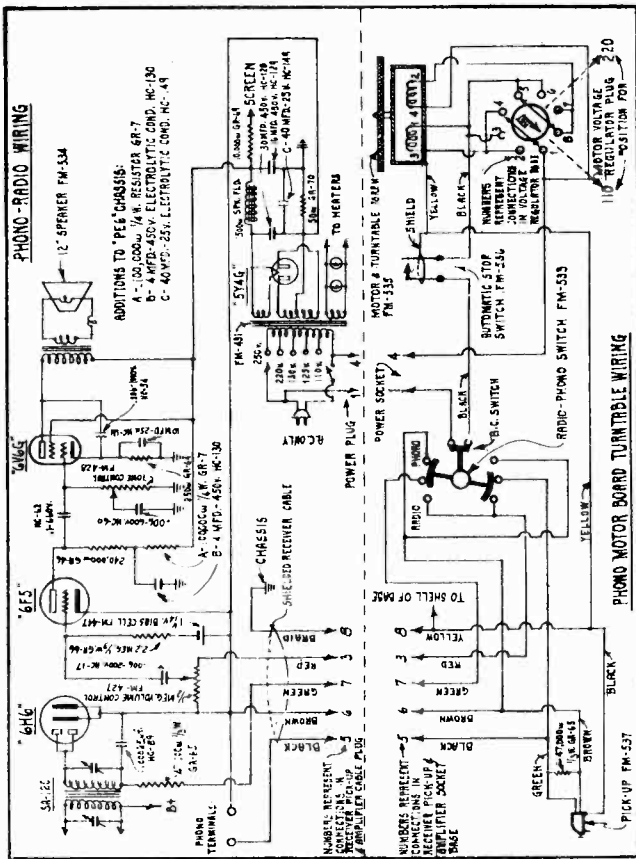
After all adjustments have been made, replace the dust cover on the rear of the cabinet, and make sure that the antenna is connected again.

IMPORTANT!

If you find it necessary to replace any part in this receiver, bear this in mind: In order to maintain the high performance standards of Andrea Radio receivers, the components parts on all Andrea models are held to exceedingly close tolerance limits. Furthermore, Andrea components are given the exclusive "Climate Sealed" treatment which protects them from all weather and temperature conditions. Consequently, standard Andrea Radio replacement parts must be used for all service work, for the substitution of ordinary, stock items will result in inferior performance.

MODEL 5E6
Chassis PE6L
MODEL 6E6
Chassis PE6S

ANDREA RADIO CORP.



FOR OTHER DATA, SEE PAGES COVERING
CHASSIS PE6L AND PE6S

TURNABLE SPEED:

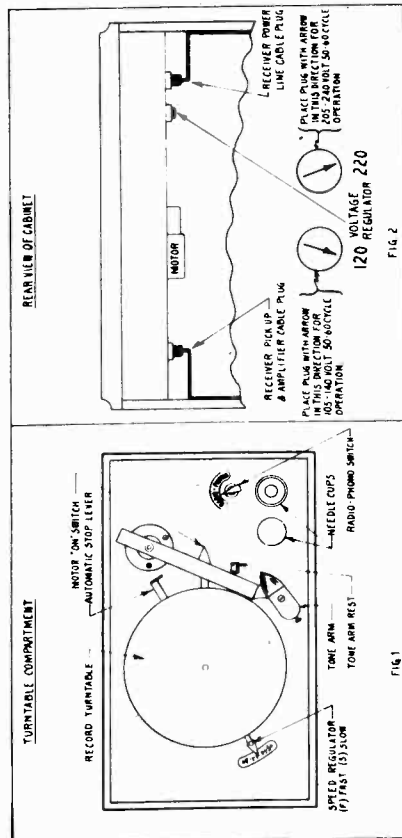
Recordings are made with the turntable moving at the rate of 78 revolutions per minute. Consequently, the best reproduction is obtained at that speed. Put the record on the turntable, with a slip of paper part way under it so that the paper can be used as a revolution counter. Then adjust the speed control, fast or slow, until the turntable revolves 78 times each minute.

AUTOMATIC STOP

Then the radio-phono switch is in the PHONO position, the current is connected to the motor, but it still can be cut off by the upright automatic stop lever that extends from beneath the turntable, or the motor can be turned on by the flat lever which projects from under the turntable. The small upright lever, marked "Automatic Stop", Fig. 1, will turn the motor off when the electric pick-up needle enters the eccentric groove at the end of the record. As this occurs, the tone arm swings against the lever thereby automatically releasing the power switch.

PHONOGRAPH NEEDLES:

Although various types of needles are sold for use in phonographs only the standard size loud or medium needles are recommended. Special needles may be entirely unsuited for use on this machine, and may result in loss of tone quality. There is a wedge-shaped groove under the head of the pick-up to direct the needle into the mounting hole. When you become acquainted with the use of this needle guide, you will find it a very easy matter to change needles quickly.



INSTRUCTIONS FOR INSTALLING AND OPERATING ANDREA AC PHONOGRAPH MODELS
MODELS 5-E-6 AND 6-E-6

WARNING!

For protection in shipping, the radio chassis of this combination is bolted tightly to the shelf on which it is mounted. Before connecting this instrument to the power line, loosen the four mounting bolts, located under the shelf by turning them out about 6 turns, in order that the chassis can float freely on the shock-absorbing strips. Unless this is done, objectionable noises may be set up in the loud speaker.

MOTOR VOLTAGE:

Andrea phono-graph combinations are connected at the factory for use on 205-240 volts, 50-60 cycles. Under the mounting shelf there is a socket with a plug, shown in Fig. 2. Then the arrow on the plug points toward 120 volts, the motor can be used on 105 to 140 volts AC. When the arrow points toward 220 volts, the motor can be used on 205 to 240 volts, 50-60 cycles. To change the connections, remove this motor-voltage regulator plug, and turn it so that the arrow points toward the voltage required, and insert the plug again.

RECEIVER VOLTAGE:

Note that the motor voltage regulator plug does not control the radio receiver. Therefore, you must be sure to have the service man check the line voltage tap on the radio receiver power transformer.

RADIO-PHONOGRAPH SWITCH:

Fig. 1 shows the arrangement of the phono-graph turntable controls. The radio-phono-graph switch, when in the RADIO position, connects the speaker for radio reception. When this switch is turned to the PHONO position, current is connected to the turntable motor, and the pick-up and the speaker are connected for reproducing phono-graph records.

VOLUME & TONE CONTROL:

The volume control and tone control on the front of the cabinet regulate both the radio and the phono-graph.

ANDREA RADIO CORP.

MODEL 1E8, 3E8, 5E8, 7E8, 9E8, Chassis PE8L MODEL 2E8, 4E8, 6E8, 8E8, 10E8, Chassis PE8S Schematic, Coils, Trimmers, Alignment, Data, Tuner, Parts

FOR ALIGNMENT, SETTING PUSH BUTTONS, ETC. SEE MODELS 1580, 51, 53, ETC. CHASSIS NOS PUE-1, PUE-S.

BAND SWITCH

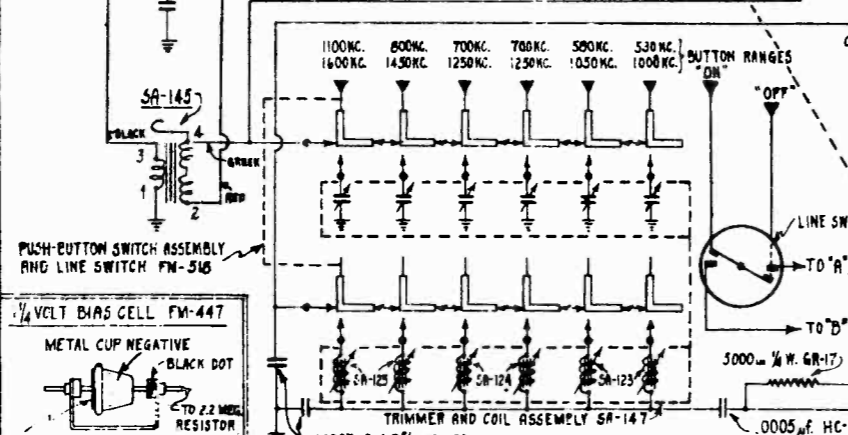
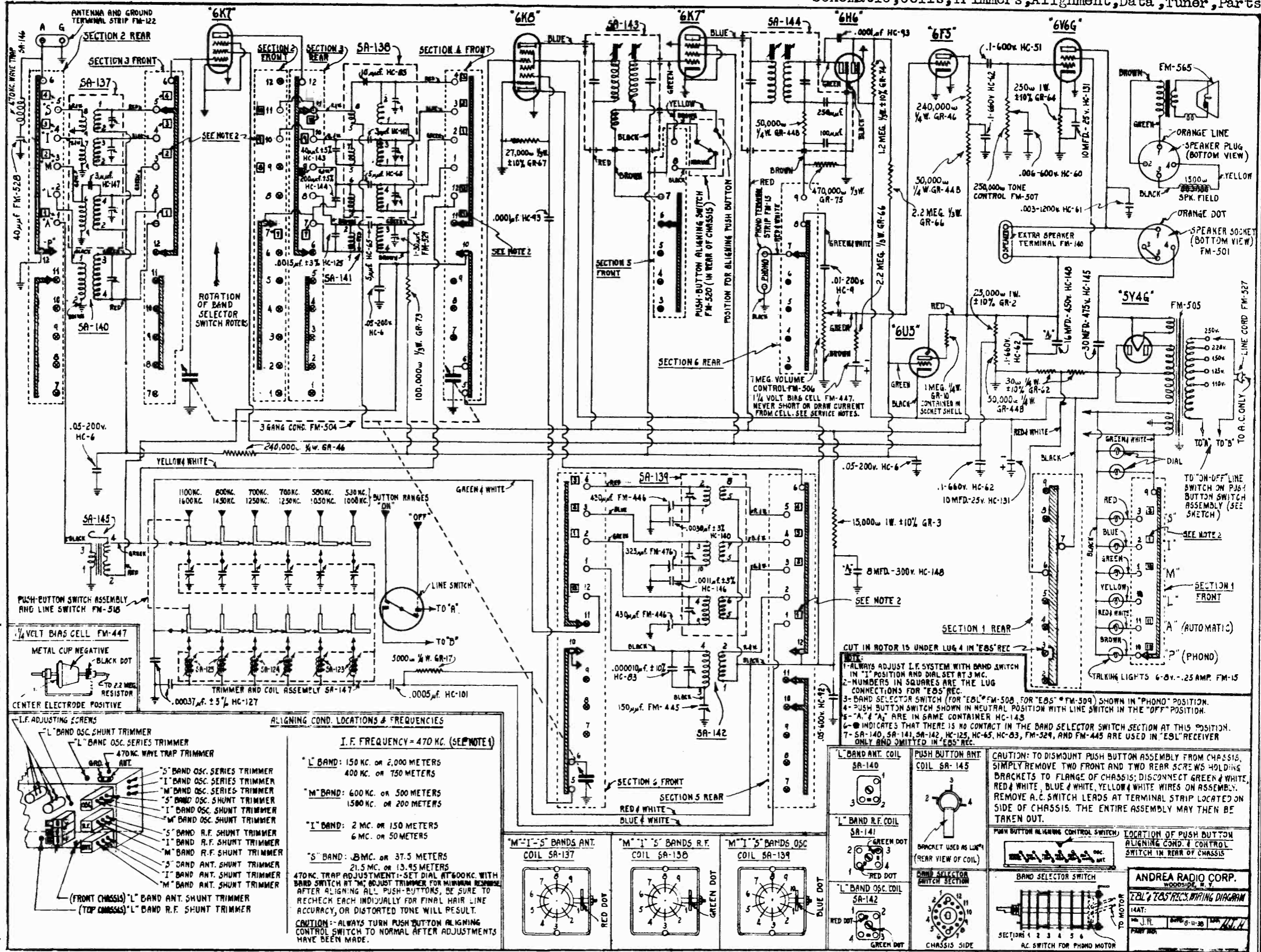
Band switch controls button tuning, manual tuning, and phonograph: The right hand, outside knob on the Standard Tuning or Long Wave Tuning sets is marked:

- Standard Tuning S I M A P Long Wave Tuning I M L A P Short Wave I Intermediate Short Waves M Broadcast or Medium Waves L Long Waves A Automatic button tuning on broadcast or medium waves P Phonograph.

Automatic push button tuning operates only on the broadcast or medium wave band when the switch is in the "A" position. Manual tuning must be used for the other wave bands. On the table models and consoles, the phonograph pick-up terminals are connected to the high-fidelity audio-amplifier when the band switch is in the "P" position. On the combination models, turning the band switch to the P position turns on the current for the phonograph motor and connects the pick-up to the amplifier.

- AC COMBINATION MODELS Standard 8-E-8 Long Wave 7-E-8 Tuning AC AUTOMATIC COMBINATIONS Standard 10-E-8 Long Wave 9-E-8 Tuning Voltage Taps: Line voltage switch provided for operation on 100-120, 115-135, 140-160, 210-230, and 240-260 volts. AC Frequency: Power transformer designed for 50-60 cycles.

- AC Model 1-E-8 Long Wave Tuning AC Model 2-E-8 Standard Tuning Standard 4-E-8 Long Wave 3-E-8 Tuning AC CONSOLE MODELS Standard 6-E-8 Long Wave 5-E-8 Tuning (Chassis Numbers PE8L and PE8S)

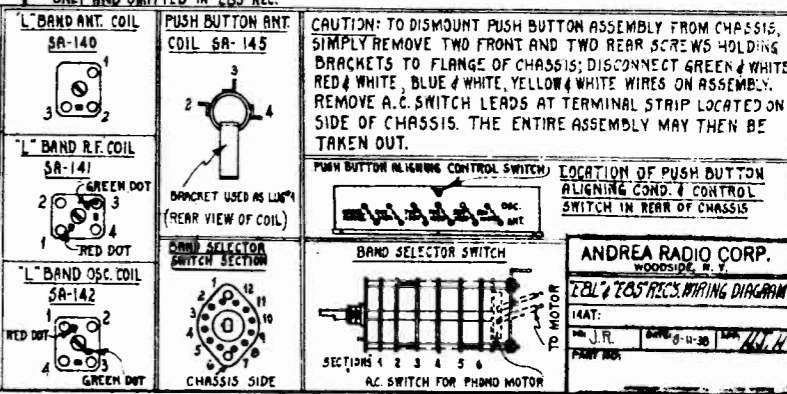


ALIGNING COND. LOCATIONS & FREQUENCIES I.F. FREQUENCY = 470 KC. (SEE NOTE 1)

"L" BAND: 150 KC. OR 2,000 METERS 400 KC. OR 750 METERS
"M" BAND: 600 KC. OR 500 METERS 1500 KC. OR 200 METERS
"I" BAND: 2 MC. OR 150 METERS 6 MC. OR 50 METERS
"S" BAND: 8 MC. OR 37.5 METERS 21.5 MC. OR 13.95 METERS

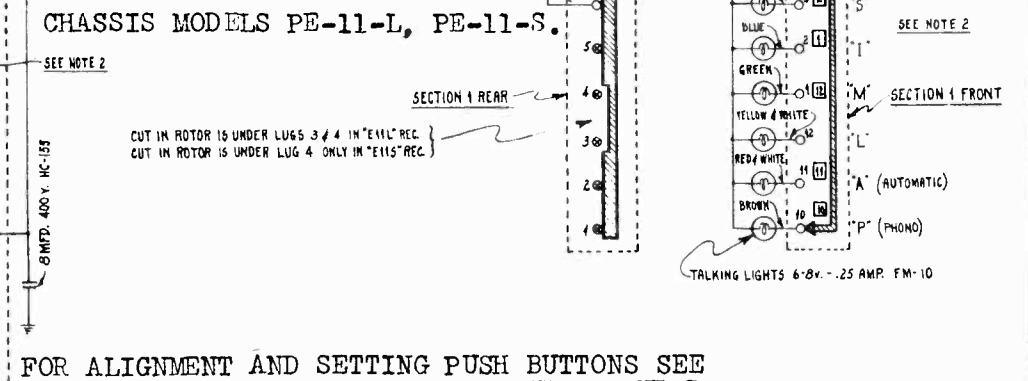
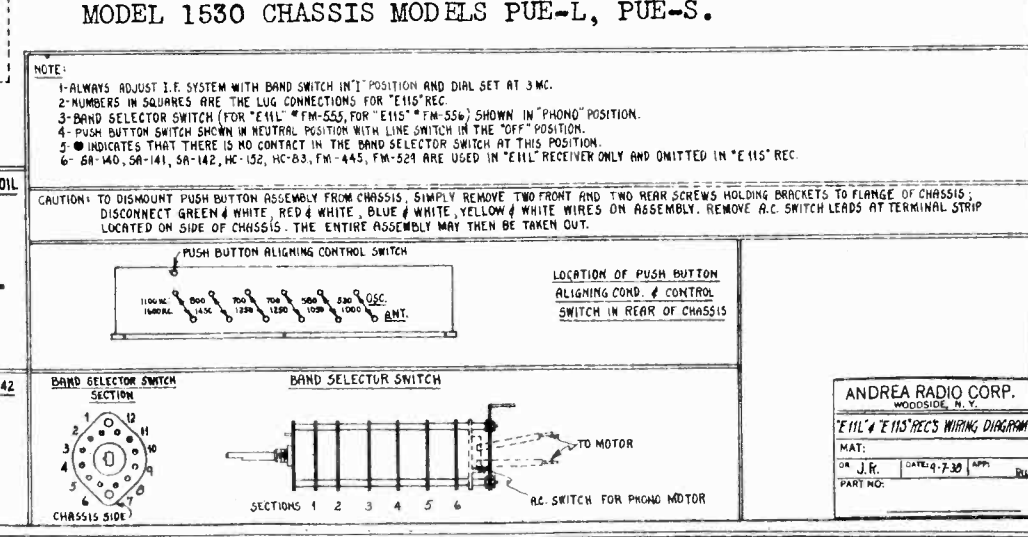
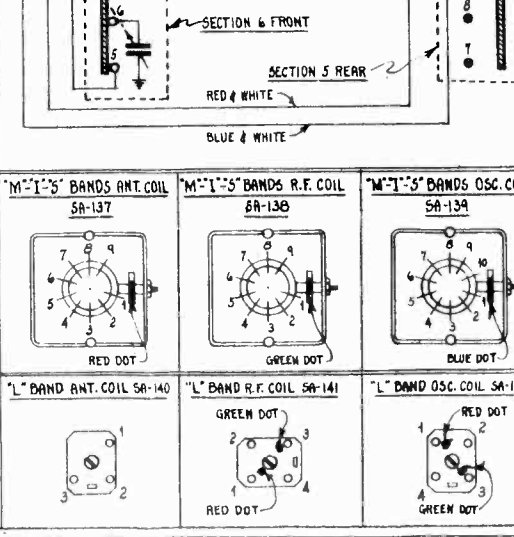
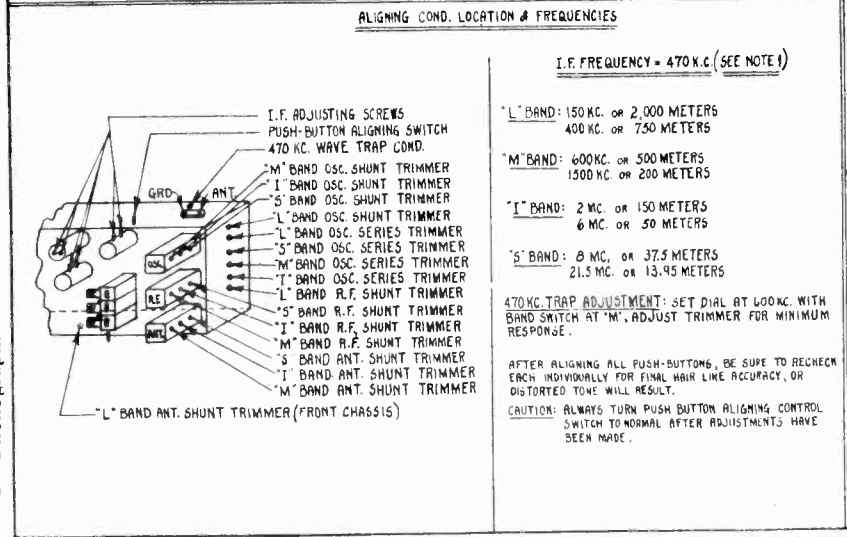
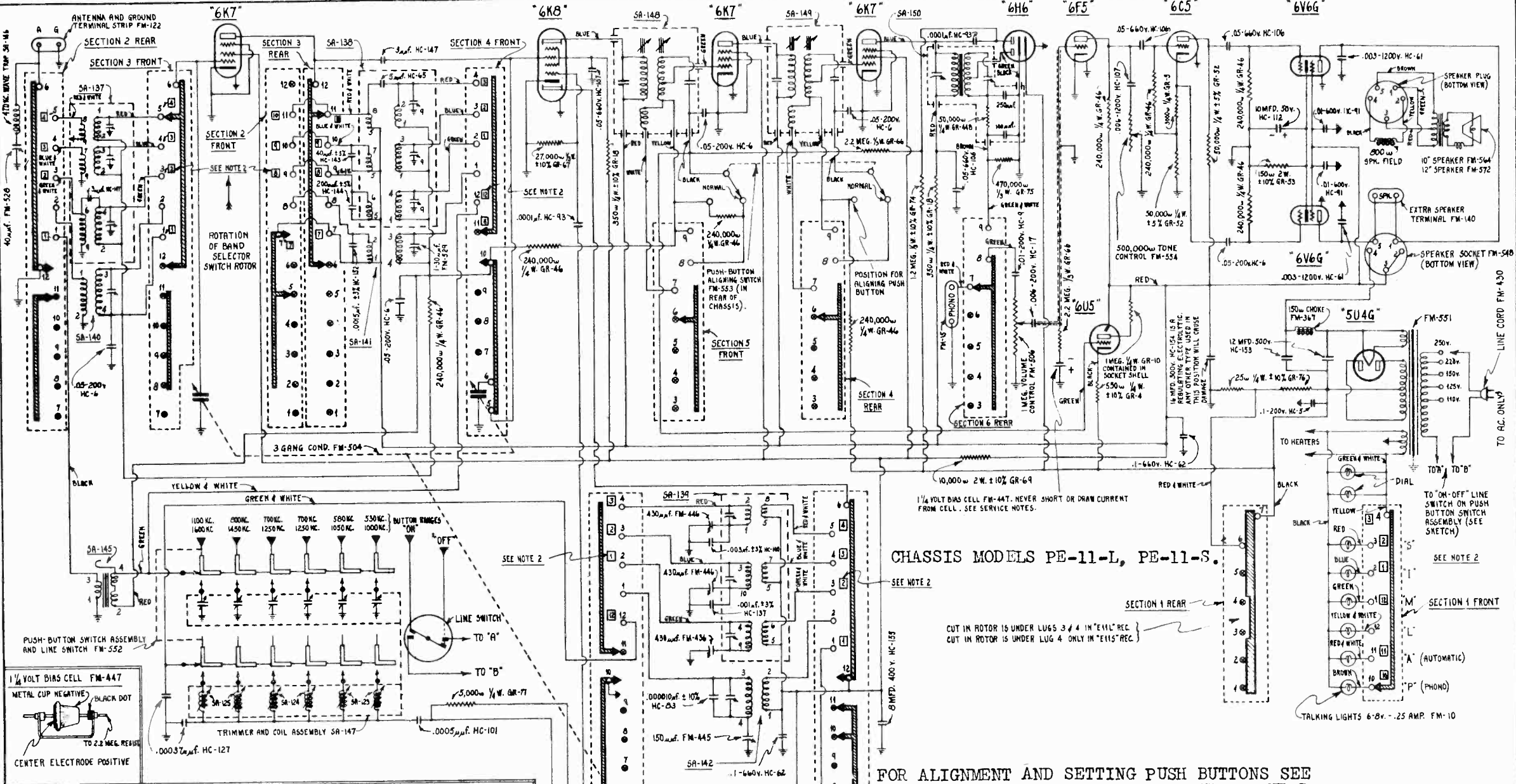
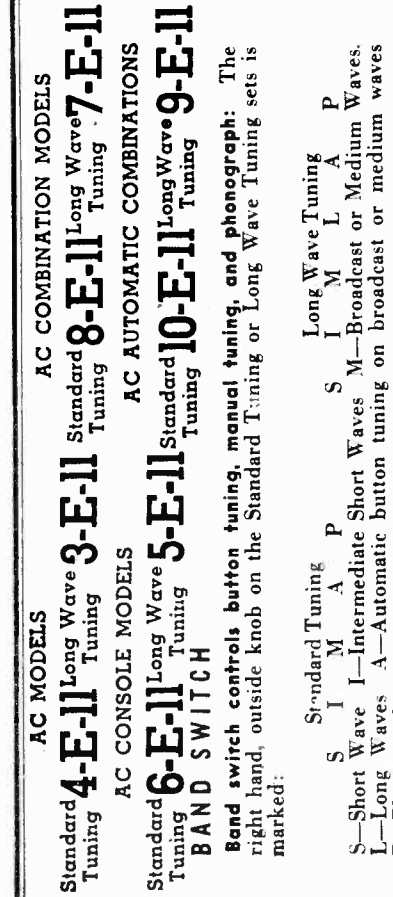
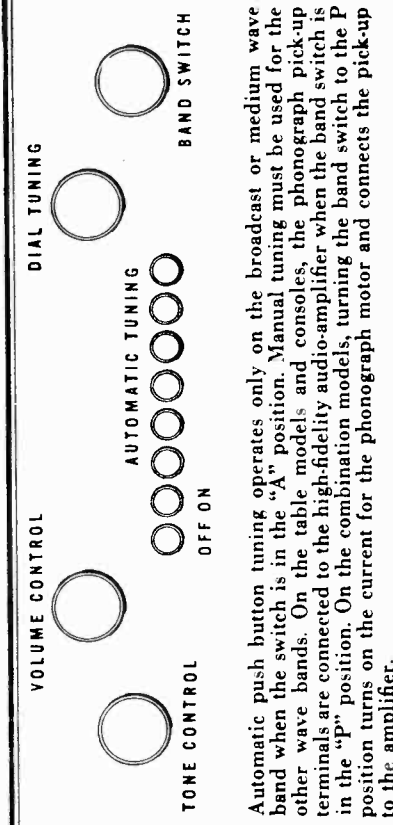
470KC. TRAP ADJUSTMENT: SET DIAL AT 600KC. WITH BAND SWITCH AT "M", ADJUST TRIMMER FOR MINIMUM RESPONSE. AFTER ALIGNING ALL PUSH-BUTTONS, BE SURE TO RECHECK EACH INDIVIDUALLY FOR FINAL HAIR LINE ACCURACY, OR DISTORTED TONE WILL RESULT. CAUTION - ALWAYS TURN PUSH BUTTON ALIGNING CONTROL SWITCH TO NORMAL AFTER ADJUSTMENTS HAVE BEEN MADE.

- NOTE: 1- ALWAYS ADJUST I.F. SYSTEM WITH BAND SWITCH IN "I" POSITION AND DIAL SET AT 3 MC. 2- NUMBERS IN SQUARES ARE THE LUG CONNECTIONS FOR "E8S" REC. 3- BAND SELECTOR SWITCH (FOR "E8L" FM-500, FOR "E8S" FM-509 SHOWN IN "PHONO" POSITION. 4- BAND SELECTOR SWITCH SHOWN IN NEUTRAL POSITION WITH LINE SWITCH IN THE "OFF" POSITION. 5- "A", "M", "P" ARE IN SAME CONTAINER HC-143 6- ● INDICATES THAT THERE IS NO CONTACT IN THE BAND SELECTOR SWITCH SECTION AT THIS POSITION. 7- SA-140, SA-141, SA-142, HC-125, HC-65, HC-63, FM-529, AND FM-445 ARE USED IN "E8L" RECEIVER ONLY AND OMITTED IN "E8S" REC.



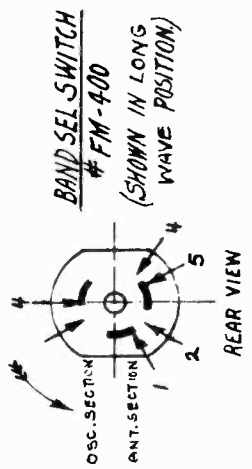
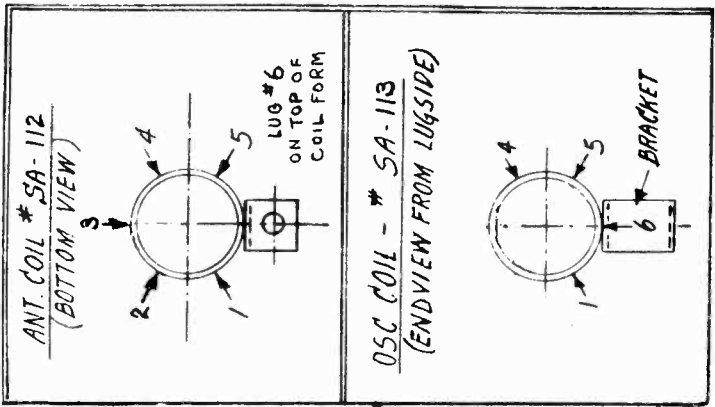
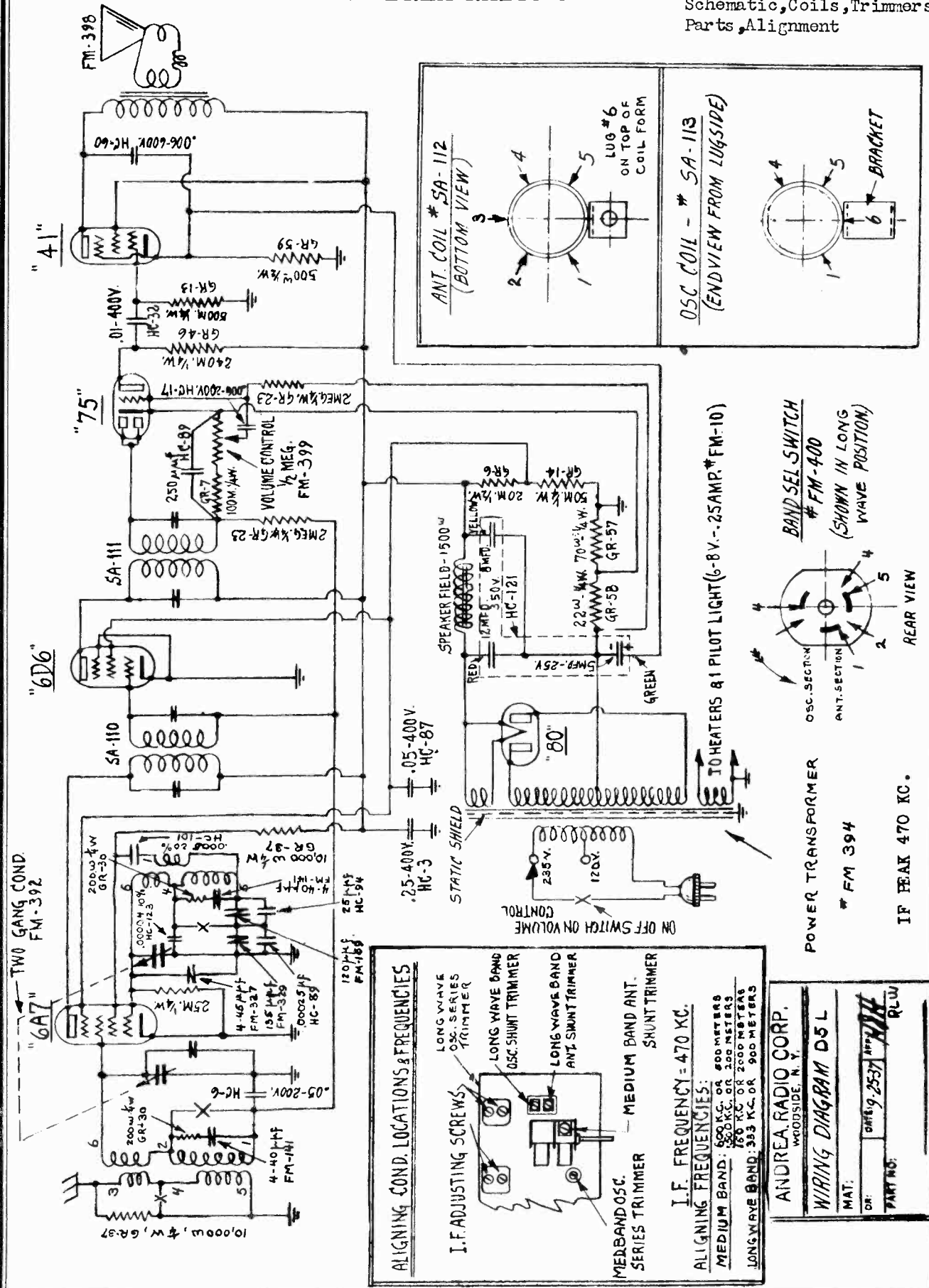
MODELS 3E11, 5E11, 7E11, 9E11, Chassis PE11L
MODELS 4E11, 6E11, 8E11, 10E11, Chassis PE11S
Schematic, Coils, Trimmers, Alignment, Tuner, Parts

ANDREA RADIO CORP.



ANDREA RADIO CORP.

Chassis D5L
Schematic, Coils, Trimmers
Parts, Alignment



ALIGNING COND. LOCATIONS & FREQUENCIES

I.F. ADJUSTING SCREWS

- LONG WAVE OSC. SERIES TRIMMER
- LONG WAVE BAND OSC. SHUNT TRIMMER
- LONG WAVE BAND ANT. SHUNT TRIMMER
- MED. BAND OSC. SERIES TRIMMER
- MEDIUM BAND ANT. SHUNT TRIMMER

I.F. FREQUENCY = 470 KC.

ALIGNING FREQUENCIES:

MEDIUM BAND: 500 KC. OR 500 METERS
160 KC. OR 200 METERS

LONG WAVE BAND: 355 KC. OR 900 METERS

ANDREA RADIO CORP.
WOODSIDE, N. Y.

WIRING DIAGRAM D5L

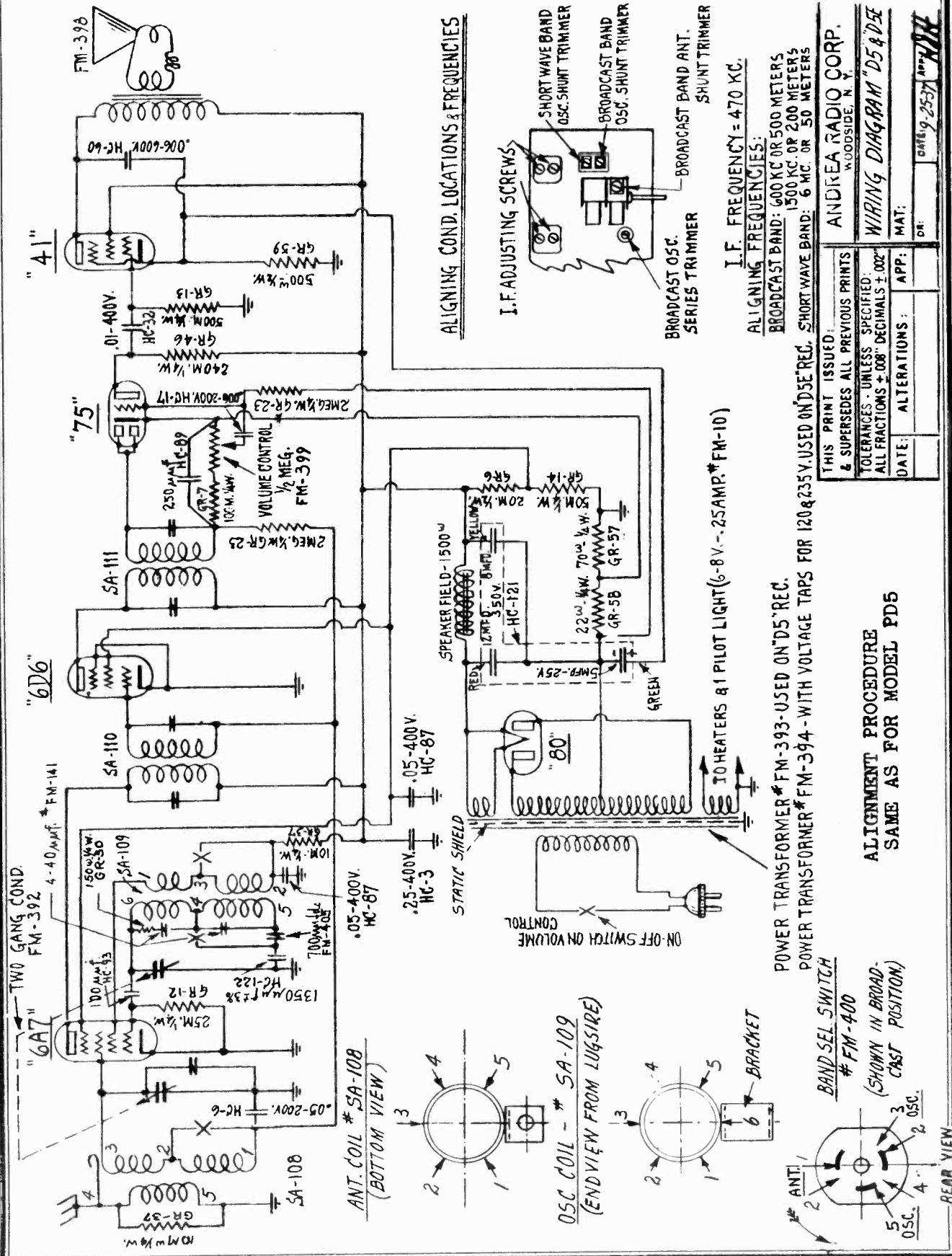
MAT. _____

DR. _____

PART NO. _____

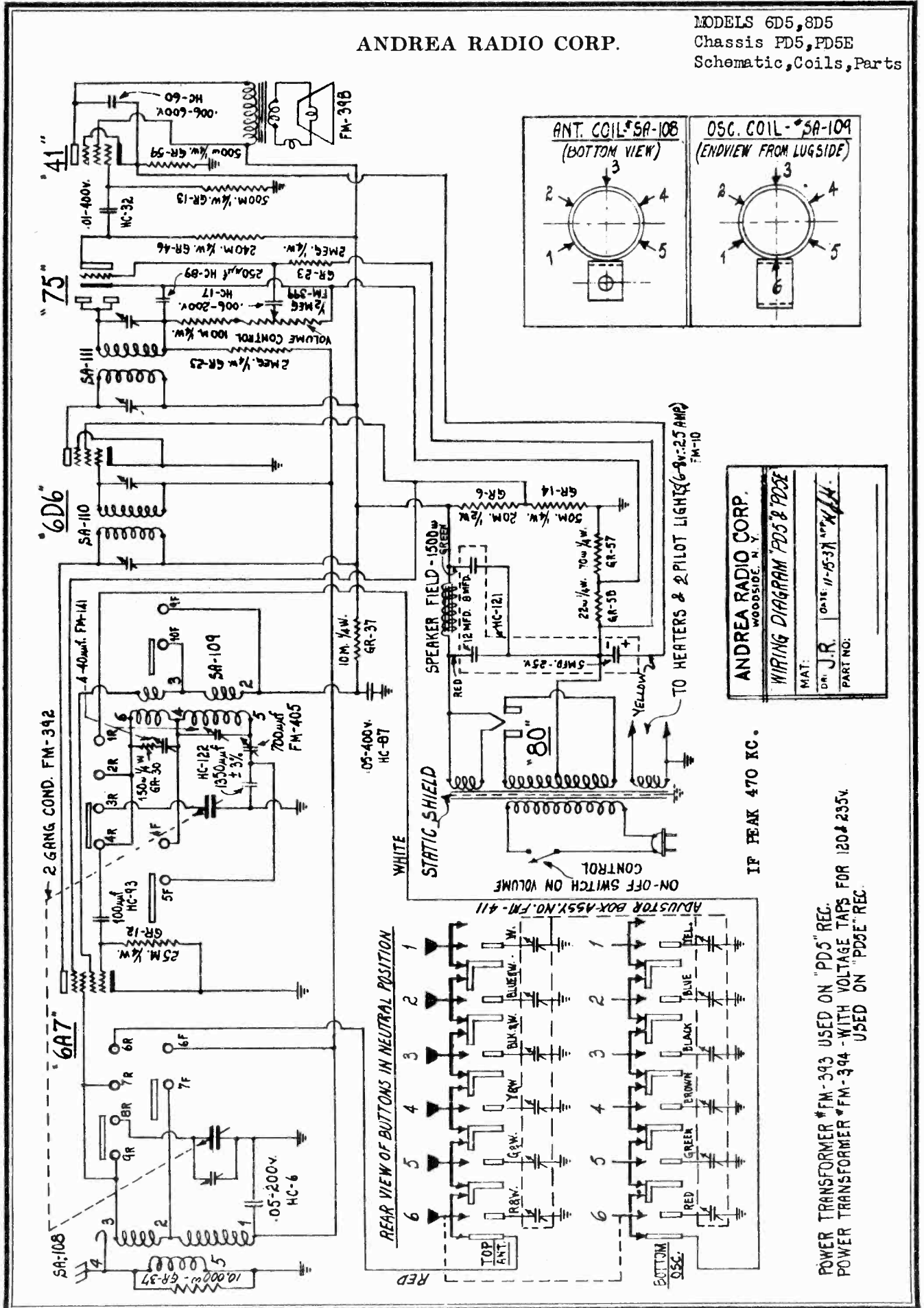
MODELS 2D5, 3D5, 4D5
 Chassis D5, D5E, D5S
 Schematic, Coils, Parts
 Alignment

ANDREA RADIO CORP.



ANDREA RADIO CORP.

MODELS 6D5, 8D5
Chassis PD5, PD5E
Schematic, Coils, Parts



ANDREA RADIO CORP.
WOODSIDE, N. Y.

WIRING DIAGRAM PD5 & PD5E

MAT: _____
 DR. J.R. 0-15-11-53K APP. H.H.
 PART NO: _____

IF PEAK 470 KC.

POWER TRANSFORMER #FM-393 USED ON "PD5" REC.
POWER TRANSFORMER #FM-394 - WITH VOLTAGE TAPS FOR 120 & 255V
USED ON "PD5E" REC.

MODELS 2D5, 3D5, 4D5, 6D5, 8D5

ANDREA RADIO CORP.

Alignment, Trimmers

ALIGNMENT PROCEDURES

MODEL 6D5 - CHASSIS PD5
MODEL 8D5 - CHASSIS PD5E

MODELS 2D5, 3D5, 4D5 - CHASSIS D5, D5E, D5S

Accuracy can only be obtained when small input signals from the ALL WAVE Signal Generator to the receiver are used. An output meter for visual signal indication must also be used. All aligning frequencies and locations are shown on circuit diagram.

- A - Connect high potential output lead of signal generator to a .05 mfd. condenser; connect other side of condenser to grid of 6A7 tube.
- B - Connect ground of generator to receiver ground.
- C - Turn wave band switch to Broadcast position. (Left hand knob turned to right)

- D - Adjust both trimmers on the 1st and 2nd I.F. transformers for maximum output, using a copper oxide output meter connected across the voice coil.
- E - Retrim each I.F. transformer condenser carefully for maximum output.

BROADCAST ALIGNMENT "M" BAND

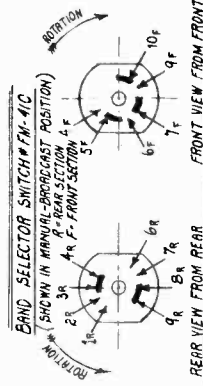
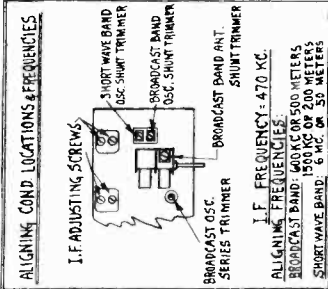
- A - Turn station selector knob till gang condenser plates are all in.
- B - Scale pointer position must be flush with bottom of outside scale line marked "0", or calibrated scale will read incorrectly.
- C - Replace .05 mfd. condenser with .00025 mfd. (.250 mmf.). Set generator to 1500 KC along with receiver pointer on 1500 KC of scale.
- D - Adjust Broadcast oscillator shunt trimmer carefully until signal is heard. Thereafter, never touch this trimmer. Should signal be heard, trimmer need not be adjusted.
- E - Adjust Broadcast Antenna shunt trimmer on gang condenser for maximum output deflection.
- F - Set receiver dial at 600 KC, along with signal generator.
- G - Adjust Broadcast oscillator series trimmer (see diagram), while turning the station selector knob back and forth about the signal for each change in trimmer setting. If the gang condenser is not turned for each trimmer adjustment, false alignment will result.
- H - Set generator for 1500 KC, and tune in signal on receiver. Retrim antenna shunt trimmer carefully for maximum output.

SHORT WAVE BAND "S" SCALE ALIGNMENT

- A - Replace .00025 mfd. condenser with 400 ohm resistor. Set generator to 6000 KC (6 megacycles). Turn band selector knob to right and tune in signal.
- B - Adjust short wave band "oscillator" shunt trimmer while turning the station selector knob back and forth about the signal for each trimmer adjustment, until maximum output deflection on the meter is obtained. If the gang condenser is not rotated for each trimmer adjustment, false alignment and weak performance will result.

AUTOMATIC STATION ADJUSTOR BOX
Audible methods of alignment must never be used. "M" ANT. LOCATED ON REAR OF CHASSIS
No other adjustments on this band are required.

ANT.	OSC.
①	530 TO 780 KC
②	630 TO 850 KC
③	640 TO 875 KC
④	650 TO 1010 KC
⑤	800 TO 1300 KC
⑥	1100 TO 1600 KC



ALIGNMENT INSTRUCTIONS

MODELS 2D5, 3D5, 4D5 - CHASSIS D5L

Accuracy can only be obtained when small input signals from the ALL WAVE signal generator to the receiver are used. An output meter for visual signal indication must also be used. All aligning frequencies and location are shown on circuit diagram.

470 K.C. I.F. AMPLIFIER ALIGNMENT

- A - Connect high potential output lead of signal generator to an .05 mfd. condenser, connect other side of condenser to grid of 6A7 tube.
- B - Turn wave band switch to medium band position. (Right hand knob turned to right.)
- C - Connect ground of generator to receiver ground.
- D - Adjust both trimmers on the 1st and 2nd I.F. transformers for maximum output, using a copper oxide output meter connected across the voice coil.
- E - Retrim each I.F. transformer condenser carefully for maximum output.

MEDIUM BAND ALIGNMENT "M" SCALE

- A - Turn station selector knob till gang condenser plates are all in.
- B - Scale pointer position must be flush with bottom of outside scale line marked "0" or calibrated scale will read incorrectly.
- C - Replace .05 mfd. condenser with .00025 mfd. (.250 mmf.). Set generator to 1500 KC (200 meters) along with receiver pointer.
- D - Adjust medium band oscillator shunt trimmer carefully until signal is heard. Thereafter never touch this trimmer. Should signal be heard, trimmer need not be adjusted.
- E - Adjust medium band antenna shunt trimmer on gang condenser for maximum output deflection.
- F - Set receiver dial at 500 meters (600 KC) along with signal generator.
- G - Adjust medium band oscillator series trimmer (see diagram) while turning the station selector knob back and forth about the signal for each change in trimmer setting. If the gang condenser is not turned for each trimmer adjustment, false alignment will result.
- H - Reset generator for 1500 KC (200 meters) and tune in signal on receiver. Retrim antenna shunt trimmer carefully for maximum output.

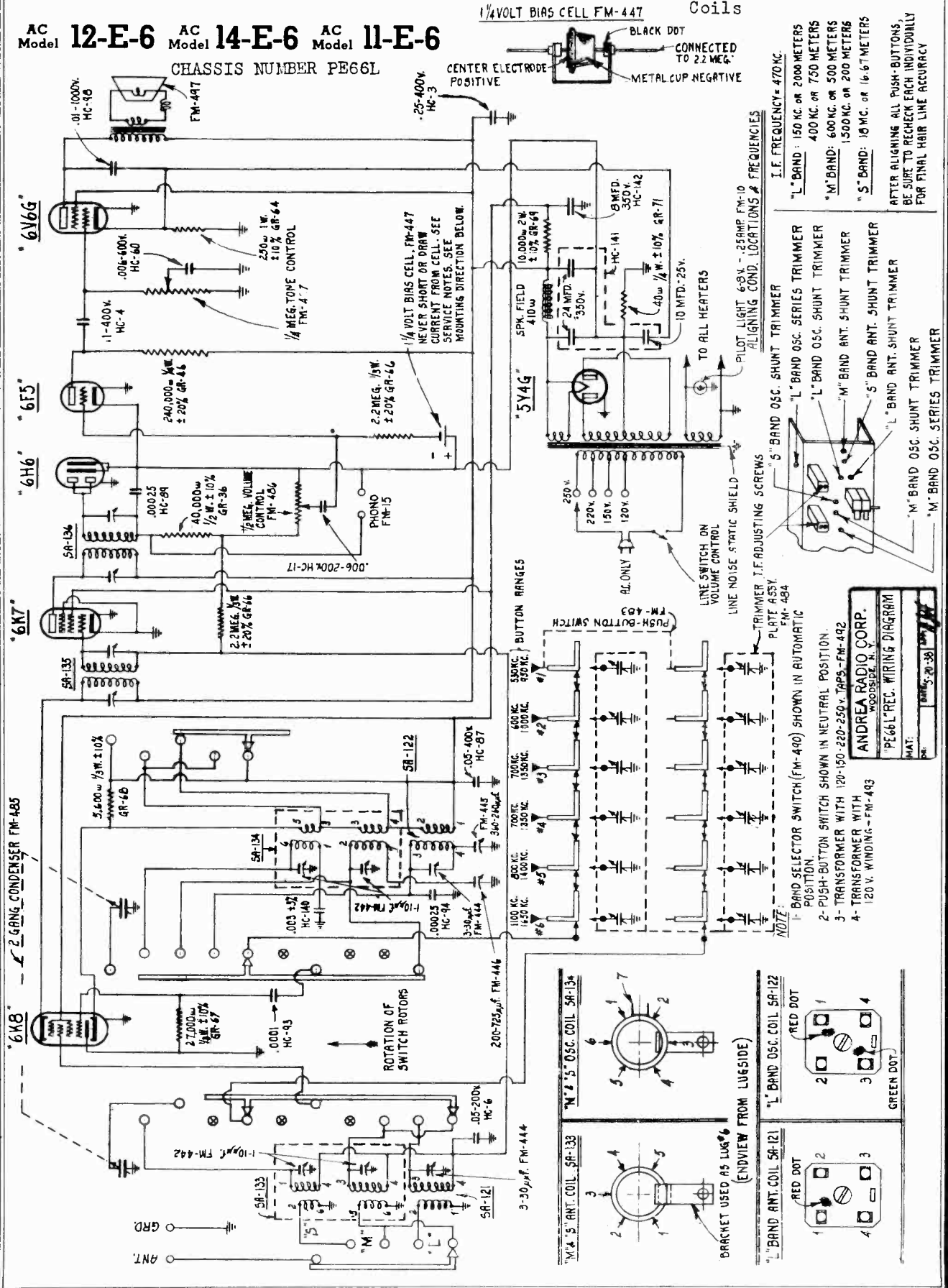
LONG WAVE BAND ALIGNMENT "L" SCALE

- A - Set signal generator for 150 KC (2000 meters) and connect generator high potential lead in series with .05 mfd. condenser to grid of 6A7 tube.
- B - Set receiver dial to 2000 meters.
- C - Adjust L.W. series oscillator shunt trimmer until signal reaches maximum deflection on the output meter.
- D - Set generator and receiver dial to 335 KC (900 meters), and adjust L.W. oscillator shunt trimmer until the signal reaches maximum deflection in the output meter.
- E - Repeat B and C
- F - Repeat D
- G - Remove generator lead from grid of 6A7. Replace .05 mfd. condenser with a .00025 mfd. condenser and connect to antenna lead of receiver.
- H - Set generator and receiver dial to 333 K.C. (900 meters)
- I - Adjust antenna coil shunt trimmer for maximum deflection on the output meter.
- J - Set generator and receiver dial to 150 KC (2000 meters) and adjust L.W. oscillator series trimmer for maximum deflection while rotating dial slowly about signal.
- K - Repeat I

ANDREA RADIO CORP.

MODELS 11E6, 12E6, 14E6
 Chassis PE66L
 Schematic, Trimmers, Parts
 Coils

AC Model 12-E-6 AC Model 14-E-6 AC Model 11-E-6
 CHASSIS NUMBER PE66L



1/4 VOLT BIAS CELL FM-447
 CENTER ELECTRODE POSITIVE
 BLACK DOT CONNECTED TO 2.2 MEG.
 METAL CUP NEGATIVE

I.F. FREQUENCY = 470 KC.
 "L" BAND: 150 KC. OR 200 METERS
 400 KC. OR 750 METERS
 "M" BAND: 600 KC. OR 500 METERS
 1500 KC. OR 200 METERS
 "S" BAND: 10 MC. OR 16.67 METERS

PILOT LIGHT 6-8V. -25AMP FM-10
 ALIGNING COND. LOCATIONS & FREQUENCIES

"S" BAND OSC. SHUNT TRIMMER
 "L" BAND OSC. SERIES TRIMMER
 "L" BAND OSC. SHUNT TRIMMER
 "M" BAND ANT. SHUNT TRIMMER
 "S" BAND ANT. SHUNT TRIMMER
 "L" BAND ANT. SHUNT TRIMMER
 "M" BAND OSC. SERIES TRIMMER

NOTE:
 1- BAND SELECTOR SWITCH (FM-490) SHOWN IN AUTOMATIC POSITION.
 2- PUSH-BUTTON SWITCH SHOWN IN NEUTRAL POSITION.
 3- TRANSFORMER WITH 120-150-220-250V. TAPS-FM-492
 4- TRANSFORMER WITH 120 V. WINDING-FM-493

ANDREA RADIO CORP.
 WOODBRIDGE, N. Y.
 PART: PE66L REC. WIRING DIAGRAM
 DATE: 5-20-38

MODELS 11E6, 12E6, 14E6

Chassis PE66S

Schematic, Trimmers

Coils, Parts

ANDREA RADIO CORP.

The kilocycle tuning ranges of the button controls are:

TOP BUTTON		No. 1		530 to 950 kc.	
		No. 2		600 to 1,000 kc.	
		No. 3		700 to 1,350 kc.	
		No. 4		700 to 1,350 kc.	
BOTTOM		No. 5		800 to 1,400 kc.	
BUTTON		No. 6		1,100 to 1,650 kc.	

LONG WAVE TUNING

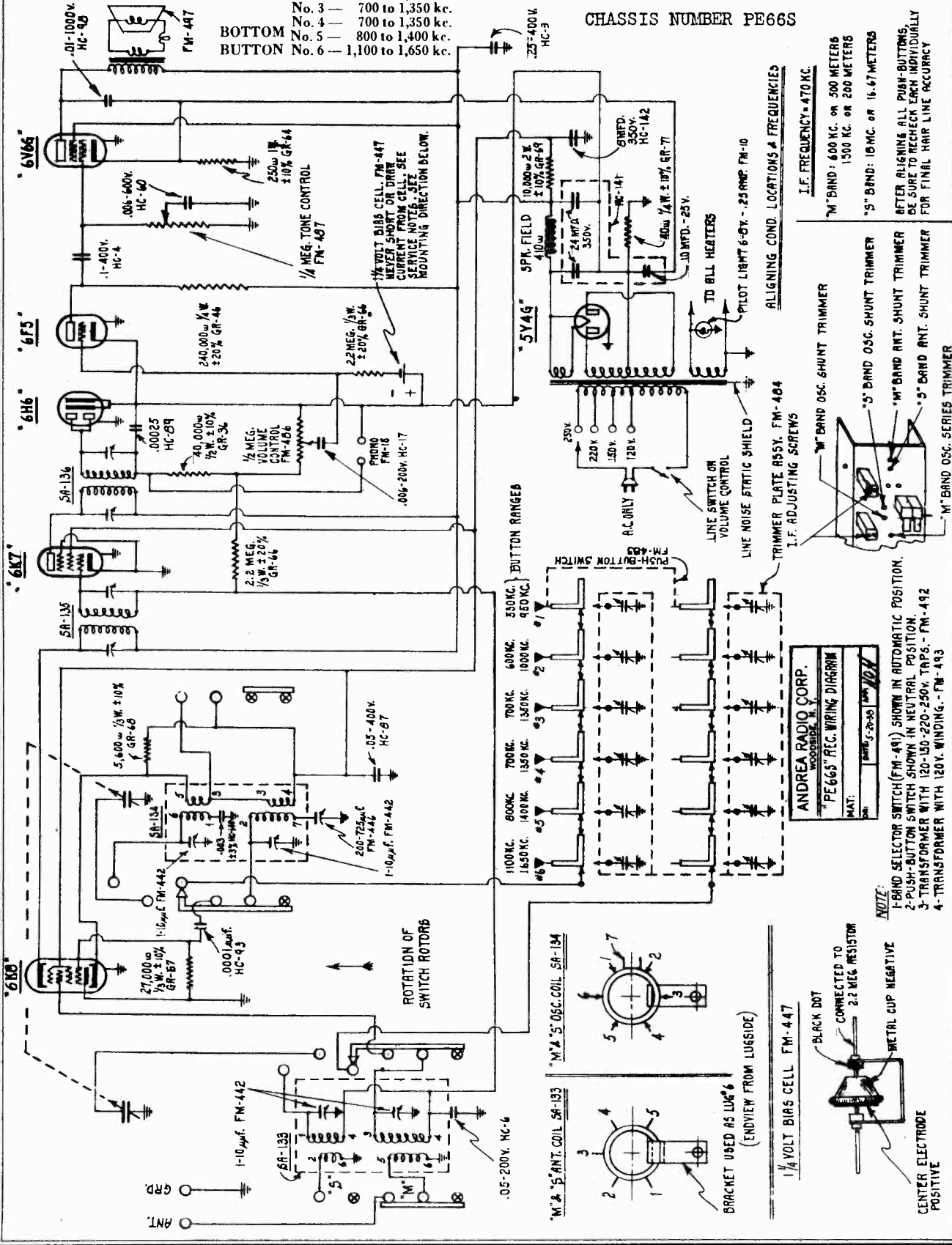
AC Model **11-E-6**

STANDARD TUNING

AC Model **12-E-6**

AC Model **14-E-6**

CHASSIS NUMBER PE66S



I.F. FREQUENCY = 470 KC
 *M BAND: 400 KC. OR 500 METERS
 1500 KC. OR 200 METERS
 *S BAND: 10 MC. OR 16.67 METERS

TRIMMER PLATE ASSY. FM-484
 *M BAND OSC. SHUNT TRIMMER
 *S BAND OSC. SHUNT TRIMMER
 *M BAND ANT. SHUNT TRIMMER
 *S BAND ANT. SHUNT TRIMMER
 *S BAND OSC. SERIES TRIMMER

ANDREA RADIO CORP.
 WOODSIDE, N. Y.
 PE 66S REC. WIRING DIAGRAM
 MAT: 3-20-48

NOTE:
 1-BAND SELECTOR SWITCH (FM-491) SHOWN IN AUTOMATIC POSITION.
 2-PUSH-BUTTON SWITCH SHOWN IN NEUTRAL POSITION.
 3-TRANSFORMER WITH 120-150-220-250V. TAPS. - FM-492
 4-TRANSFORMER WITH 120V. WINDING. - FM-493

ANDREA RADIO CORP.

MODELS 11E6, 12E6, 14E6
Chassis PE66L, PE66S
Alignment, Notes

LONG WAVE TUNING

AC Model 11-E-6
(for use outside the U.S.A.)
164 m. to 51 m. 18,300 kc. to 5,900 kc.
174 m. to 578 m. 1,720 kc. to 520 kc.
720 m. to 2,080 m. 420 kc. to 145 kc.

STANDARD TUNING

AC Model 12-E-6 **AC Model 14-E-6**
(for use outside the U.S.A.) (for use in U.S.A.)
164 m. to 51 m. 18,300 kc. to 5,900 kc.
174 m. to 578 m. 1,720 kc. to 520 kc.

Line Voltages: Models 11-E-6 and 12-E-6 have taps for operation on 110-130, 140-160, 210-230 and 240-260 volts, 50-60 cycles. The model for use in the U.S.A. operates on 110-130 volts, 60 cycles only.

(Chassis Numbers PE66L and PE66S)

SERVICE DATA

FOR SETTING PUSH BUTTONS, NOTES ON BIAS CELL,
SEE MODELS 1530, 1, 3, etc. CHASSIS NO. PUE-L, -S.

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.

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 150, 400, 470, 600, 1,500 and 18,000 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 on the scale before you start alignment adjustments. Otherwise, inaccuracies will be introduced. When the variable plates are completely closed, the pointer should be set exactly on the small gold scratch lines which appear on the right and left top side of the tuning scale.

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.

Alignment can be carried out on these models at any band without affecting any of the other bands.

ALIGNMENT INSTRUCTIONS

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 18,000 kc., and the receiver to 18 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 18,000 kc. and tune the receiver from 17,500 to 18,500 kc. Two signals should be heard, 940 kc. apart. One will be lower in frequency than 18,000 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 18,000 kc. to about 20,000 kc.

A signal will be heard near 19,000 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.

"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 200 m. 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 500 m. 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.

"L" BAND ALIGNMENT

Mode 11-E-6, chassis PE66L, have the long wave band also, as indicated by "L" on the wave band switch.

Connect the high-potential lead from the generator in series with a .1 mfd. condenser to the grid of the 6K8 tube. Set the generator at 150 kc. and the receiver at 2,000 m. Turn the wave band switch to the L position. Adjust the L band series oscillator trimmer for maximum response. This adjustment is required because of the wide frequency range obtained by adjusting this series oscillator trimmer. Due to this wide change in frequency, it is possible that a response will be obtained at several points, but the correct setting is indicated by maximum response.

Next, set the generator at 400 kc. and the receiver at 750 m., and adjust the L band oscillator shunt trimmer for maximum response. When this has been done, it is necessary to reset the generator at 150 kc., the receiver at 2,000 m., and to readjust the L band series oscillator trimmer in accordance with the preceding instructions.

Now, set the generator at 400 kc., the receiver at 750 m., and repeat the adjustment of the L band oscillator shunt trimmer for maximum response.

Without changing the settings of the generator and receiver, remove the generator lead from the grid of the 6K8, replace the .1 mfd. condenser with a .00025 mfd. condenser, and connect the lead to the antenna wire on the set. Adjust the L band antenna shunt trimmer for maximum response.

Next, set the generator at 150 kc., the receiver at 2,000 m., and align the L band series oscillator trimmer for maximum response. Be sure to rock the gang condenser for each adjustment of the trimmer.

Finally, set the generator at 400 kc., the receiver at 750 m., and readjust the L band antenna shunt trimmer. This completes the adjustment of the L band.

ADJUSTING THE CONTROLS

Do this with great care: Put the wave band switch in the M position, for dial tuning on the broadcast or medium band. Tune in the station whose call letters you have put on the top button. When you have adjusted the tuning accurately, turn the wave band switch to position A. Push in the top button until it locks, and turn the volume control to maximum.

Turn on the set, and let it run for at least 10 minutes, so that it will become thoroughly warm. You will see that the button controls are arranged in pairs, numbered 1 to 6. In each pair, the antenna adjustment (ANT.) is at the left, and the oscillator adjustment (OSC.) is at the right.

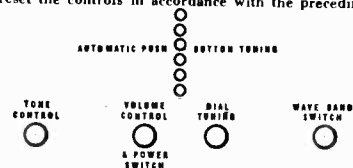
Use a thin-blade screwdriver to adjust the screws. Do not force a thick blade into the slots. First adjust the No. 1 oscillator screw until you hear the station you tuned in previously with the dial. If the speaker breaks into a howl during this adjustment, turn the No. 1 antenna screw to the right or left until the howl stops. After you have an accurate setting of the oscillator screw, adjust the No. 1 antenna screw for maximum volume.

To check the accuracy of the settings, turn the wave band switch to position M. The station should sound practically the same whether the switch is in the A or M position. If there is considerable difference, the station was not tuned accurately with the dial or else the corresponding button controls were not set correctly.

Repeat the same routine for button No. 2, adjusting the No. 2 oscillator and antenna screws, and continue the process in the same way for the other controls.

Finally, for a still sharper setting, cut the volume so that you can barely hear your station. If necessary, disconnect the antenna lead and twist it lightly around the insulated portion of the red wire. Again, adjust the No. 1 oscillator and antenna screws for maximum response from your station.

To change any button to another station, if the station's kilocycle rating is within the range of the corresponding controls, it is only necessary to put in a new button marker, and to reset the controls in accordance with the preceding instructions.



AUTOMATIC OR DIAL TUNING

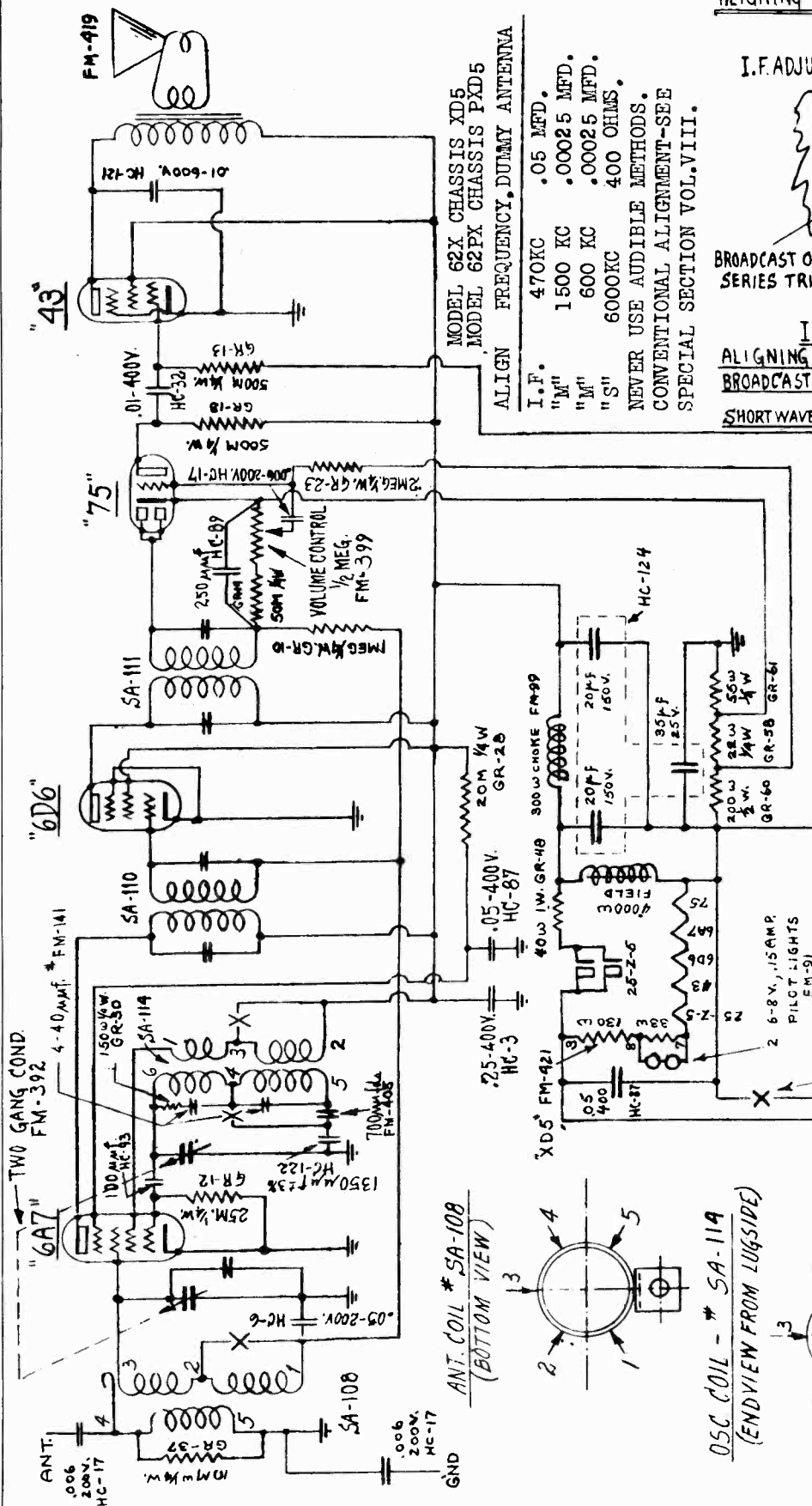
Wave Band Switch controls push button or dial tuning: The right hand, outside knob on Standard Tuning or Long Wave Tuning is marked:

Standard Tuning	Long Wave Tuning
S M A	S M L A
S—Short waves	M—Broadcast or medium waves
L—Long waves	A—Automatic button tuning on broadcast or medium waves

Automatic push button tuning operates only on the broadcast or medium wave band, when the switch is in the A position. In other positions, the dial must be used.

MODEL 62X, Chassis XD5
 MODEL 62PX, Chassis PXD5
 Schematic, Trimmers, Parts
 Coils, Alignment

ANDREA RADIO CORP.

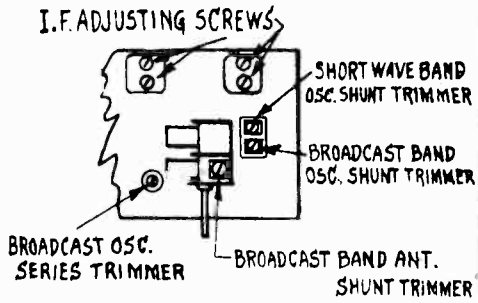


MODEL 62X CHASSIS XD5
 MODEL 62PX CHASSIS PXD5
 ALIGN FREQUENCY, DUMMY ANTENNA

I. F. 470KC .05 MFD.
 "M" 1500 KC .00025 MFD.
 "M" 600 KC .00025 MFD.
 "S" 6000KC 400 OHMS.

NEVER USE AUDIBLE METHODS.
 CONVENTIONAL ALIGNMENT-SEE
 SPECIAL SECTION VOL.VIII.

ALIGNING COND. LOCATIONS & FREQUENCIES



I.F. FREQUENCY = 470 KC.
 ALIGNING FREQUENCIES:
 BROADCAST BAND: 600 KC OR 500 METERS
 1500 KC OR 200 METERS
 SHORT WAVE BAND: 6 MC. OR 50 METERS

THIS PRINT ISSUED:
 & SUPERSEDES ALL PREVIOUS PRINTS
 TOLERANCES - UNLESS SPECIFIED:
 ALL FRACTIONS +.008" DECIMALS +.002"

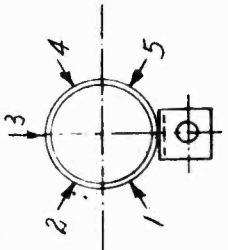
DATE:	ALTERATIONS:	APP:

"6A7" TWO GANG COND. FM-392

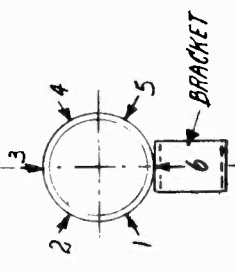
"6D6"

"43"

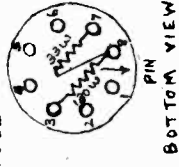
ANT. COIL # SA-108 (BOTTOM VIEW)



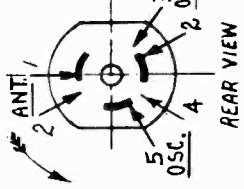
OSC. COIL - # SA-114 (ENDVIEW FROM LUGSIDE)



- XDS - VOLTAGE REGULATOR FM-421



BAND SEL SWITCH # FM-400 (SHOWN IN BROAD-CAST POSITION)

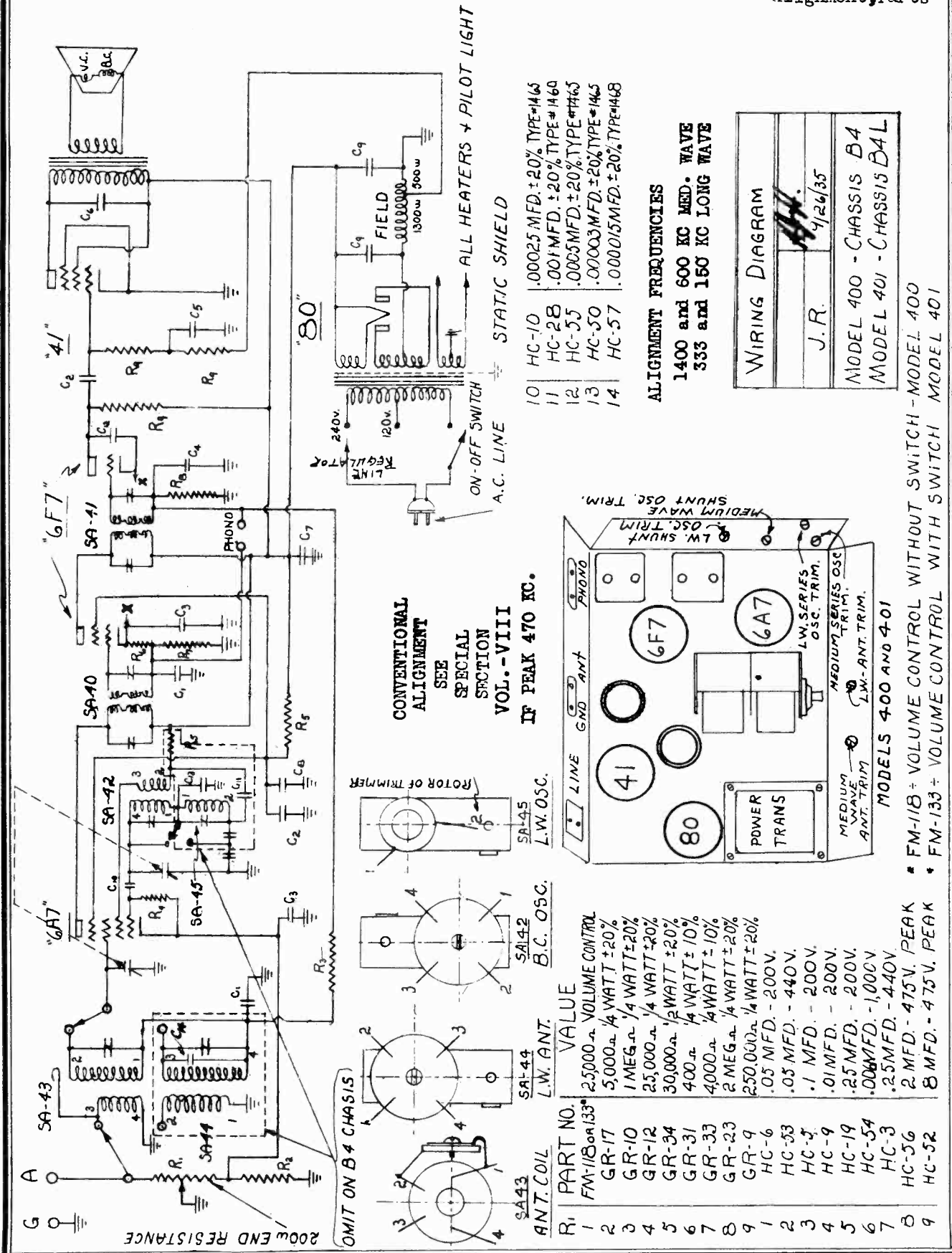


WIRING DIAGRAM "XD5"

MAT:	DATE: 12/6/57	APP: RLW
DR:		

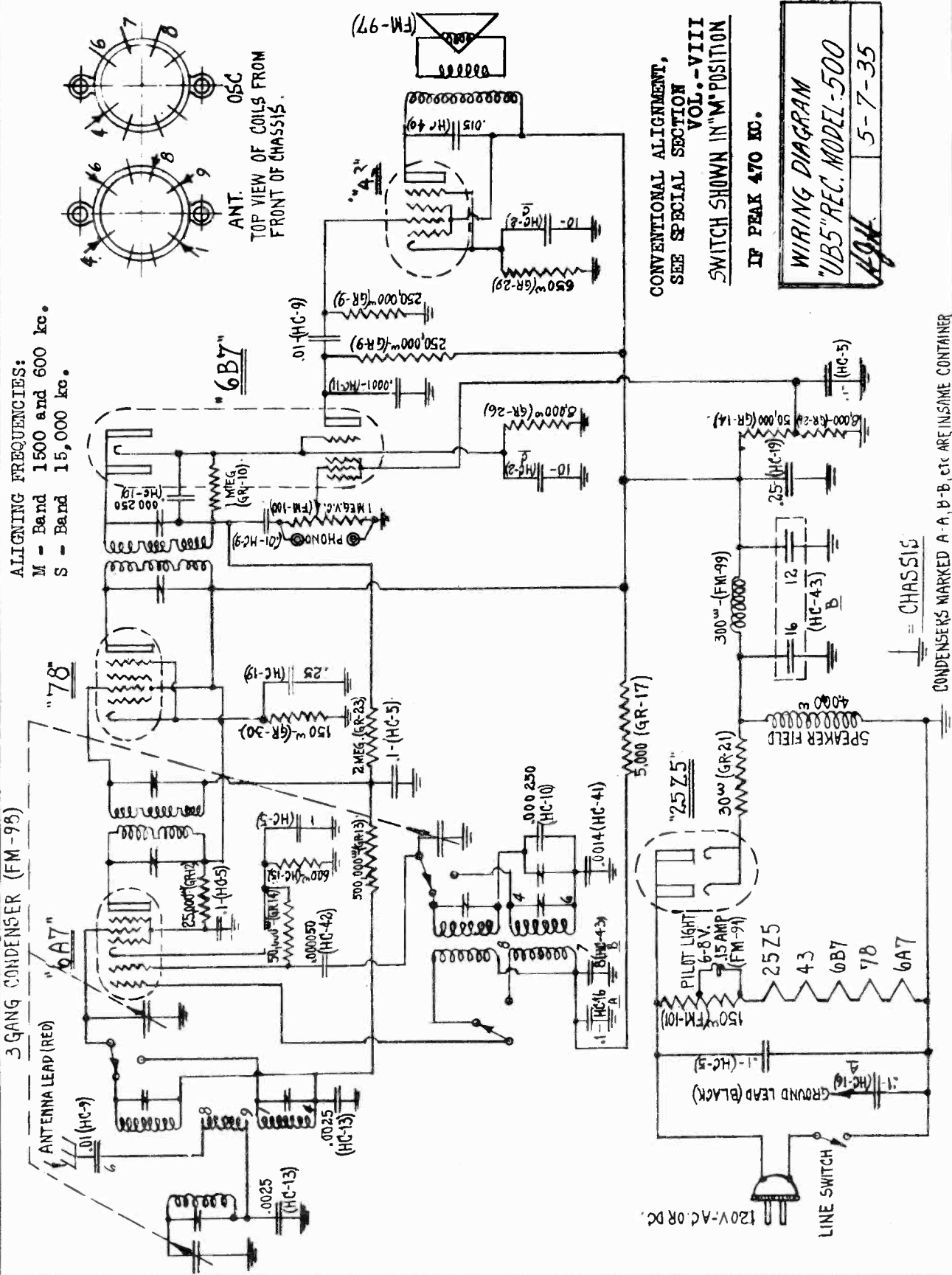
ANDREA RADIO CORP.

MODELS 400,401
Chassis B4,B4L
Schematic,Socket
Trimmers,Coils
Alignment,Parts

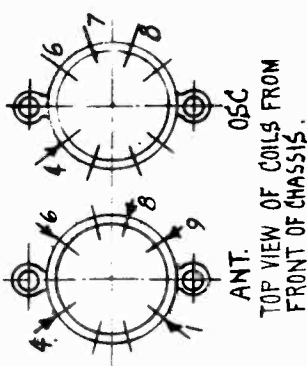


MODEL 500
 Chassis UB5
 Schematic, Coils
 Alignment, Parts

ANDREA RADIO CORP.



ALIGNING FREQUENCIES:
 M - Band 1500 and 600 kc.
 S - Band 15,000 kc.



CONVENTIONAL ALIGNMENT,
 SEE SPECIAL SECTION
 VOL. -VIII
 SWITCH SHOWN IN "M" POSITION
 IF PEAK 470 KC.

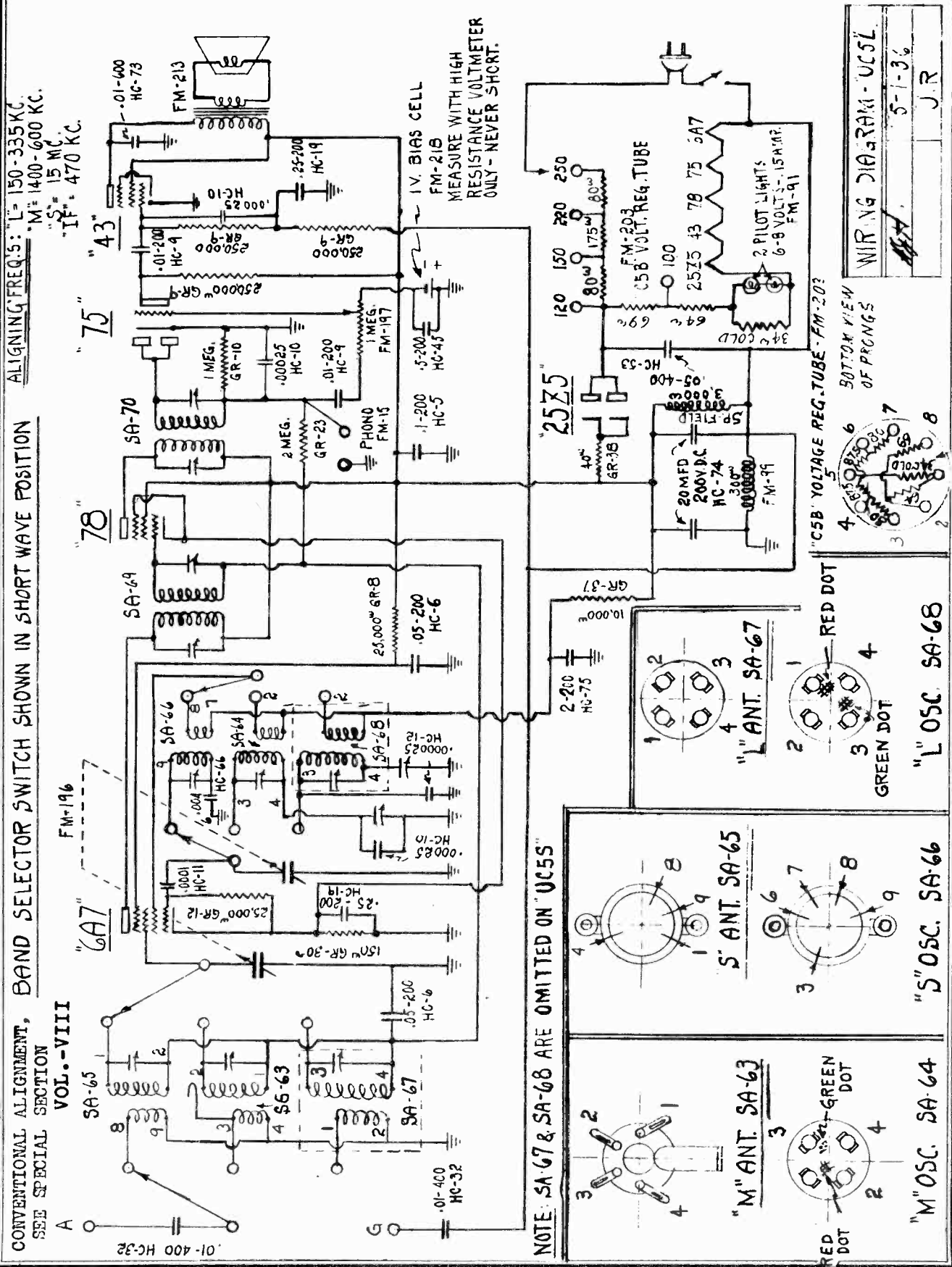
WIRING DIAGRAM
 "UB5" REC. MODEL-500
 A94 5-7-35

CONDENSERS MARKED A, B, C ARE IN SAME CONTAINER

= CHASSIS

ANDREA RADIO CORP.

MODEL 510, Chassis UC5S
 MODEL 511, Chassis UC5L
 Schematic, Coils, Parts
 Alignment

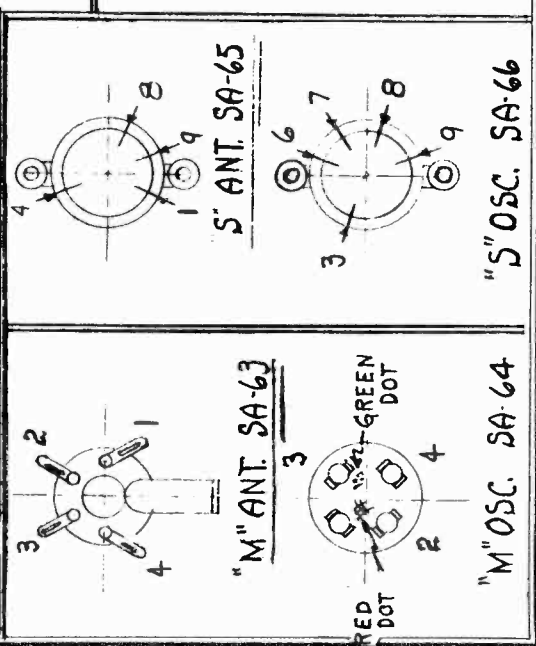


CONVENTIONAL ALIGNMENT, BAND SELECTOR SWITCH SHOWN IN SHORT WAVE POSITION
 SEE SPECIAL SECTION
 VOL.-VIII

ALIGNING FREQ'S: "L" = 150-335 KC.
 "M" = 1400-600 KC.
 "S" = 15 MC.
 "IF" = 470 KC.

IV. BIAS CELL
 FM-215
 MEASURE WITH HIGH
 RESISTANCE VOLTMETER
 ONLY - NEVER SHORT.

NOTE: SA-67 & SA-68 ARE OMITTED ON UC5S

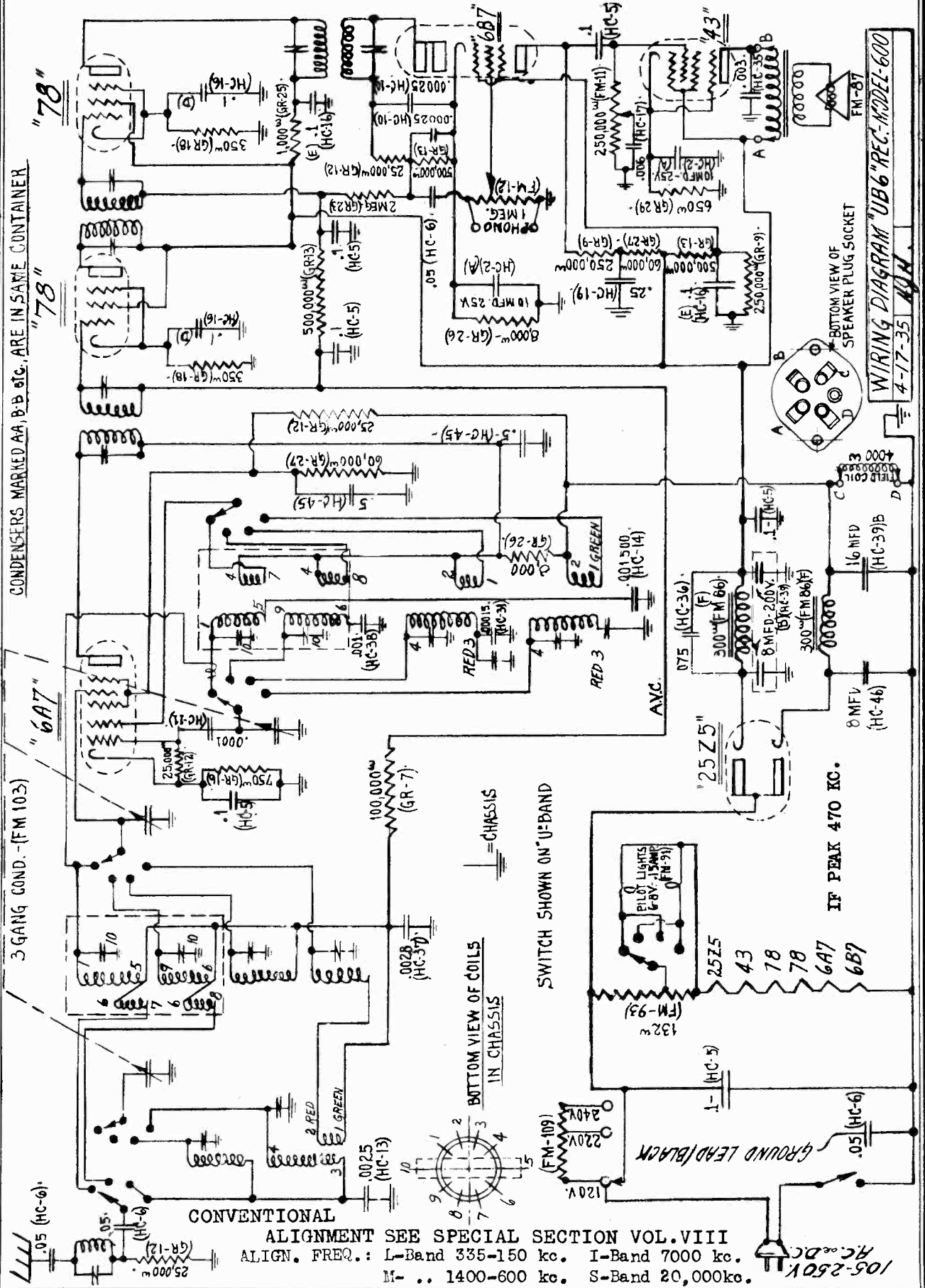


WIRING DIAGRAM - UC5L
 5-1-36
 J.R.

MODEL 600
Chassis UB6

ANDREA RADIO CORP.

Schematic, Alignment
Parts



ALIGNMENT SEE SPECIAL SECTION VOL. VIII
ALIGN. FREQ.: L-Band 335-150 kc. I-Band 7000 kc.
M- .. 1400-600 kc. S-Band 20,000kc.

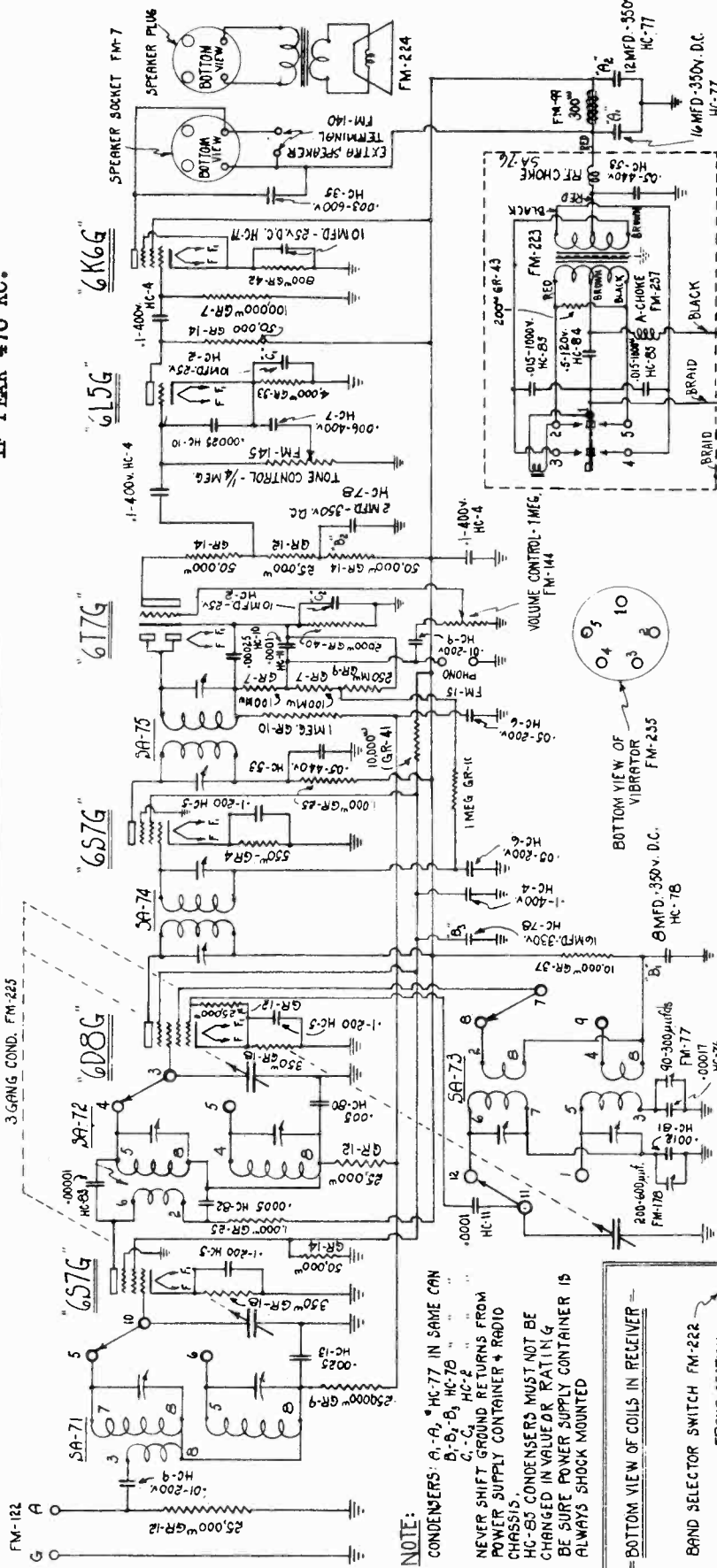
ANDREA RADIO CORP.

MODELS 610 to 613 incl.
Chassis C6B
Schematic, Coils.
Parts

CONVENTIONAL
ALIGNMENT
SEE SPECIAL
SECTION
VOL. - VIII

IF PEAK 470 KC.

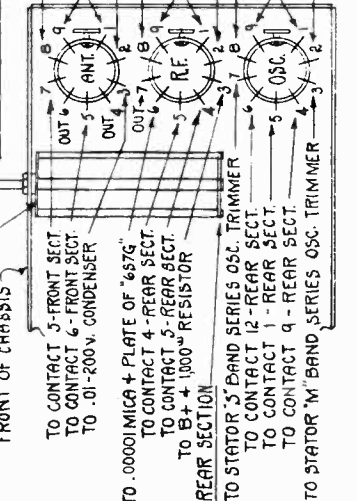
BAND SELECTOR SWITCH SHOWN IN "S" BAND POSITION



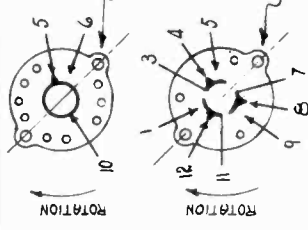
NOTE:
CONDENSERS: A, A', HC-77 IN SAME CAN
B, B', B₂, B₃, HC-78 " "
C, C', HC-6 " "
NEVER SHIFT GROUND RETURNS FROM
POWER SUPPLY CONTAINER & RADIO
CHASSIS
HC-85 CONDENSERS MUST NOT BE
CHANGED IN VALUE OR RATING &
BE SURE POWER SUPPLY CONTAINER IS
ALWAYS SHOCK MOUNTED

BOTTOM VIEW OF COILS IN RECEIVER

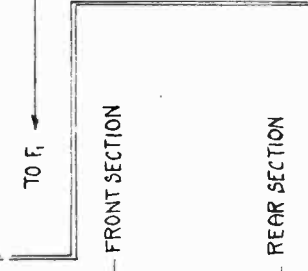
BAND SELECTOR SWITCH FM-222



BACK VIEW OF SWITCH SECTIONS IN RECEIVER



RADIO CHASSIS ONE POINT GRO. TO F, TO F, FRONT SECTION, REAR SECTION



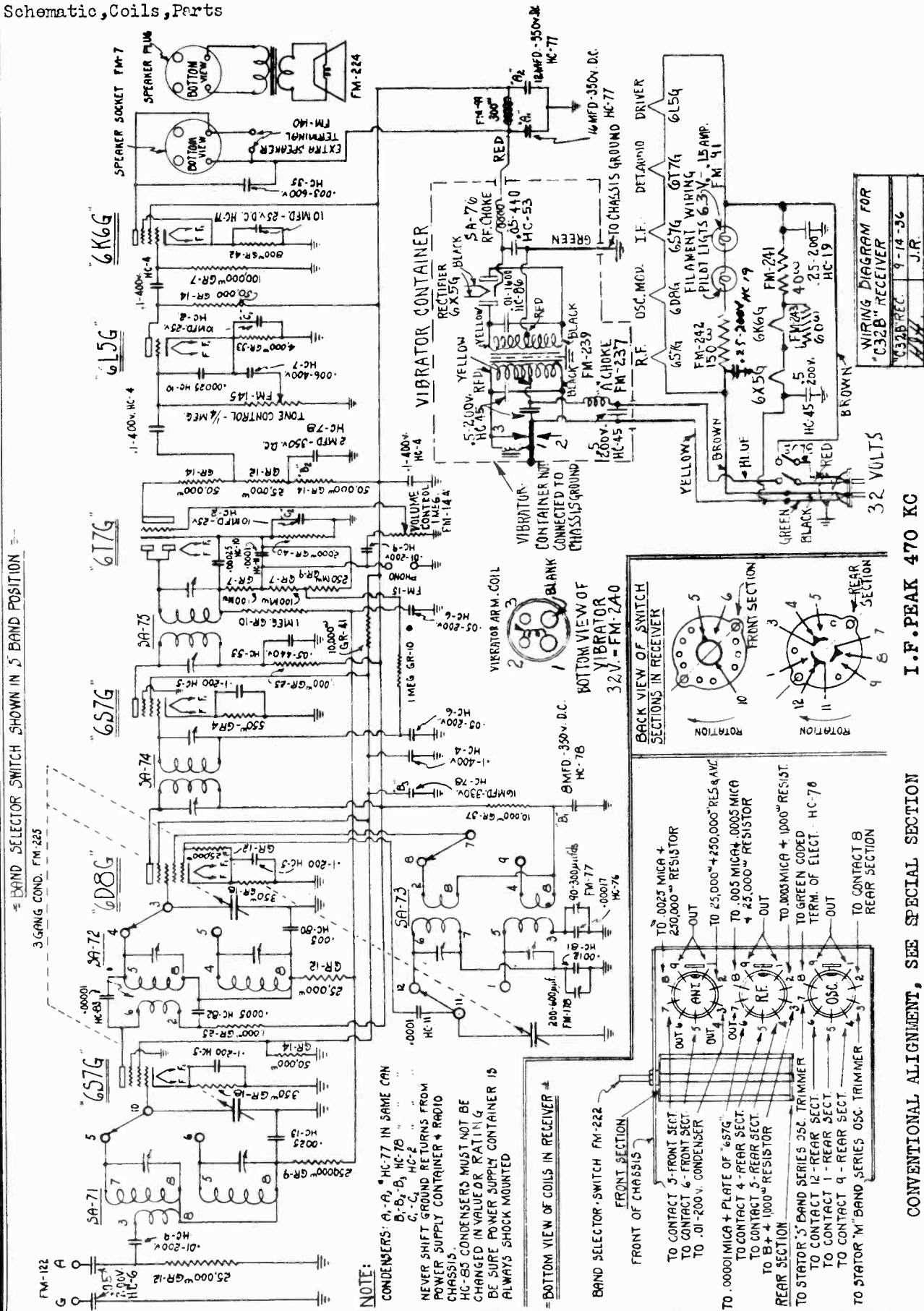
WIRING DIAGRAM FOR "C6B" RECEIVER
"C6B" REC. 9-14-36
J.R.

6 VOLT BATTERY - A + A

ON-OFF SWITCH FM-226
BATTERY CABLE FM-238

MODELS 610 to 613 incl.
Chassis C32B
Schematic, Coils, Parts

ANDREA RADIO CORP

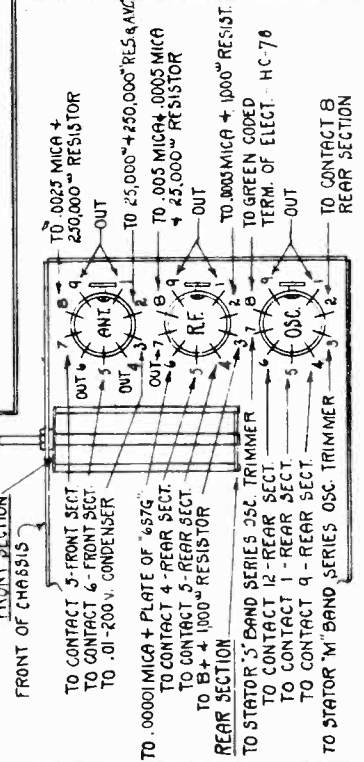
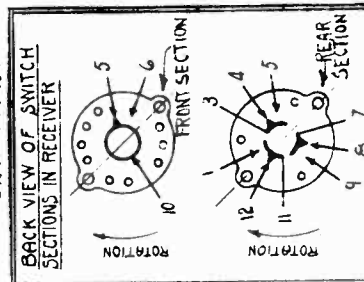


= BAND SELECTOR SWITCH SHOWN IN 5 BAND POSITION =

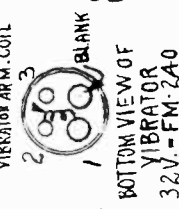
NOTE:
CONDENSERS: A₁-A₂ HC-77 IN SAME CAN
B₁-B₂ HC-70
C₁-C₂ HC-52
NEVER SHIFT GROUND RETURNS FROM POWER SUPPLY CONTAINER & RADIO CHASSIS.
HC-85 CONDENSERS MUST NOT BE CHANGED IN VALUE OR RATING.
BE SURE POWER SUPPLY CONTAINER IS ALWAYS SHOCK MOUNTED

= BOTTOM VIEW OF COILS IN RECEIVER =

BAND SELECTOR SWITCH FM-222



VIBRATOR CONTAINER



VIBRATOR ARM. COIL
BLANK
BOTTOM VIEW OF VIBRATOR FM-240
32V - FM-240

WIRING DIAGRAM FOR
"C32B" RECEIVER
"C32B" REC. 9-14-36
J.R.

I.F. PEAK 470 KC

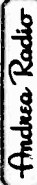
VOL. VIII

CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION

ANDREA RADIO CORP.

MODELS 610 to 613 incl.
Chassis C6B, C32B
Alignment, Trimmers

ALIGNMENT INSTRUCTIONS



MODELS 610, 611, 612, 613

CHASSIS C6B - C32B

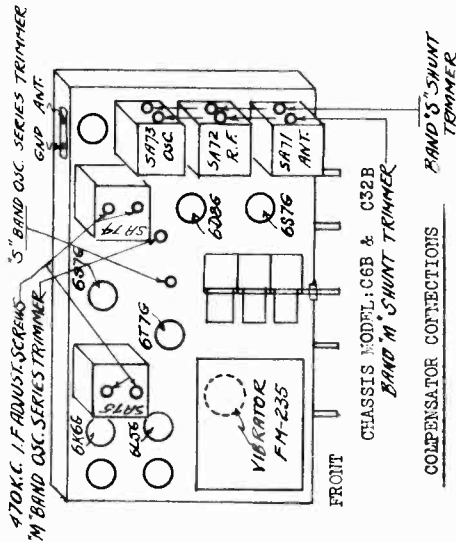
Chassis C6B is for 6 volt service and covers two ranges "M" & "S"

" 3206B is for 32 volt service and covers two ranges "M" & "S"

470 K.C. I.F. ADJUSTMENT

1. Connect high potential output lead from test generator in series with .1 mfd. condenser to the grid of the 6D9G tube.
2. Connect output voltmeter (copper oxide rectifier type) across voice coil of speaker.
3. Set generator to supply a modulated 470 K.C. signal. Adjust generator output attenuator until a small output reading is obtained on the output voltmeter.
4. Adjust both trimmers on top of the first and second I.F. transformers 600 K.C. until signal is heard.
5. Retrim slightly the first I.F. trimmer.

The I.F. is then aligned correctly.



ALIGNING FREQUENCIES:-

- "M" (MEDIUM WAVE BAND)
- ANT.-R.F.-OSC. SHUNT TRIMMERS 1400 K.C.
- "M" BAND OSC. SERIES TRIMMER ONLY 600 K.C.
- "S" (SHORT WAVE BAND)
- ANT.-R.F.-OSC. SHUNT TRIMMERS 15 MEGACYCLES
- "S" BAND OSC SERIES TRIMMER ONLY 6 MEGACYCLES

MEDIUM BAND "M" ALIGNMENT

Set test generator for 1400 K.C. Connect high potential lead of test generator in series with a .1 mfd. condenser to grid of 6D9G tube.

Tune receiver to 1400 K.C. (214.3 meters) on the tuning scale. If signal is not heard, leave scale pointer set to 1400 K.C. (214.3) meters and adjust oscillator coil shunt trimmer slowly and carefully until signal is heard.

The oscillator coil of receiver and dial are now set correctly, assuming the test generator frequency is correct. Otherwise, the dial calibration will be wrong.

Remove test generator hot lead from 6D9G grid. Replace .1 mfd. condenser with 250 mmf. (.00025 mfd.) and connect to antenna terminal of receiver "A", all other settings to remain the same.

Adjust R.F. coil shunt trimmer and antenna coil shunt trimmer for maximum output deflection.

Retune test generator to 600 K.C. (500 meters) and tune receiver to 600 K.C. (500 meters) until signal is heard.

Adjust oscillator coil series trimmer slowly while rotating the gang condenser slowly about the signal for each small adjustment of the series trimmer until any further adjustment of the series trimmer decreases the output signal. This signifies the aligning point has been reached. During this adjustment never touch the antenna R.F. or oscillator shunt trimmers.

Reset test generator to 1400 K.C., tune in signal on receiver, adjust antenna and R.F. shunt trimmers slightly for maximum output, never the oscillator shunt trimmer.

The "M" band is now aligned.

SHORT WAVE "S" BAND ALIGNMENT

Turn wave band selector switch to the right "S" band. Replace 250 mmf. (.00025 mfd.) condenser with 400 ohm resistor. Set generator frequency for 18000 K.C.

Align R.F. shunt trimmer for maximum output deflection. During this adjustment be certain to rotate the station selector knob back and forth slowly for each small R.F. shunt trimmer change.

Align antenna shunt trimmer for maximum output deflection. Be sure to rotate station selector knob back and forth slowly for each small antenna shunt trimmer change. Retrim R.F. shunt trimmer for any small change. Check to see that alignment has not been made on the image.

Set test generator to 6000 K.C., retune receiver until signal is heard. Adjust oscillator series trimmer slowly while rotating the gang condenser around about the signal for each small adjustment of the series trimmer until further adjustment of the series trimmer decreases the output signal.

Never touch the antenna R.F. and oscillator shunt trimmer during this adjustment.

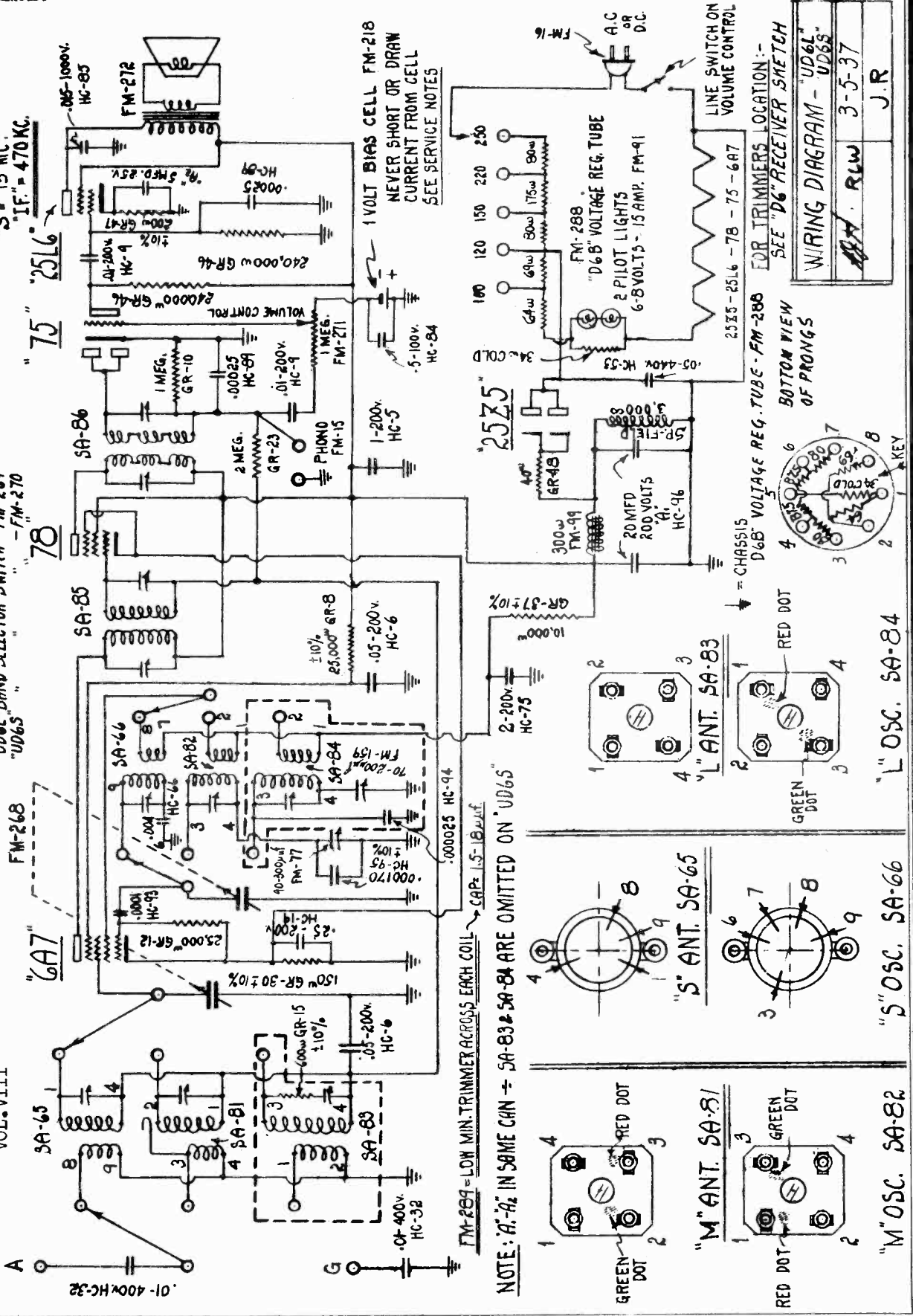
Reset test generator to 15000 K.C., tune receiver until correct signal is heard. Retouch antenna and R.F. shunt trimmer for final critical setting. During this final adjustment never touch the oscillator shunt trimmer.

MODEL 620, Chassis UD6S
MODEL 621, Chassis UD6L
Schematic, Coils, Parts
Alignment

ANDREA RADIO CORP.

ALIGNING FREQS: "L"- 350 - 150 KC.
"M"- 1400 - 600 KC.
"S"- 15 MC.
"IF"- 470 KC.

BAND SELECTOR SWITCH SHOWN IN SHORT WAVE POSITION

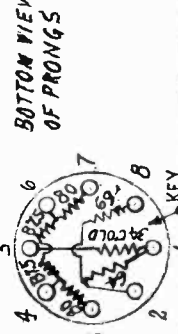


CONVENTIONAL ALIGNMENT,
SEE SPECIAL SECTION
VOL. VIII

1 VOLT BIAS CELL FM-218
NEVER SHORT OR DRAW
CURRENT FROM CELL
SEE SERVICE NOTES

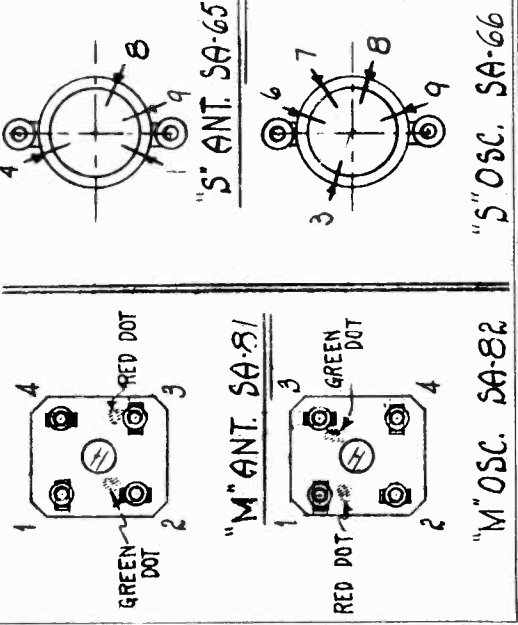
"D6B" VOLTAGE REG. TUBE
2 PILOT LIGHTS
6-8 VOLTS - 15 AMP. FM-91
LINE SWITCH ON
VOLUME CONTROL

FOR TRIMMERS LOCATION -
SEE "D6" RECEIVER SKETCH
WIRING DIAGRAM - "UD6L"
"UD6S"
RLW 3-5-37
J.R



FM-289 = LOW MIN. TRIMMER ACROSS EACH COIL CAPS 1.5-18 p.f.

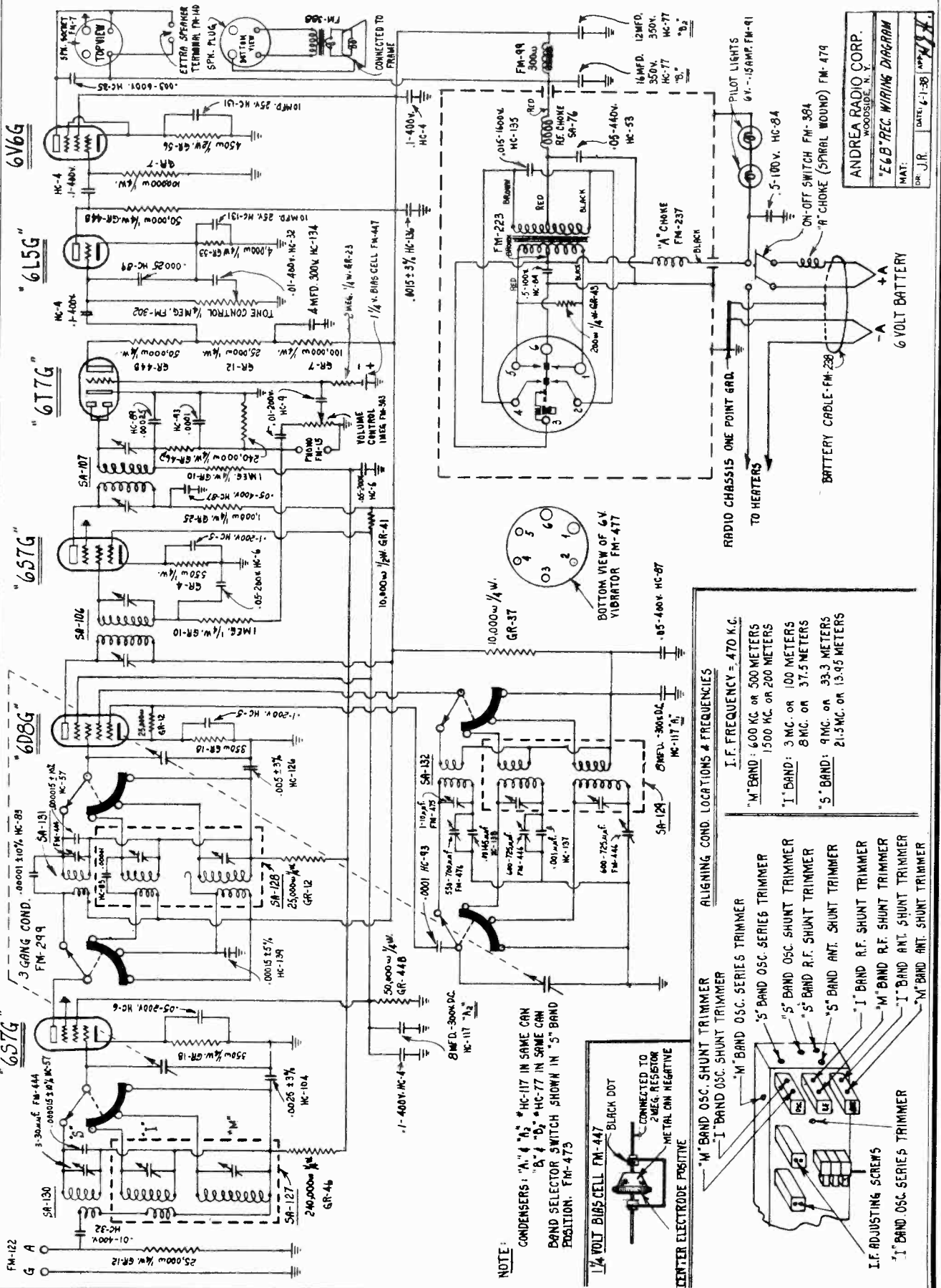
NOTE: A1-A2 IN SAME CAN - SA-83 & SA-84 ARE OMITTED ON "UD6S"



Schematic, Trimmers
Parts

ANDREA RADIO CORP.

MODELS 626, 627, 628
Chassis E6B



ANDREA RADIO CORP. WOODSIDE, N. Y.	
MAT: _____	DATE: 6-1-38
DR: J.R.	APP: J.R.

"E6B" REC WIRING DIAGRAM

ALIGNING COND. LOCATIONS & FREQUENCIES

I.F. FREQUENCY = 470 K.C.

- "M" BAND: 600 KC. OR 500 METERS
- 1500 KC. OR 200 METERS
- "I" BAND: 3 MC. OR 100 METERS
- 8 MC. OR 37.5 METERS
- "S" BAND: 9 MC. OR 33.3 METERS
- 21.5 MC. OR 13.95 METERS

CONNECTED TO 2 MEG. RESISTOR

CONNECTED TO CENTER ELECTRODE POSITIVE

CONNECTED TO METAL CAN NEGATIVE

- "M" BAND OSC. SHUNT TRIMMER
- "I" BAND OSC. SHUNT TRIMMER
- "S" BAND OSC. SERIES TRIMMER
- "S" BAND OSC. SHUNT TRIMMER
- "S" BAND R.F. SHUNT TRIMMER
- "S" BAND ANT. SHUNT TRIMMER
- "I" BAND R.F. SHUNT TRIMMER
- "M" BAND R.F. SHUNT TRIMMER
- "I" BAND ANT. SHUNT TRIMMER
- "M" BAND ANT. SHUNT TRIMMER
- "I" BAND OSC. SERIES TRIMMER
- I.F. ADJUSTING SCREWS
- "I" BAND OSC. SHUNT TRIMMER

NOTE:
CONDENSERS: "A," "B," "C," "D," "E," "F," "G," "H," "I," "J," "K," "L," "M," "N," "O," "P," "Q," "R," "S," "T," "U," "V," "W," "X," "Y," "Z," "AA," "AB," "AC," "AD," "AE," "AF," "AG," "AH," "AI," "AJ," "AK," "AL," "AM," "AN," "AO," "AP," "AQ," "AR," "AS," "AT," "AU," "AV," "AW," "AX," "AY," "AZ," "BA," "BB," "BC," "BD," "BE," "BF," "BG," "BH," "BI," "BJ," "BK," "BL," "BM," "BN," "BO," "BP," "BQ," "BR," "BS," "BT," "BU," "BV," "BW," "BX," "BY," "BZ," "CA," "CB," "CC," "CD," "CE," "CF," "CG," "CH," "CI," "CJ," "CK," "CL," "CM," "CN," "CO," "CP," "CQ," "CR," "CS," "CT," "CU," "CV," "CW," "CX," "CY," "CZ," "DA," "DB," "DC," "DD," "DE," "DF," "DG," "DH," "DI," "DJ," "DK," "DL," "DM," "DN," "DO," "DP," "DQ," "DR," "DS," "DT," "DU," "DV," "DW," "DX," "DY," "DZ," "EA," "EB," "EC," "ED," "EE," "EF," "EG," "EH," "EI," "EJ," "EK," "EL," "EM," "EN," "EO," "EP," "EQ," "ER," "ES," "ET," "EU," "EV," "EW," "EX," "EY," "EZ," "FA," "FB," "FC," "FD," "FE," "FF," "FG," "FH," "FI," "FJ," "FK," "FL," "FM," "FN," "FO," "FP," "FQ," "FR," "FS," "FT," "FU," "FV," "FW," "FX," "FY," "FZ," "GA," "GB," "GC," "GD," "GE," "GF," "GG," "GH," "GI," "GJ," "GK," "GL," "GM," "GN," "GO," "GP," "GQ," "GR," "GS," "GT," "GU," "GV," "GW," "GX," "GY," "GZ," "HA," "HB," "HC," "HD," "HE," "HF," "HG," "HH," "HI," "HJ," "HK," "HL," "HM," "HN," "HO," "HP," "HQ," "HR," "HS," "HT," "HU," "HV," "HW," "HX," "HY," "HZ," "IA," "IB," "IC," "ID," "IE," "IF," "IG," "IH," "II," "IJ," "IK," "IL," "IM," "IN," "IO," "IP," "IQ," "IR," "IS," "IT," "IU," "IV," "IW," "IX," "IY," "IZ," "JA," "JB," "JC," "JD," "JE," "JF," "JG," "JH," "JI," "JJ," "JK," "JL," "JM," "JN," "JO," "JP," "JQ," "JR," "JS," "JT," "JU," "JV," "JW," "JX," "JY," "JZ," "KA," "KB," "KC," "KD," "KE," "KF," "KG," "KH," "KI," "KJ," "KK," "KL," "KM," "KN," "KO," "KP," "KQ," "KR," "KS," "KT," "KU," "KV," "KW," "KX," "KY," "KZ," "LA," "LB," "LC," "LD," "LE," "LF," "LG," "LH," "LI," "LJ," "LK," "LL," "LM," "LN," "LO," "LP," "LQ," "LR," "LS," "LT," "LU," "LV," "LW," "LX," "LY," "LZ," "MA," "MB," "MC," "MD," "ME," "MF," "MG," "MH," "MI," "MJ," "MK," "ML," "MM," "MN," "MO," "MP," "MQ," "MR," "MS," "MT," "MU," "MV," "MW," "MX," "MY," "MZ," "NA," "NB," "NC," "ND," "NE," "NF," "NG," "NH," "NI," "NJ," "NK," "NL," "NM," "NN," "NO," "NP," "NQ," "NR," "NS," "NT," "NU," "NV," "NW," "NX," "NY," "NZ," "OA," "OB," "OC," "OD," "OE," "OF," "OG," "OH," "OI," "OJ," "OK," "OL," "OM," "ON," "OO," "OP," "OQ," "OR," "OS," "OT," "OU," "OV," "OW," "OX," "OY," "OZ," "PA," "PB," "PC," "PD," "PE," "PF," "PG," "PH," "PI," "PJ," "PK," "PL," "PM," "PN," "PO," "PP," "PQ," "PR," "PS," "PT," "PU," "PV," "PW," "PX," "PY," "PZ," "QA," "QB," "QC," "QD," "QE," "QF," "QG," "QH," "QI," "QJ," "QK," "QL," "QM," "QN," "QO," "QP," "QQ," "QR," "QS," "QT," "QU," "QV," "QW," "QX," "QY," "QZ," "RA," "RB," "RC," "RD," "RE," "RF," "RG," "RH," "RI," "RJ," "RK," "RL," "RM," "RN," "RO," "RP," "RQ," "RR," "RS," "RT," "RU," "RV," "RW," "RX," "RY," "RZ," "SA," "SB," "SC," "SD," "SE," "SF," "SG," "SH," "SI," "SJ," "SK," "SL," "SM," "SN," "SO," "SP," "SQ," "SR," "SS," "ST," "SU," "SV," "SW," "SX," "SY," "SZ," "TA," "TB," "TC," "TD," "TE," "TF," "TG," "TH," "TI," "TJ," "TK," "TL," "TM," "TN," "TO," "TP," "TQ," "TR," "TS," "TT," "TU," "TV," "TW," "TX," "TY," "TZ," "UA," "UB," "UC," "UD," "UE," "UF," "UG," "UH," "UI," "UJ," "UK," "UL," "UM," "UN," "UO," "UP," "UQ," "UR," "US," "UT," "UU," "UV," "UW," "UX," "UY," "UZ," "VA," "VB," "VC," "VD," "VE," "VF," "VG," "VH," "VI," "VJ," "VK," "VL," "VM," "VN," "VO," "VP," "VQ," "VR," "VS," "VT," "VU," "VV," "VW," "VX," "VY," "VZ," "WA," "WB," "WC," "WD," "WE," "WF," "WG," "WH," "WI," "WJ," "WK," "WL," "WM," "WN," "WO," "WP," "WQ," "WR," "WS," "WT," "WU," "WV," "WW," "WX," "WY," "WZ," "XA," "XB," "XC," "XD," "XE," "XF," "XG," "XH," "XI," "XJ," "XK," "XL," "XM," "XN," "XO," "XP," "XQ," "XR," "XS," "XT," "XU," "XV," "XW," "XX," "XY," "XZ," "YA," "YB," "YC," "YD," "YE," "YF," "YG," "YH," "YI," "YJ," "YK," "YL," "YM," "YN," "YO," "YP," "YQ," "YR," "YS," "YT," "YU," "YV," "YW," "YX," "YZ," "ZA," "ZB," "ZC," "ZD," "ZE," "ZF," "ZG," "ZH," "ZI," "ZJ," "ZK," "ZL," "ZM," "ZN," "ZO," "ZP," "ZQ," "ZR," "ZS," "ZT," "ZU," "ZV," "ZW," "ZX," "ZY," "ZZ"

MODELS 626, 627, 628

Chassis E6B

Socket, Trimmers

Alignment

ANDREA RADIO CORP.

CHASSIS NO. E6B - MODEL NOS. 626, 627, 628
FOR USE WITH A 6 VOLT WET ACCUMULATOR.

470 KC. ALIGNMENT:

1. Connect the high-potential output lead from your test generator in series with a .1 mfd. condenser to the grid of the 6D8G tube.
2. Connect the output voltmeter (copper oxide rectifier type) across the voice coil of the speaker.
3. Set the generator at 470 kc. and adjust the generator output attenuator until a small output reading is obtained on the output meter.
4. Adjust both trimmers on the top of the first and the second IF transformers (see diagram) for maximum output.
5. Retrim the first IF trimmer carefully. This completes the IF alignment.

MEDIUM BAND "M" ALIGNMENT:

1. Turn the wave band selector switch on the set to the M position and set the generator for 1,400 kc. Connect the high-potential lead of the generator in series with a .1 mfd. condenser to the grid of the 6D8G tube. Tune the receiver to 1,400 kc. (214.3 m.) on the tuning scale. If no signal is heard, leave the scale pointer at 1,400 kc., and adjust the oscillator coil shunt trimmer slowly until a signal is heard.
2. The oscillator coil of the receiver and the dial are now set correctly, assuming that the test generator calibration is correct.
3. Remove the generator lead from the grid of the 6D8G. Replacing the .1 mfd. condenser by a .00025 mfd. condenser, connect the lead to the antenna terminal of the receiver, leaving all the other settings the same.
4. Adjust the RF coil shunt trimmer, and the ANT coil shunt trimmer for maximum signal response.
5. Retune the generator to 600 kc. (500 m.), and tune the receiver to this same frequency.
6. Adjust the oscillator coil series trimmer slowly, while rotating the gang condenser back and forth slightly for each small adjustment of the series trimmer. Continue this until a further adjustment of the trimmer does not increase the signal further. During this adjustment, do not touch the ANT, RF, or OSC shunt trimmers.
7. Reset the test generator and the receiver to 1,400 kc. Tune the test signal accurately on the receiver. Adjust the ANT and RF shunt trimmers slightly for the maximum output. DO NOT ADJUST THE OSC SHUNT TRIMMER. This completes the alignment of the M band.

SHORT WAVE "S" BAND ALIGNMENT:

1. Turn the wave band selector switch on the receiver to the "S" position. Replace the .00025 mfd. condenser with a 400-ohm resistor.
2. The following adjustment is necessary only if the dial calibration is badly out of line. Otherwise, proceed with steps 3 and 4:

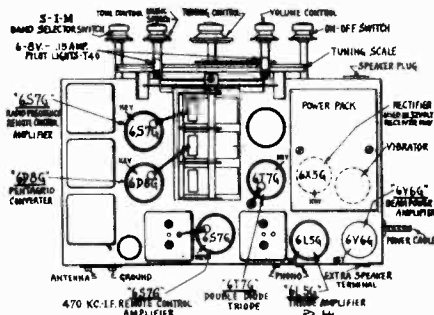
Set the signal generator at 21,500 kc. and the receiver at 21.5 mc. Adjust the oscillator shunt trimmer slowly between maximum and minimum. A signal will be heard at two settings of this trimmer, one near the minimum capacity (plates open), and the other, near the maximum capacity (plates closed). This trimmer should be left at the position where the signal is heard near the minimum capacity. The adjustment near the maximum capacity is the image frequency setting, as can be determined from the previous explanation of image frequency.

3. Align the RF shunt trimmer for maximum signal. During this adjustment, be certain to rotate the gang condenser back and forth for each small adjustment of the RF shunt trimmer.
4. Align the antenna shunt trimmer for maximum signal. During this adjustment, be certain to rock the gang condenser back and forth for each small change of the antenna shunt trimmer until you have obtained maximum signal response. Retrim the RF shunt trimmer for any small change. Check to see that the alignment was not made on the image frequency. (See previous notes.)
5. Set the generator to 9,000 kc., and retune the receiver until the signal is picked up. Adjust the OSC series trimmer slowly, rocking the gang condenser for each small change of the trimmer, until you cannot increase the signal further. DO NOT TOUCH THE ANT, RF, OR OSC SHUNT TRIMMERS DURING THIS ADJUSTMENT.

6. Reset the generator at 21,500 kc., and retune the receiver until the signal is picked up. Retune the ANT and RF shunt trimmers for final, critical setting. During this adjustment, do not touch the OSC shunt trimmer. The S band is now aligned.

SPECIAL "S" BAND ALIGNMENT CHECK:

If you are not experienced in the S band alignment you can check the individual coils very simply in this manner:



Apply the generator signal through a .1 mfd. condenser to the grid of the 6D8G and carry out the procedure outlined above. This will tell you whether the OSC shunt trimmer only is adjusted correctly, or the right signal setting has been used on the test generator. In this case ONLY the image and fundamental will have the same intensity.

Then you are sure that the oscillator circuit is correct, put the signal on the grid of the 6D8G RF tube, and repeat the procedure on the RF coil. In this case, when the alignment is correct, the image will be lower in volume than the signal. In this case, the image will be lower in volume than the active accumulator terminal. In installing the receiver, the accumulator should be kept within the length of the receiver "A" cable leads. Replace the .1 mfd. condenser in the generator lead with a 400-ohm resistor and NEVER ATTEMPT TO INCREASE THE LENGTH, OTHERWISE PERFORMANCE MAY BE OUTLINED ABOVE FOR THE ANTENNA CIRCUIT.

This method assures you of correct individual alignment on each coil. Finally, outlet touch each coil except the OSC as outlined above in 3 and 4.

INTERMEDIATE "I" BAND ALIGNMENT:

Put the wave band switch at the I position, set the generator at 8,000 kc., and the receiver at 8 mc. Align the ANT and RF shunt trimmers for maximum signal. Be sure to rock the gang condenser during this adjustment. Then set the signal. In the PHONO connection at the rear of the chassis, the regular generator at 3,000 kc. and the receiver at 3 mc. Adjust the OSC series trimmer to regulate the photograph volume. To again use the trimmer for maximum signal, rocking the gang condenser for each small adjustment of the radio receiver will result. Reset the generator at 8,000 kc. and retune the ANT and RF shunt trimmers for maximum signal. This completes the alignment of the I band.

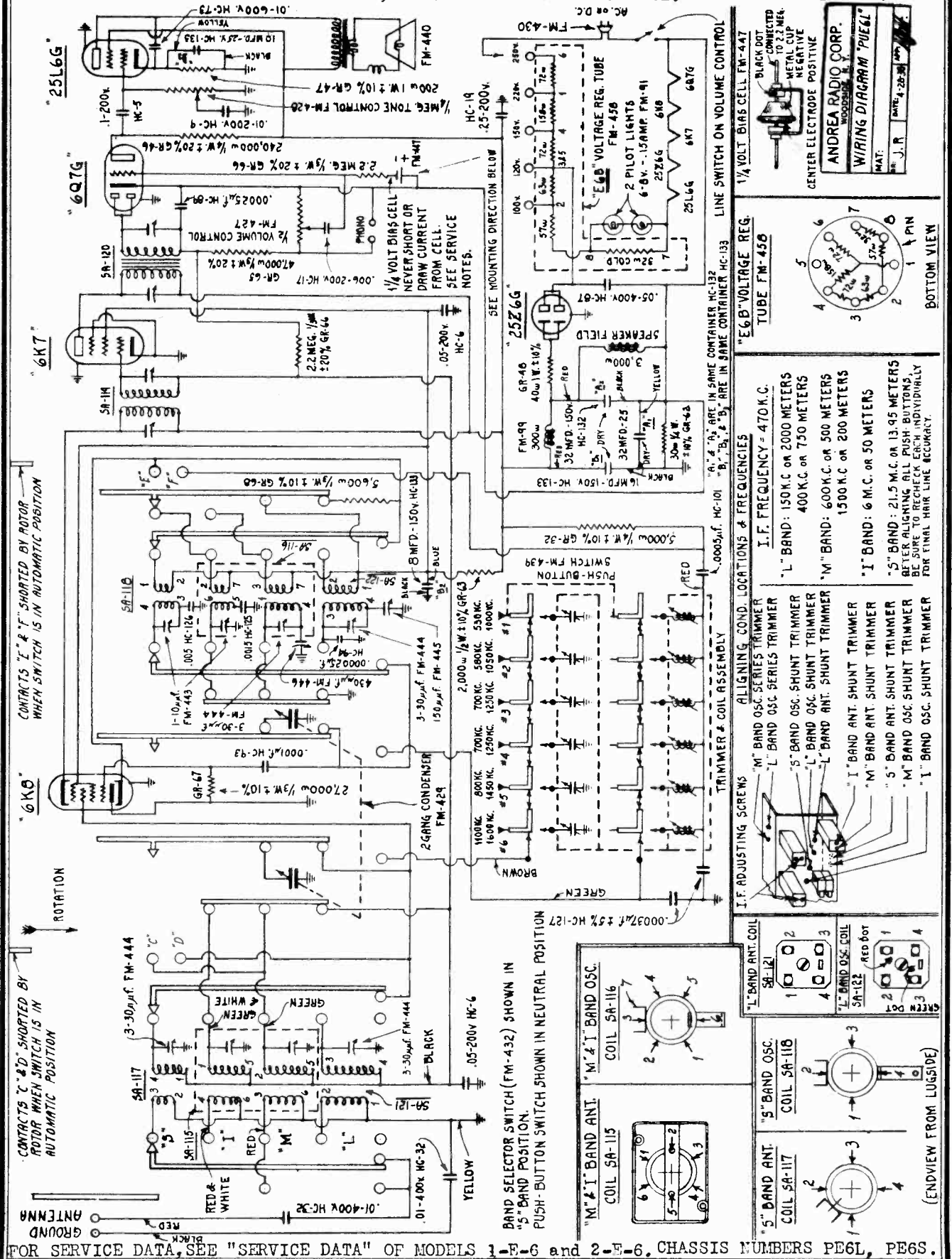
Models 626, 627, and 728 for 32 volt D.C. sets equipped with line cord and plug for insertion in 32 volt D.C. outlets.

PHONOGRAM CONNECTIONS:- This receiver incorporates "PHONO" connections whereby the high quality audio system can be used to electrically reproduce phonograph records. For this purpose, a high impedance pickup or a low impedance unit with a matching transformer, may be inserted in the PHONO connection at the rear of the chassis. The regular volume control will regulate the photograph volume. To again use the trimmer for maximum signal, rocking the gang condenser for each small adjustment of the radio receiver will result.

ANDREA RADIO CORP.

MODELS 630, 631. CHASSIS NUMBER PUE 6L.

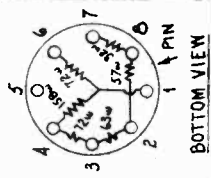
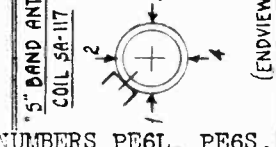
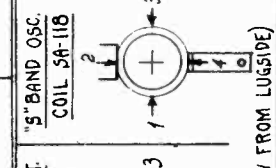
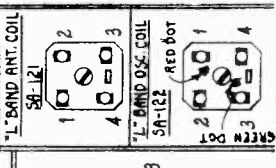
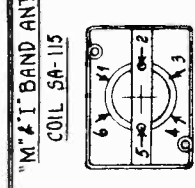
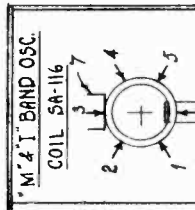
MODELS 630, 631
Chassis PUE6L
Schematic, Coils
Alignment, Parts



CONTACTS "I" & "J" SHORTED BY ROTOR WHEN SWITCH IS IN AUTOMATIC POSITION

CONTACTS "C" & "D" SHORTED BY ROTOR WHEN SWITCH IS IN AUTOMATIC POSITION

BAND SELECTOR SWITCH (FM-432) SHOWN IN "5" BAND POSITION.
PUSH-BUTTON SWITCH SHOWN IN NEUTRAL POSITION



ALIGNING COND. LOCATIONS & FREQUENCIES

- "M" BAND OSC. SERIES TRIMMER
- "L" BAND OSC. SERIES TRIMMER
- "5" BAND OSC. SHUNT TRIMMER
- "L" BAND OSC. SHUNT TRIMMER
- "I" BAND ANT. SHUNT TRIMMER
- "M" BAND ANT. SHUNT TRIMMER
- "5" BAND ANT. SHUNT TRIMMER
- "L" BAND OSC. SHUNT TRIMMER
- "I" BAND OSC. SHUNT TRIMMER

I.F. ADJUSTING SCREWS

I.F. FREQUENCY = 470 K.C.

- "L" BAND: 150K.C. OR 2000 METERS
- 400K.C. OR 750 METERS
- "M" BAND: 600K.C. OR 500 METERS
- 1500 K.C. OR 200 METERS
- "I" BAND: 6 M.C. OR 50 METERS
- "5" BAND: 21.5 M.C. OR 13.95 METERS

AFTER ALIGNING ALL PUSH-BUTTONS, BE SURE TO RECHECK EACH INDIVIDUALLY FOR FINAL HAIR LINE ACCURACY.

EGB VOLTAGE REG. TUBE FM-450

LINE SWITCH ON VOLUME CONTROL

1/4 VOLT BIASE CELL FM-447

BLACK DOT CONNECTED TO 22 MEG. METAL CUP NEGATIVE CENTER ELECTRODE POSITIVE

ANDREA RADIO CORP.
WOODBRIDGE, N. Y.

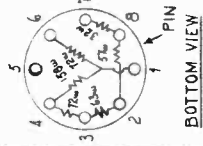
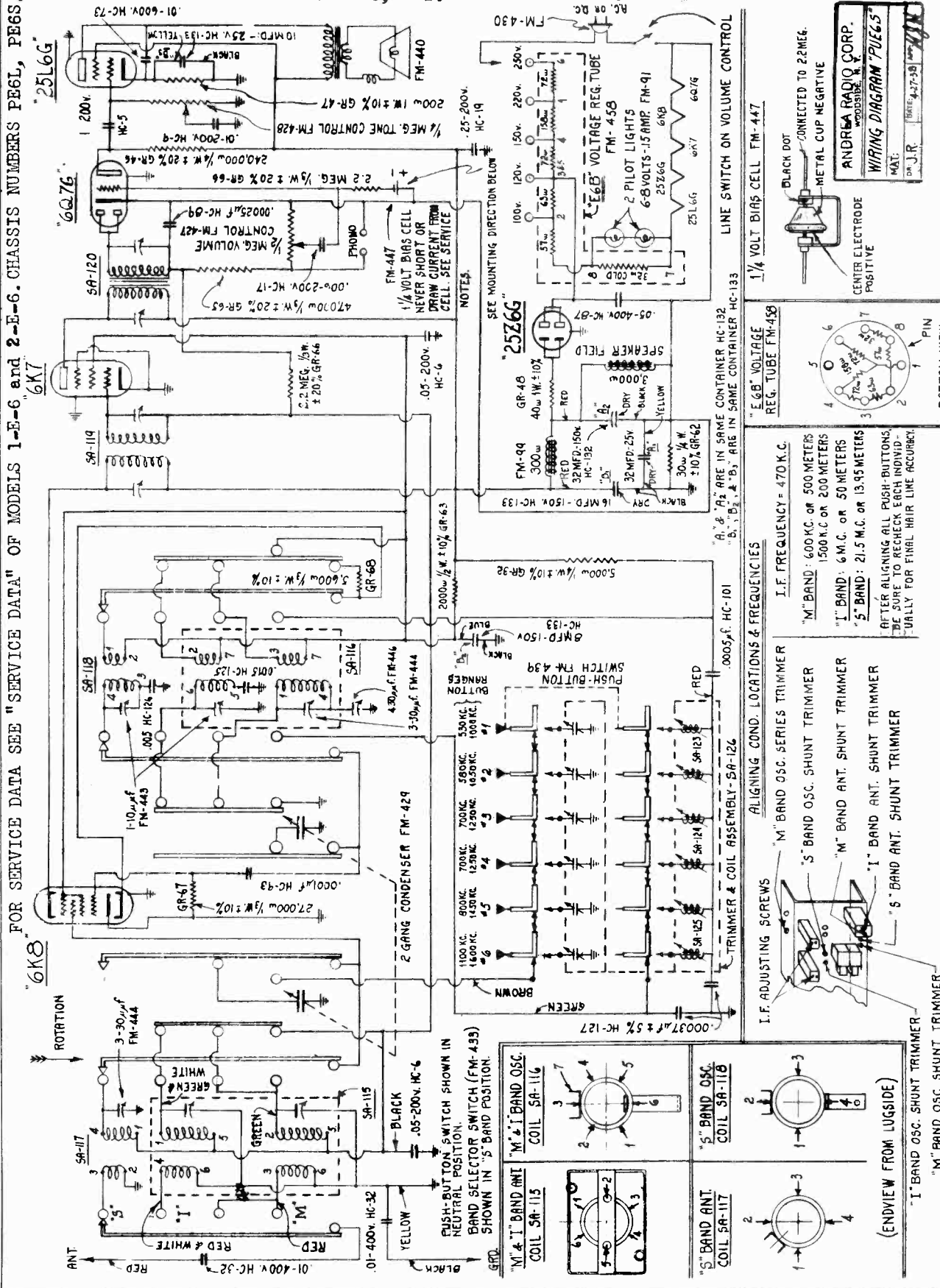
WIRING DIAGRAM "PUE6L"
MAY 1947

FOR SERVICE DATA, SEE "SERVICE DATA" OF MODELS 1-E-6 and 2-E-6, CHASSIS NUMBERS PE6L, PE6S.

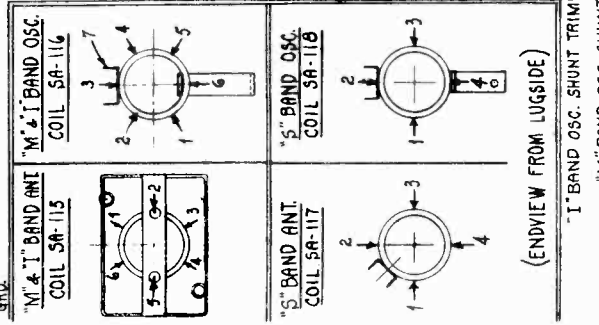
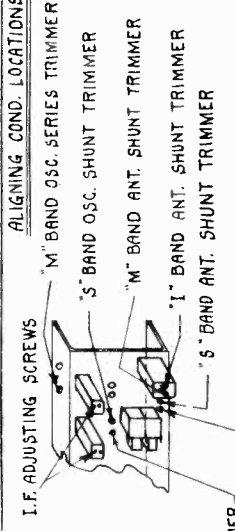
ANDREA RADIO CORP.

MODELS 630, 631
Chassis PUE6S
Schematic, Coils
Alignment, Parts

MODELS 630, 631. CHASSIS NUMBER PUE 6S.

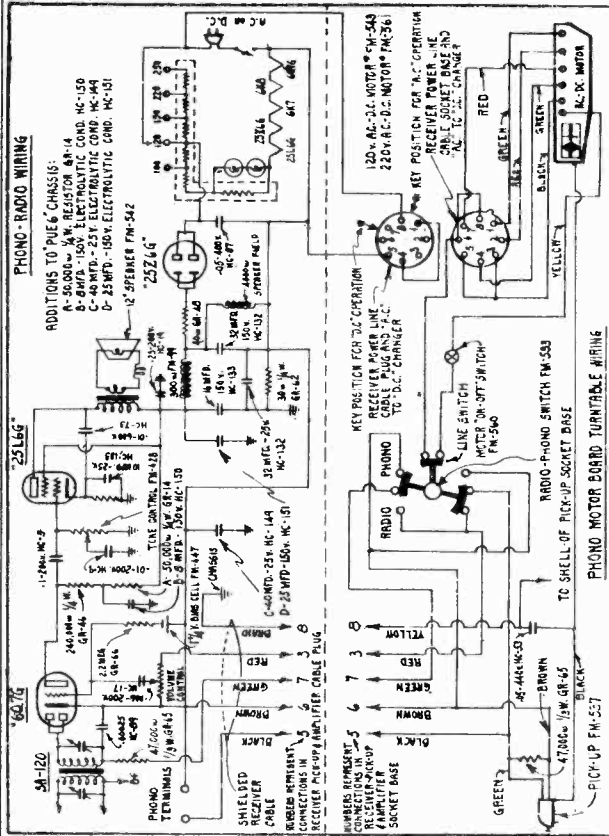


I.F. ADJUSTING SCREWS
 "M" BAND OSC. SERIES TRIMMER
 "S" BAND OSC. SHUNT TRIMMER
 "I" BAND ANT. SHUNT TRIMMER
 "5" BAND ANT. SHUNT TRIMMER



ANDREA RADIO CORP.

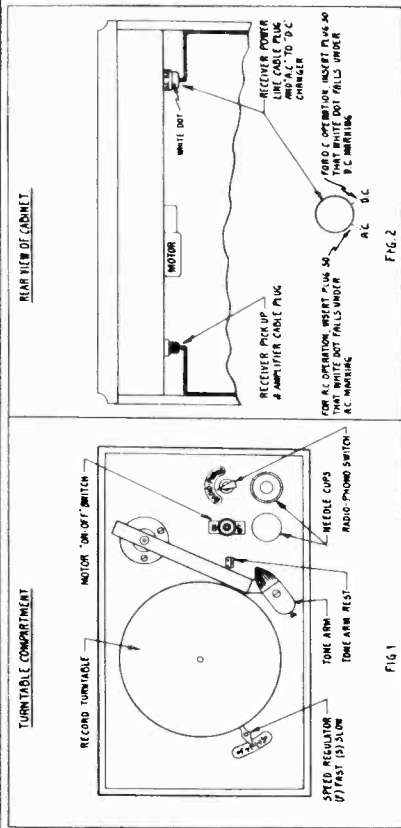
MODEL 634, Chassis PUE6S
 MODEL 635, Chassis PUE6L
 Schematic, Phono. Data



VOLUME & TONE CONTROL
 The volume control and tone control on the front of the cabinet regulate both the radio and phonograph.
TURNTABLE SPEED:
 Recordings are made with the turntable moving at the rate of 78 revolutions per minute. Consequently, the best reproduction is obtained at that speed. Put the record on the turntable, with a slip of paper part way under it so that the paper can be used as a revolution counter. Then adjust the speed control fast or slow, until the turntable revolves 78 times each minute.
PHONOGRAPH NEEDLES:
 Although various types of needles are sold for use in phonographs only the standard size loud or medium needles are recommended. Special needles may be entirely unsuited for use on this machine and may result in loss of tone quality. There is a wedge-shaped groove under the head of the pick-up to direct the needle into the mounting hole. When you become acquainted with the use of this needle guide, you will find it a very easy matter to change needles quickly.

SPECIAL NOTES:

Always keep your records covered. Otherwise dirt will collect in the record grooves, resulting in high needle scratch and poor quality. Always store the records in a cool place. Be sure to replace needle after each playing. Never allow the pick-up to fall on the needle point.



INSTRUCTIONS FOR INSTALLING AND OPERATING ANDREA AC-DC PHONOGRAPH MODELS 634 - 635

WARNING:

For protection in shipping, the radio chassis of this combination is bolted tightly to the shelf on which it is mounted. Before connecting this instrument to the power line, loosen the four mounting bolts, located under the shelf by turning them out about 6 turns, in order that the chassis can float freely on the shock-absorbing strips. Unless this is done, objectionable noises may be set up in the loud speaker.

MOTOR VOLTAGE:

Andrea phonograph combinations are connected at the factory for use on 110-130 V., 50-60 cycles AC, or 110-130 V. DC. Other voltages for AC-DC models are available only on special order. To change the connections for AC, or DC-current, remove the plug shown in Fig. 2, and turn it so that the white dot points toward the current required, and insert the plug again.

RECEIVER VOLTAGE:

Be sure to have the service man check the line voltage tap on the radio receiver chassis. This controls the radio ONLY, and does NOT change the phonograph motor.

RADIO-PHONOGRAPH SWITCH:

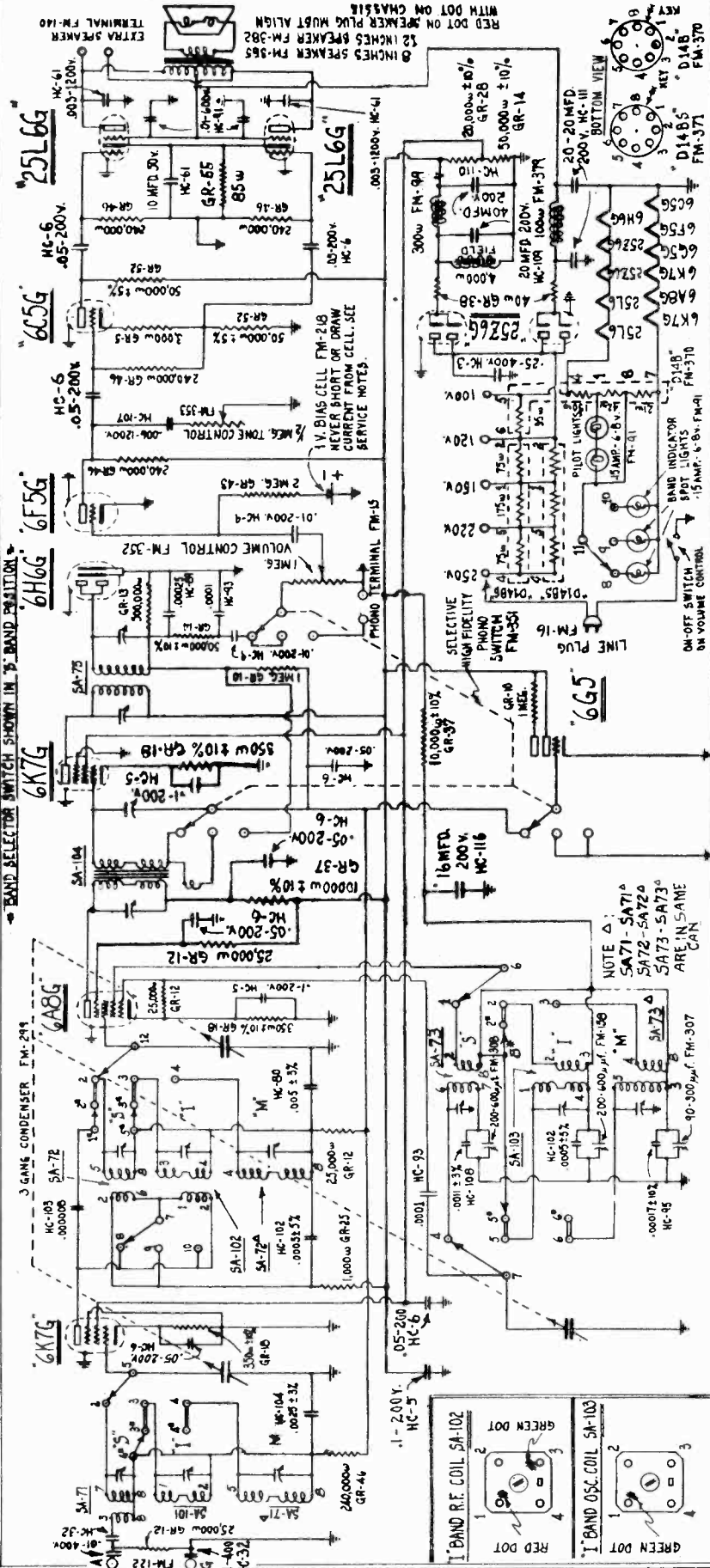
Fig. 1 shows the arrangement of the phonograph turntable controls. The radio-phonograph switch, when in the RADIO position, connects the speaker for radio reception. When this switch is turned to the PHONO position, current is connected to the turntable motor, and the pick-up, and the speaker are connected for reproducing phonograph records. The phono-motor can be turned on or off independently by the motor control switch, shown in Fig. 1.

FOR OTHER DATA, SEE THE PAGES FOR CHASSIS PUE6S & PUE6L

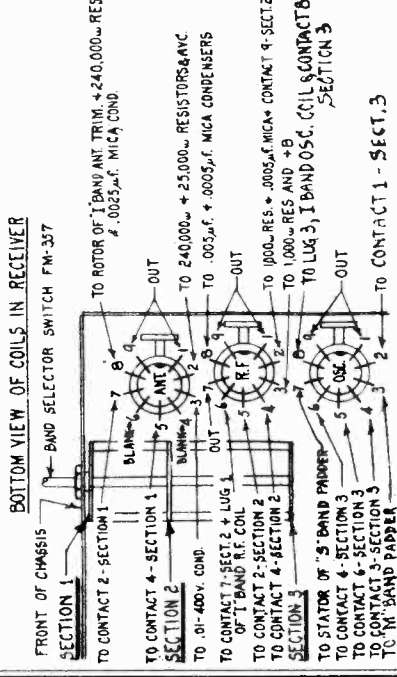
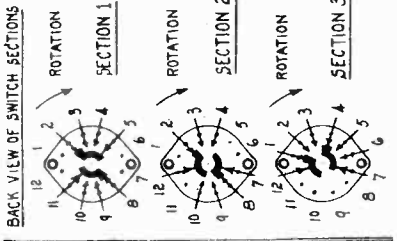
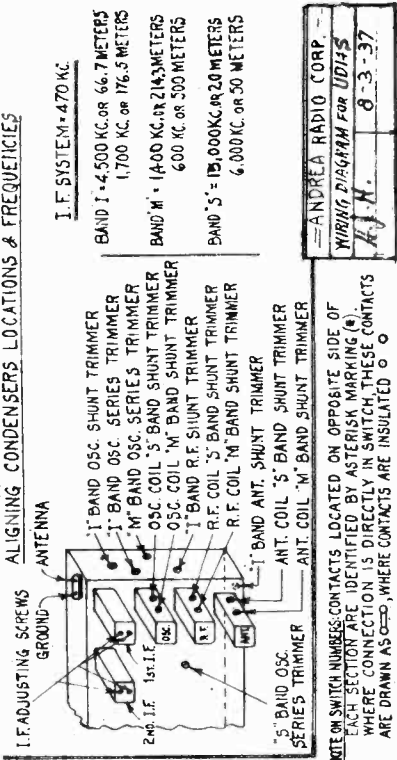
MODELS 1402,1404,1406
1408,1410

ANDREA RADIO CORP.

Chassis UD14S
Schematic, Coils, Alignment
Parts



CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION VOL. VIII



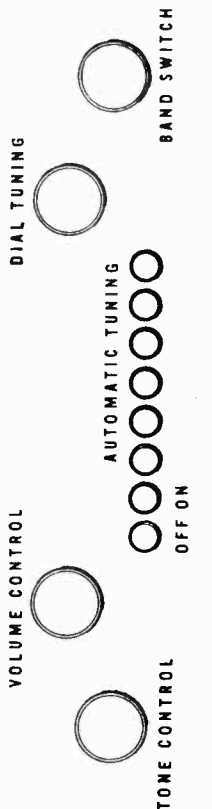
I.F. SYSTEM = 470 KC.
 BAND I = 4,500 KC. OR 66.7 METERS
 1,700 KC. OR 176.5 METERS
 BAND M = 14,000 KC. OR 214.3 METERS
 600 KC. OR 500 METERS
 BAND S = 15,000 KC. OR 200 METERS
 6,000 KC. OR 50 METERS

ANDREA RADIO CORP.	
WIRING DIAGRAM FOR UD14S	
DATE	8-3-37

NOTE ON SWITCH NUMBERS: CONTACTS LOCATED ON OPPOSITE SIDE OF EACH SECTION ARE IDENTIFIED BY ASTERISK MARKING (*). WHERE CONNECTION IS DIRECTLY IN SWITCH THESE CONTACTS ARE DRAWN AS \odot , WHERE CONTACTS ARE INSULATED \circ .

ANDREA RADIO CORP.

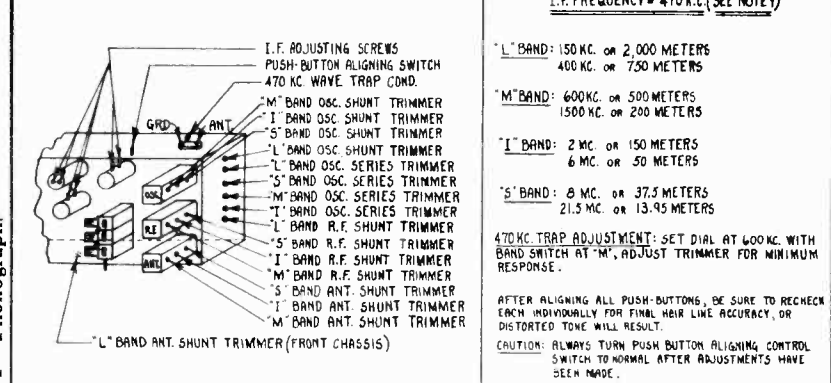
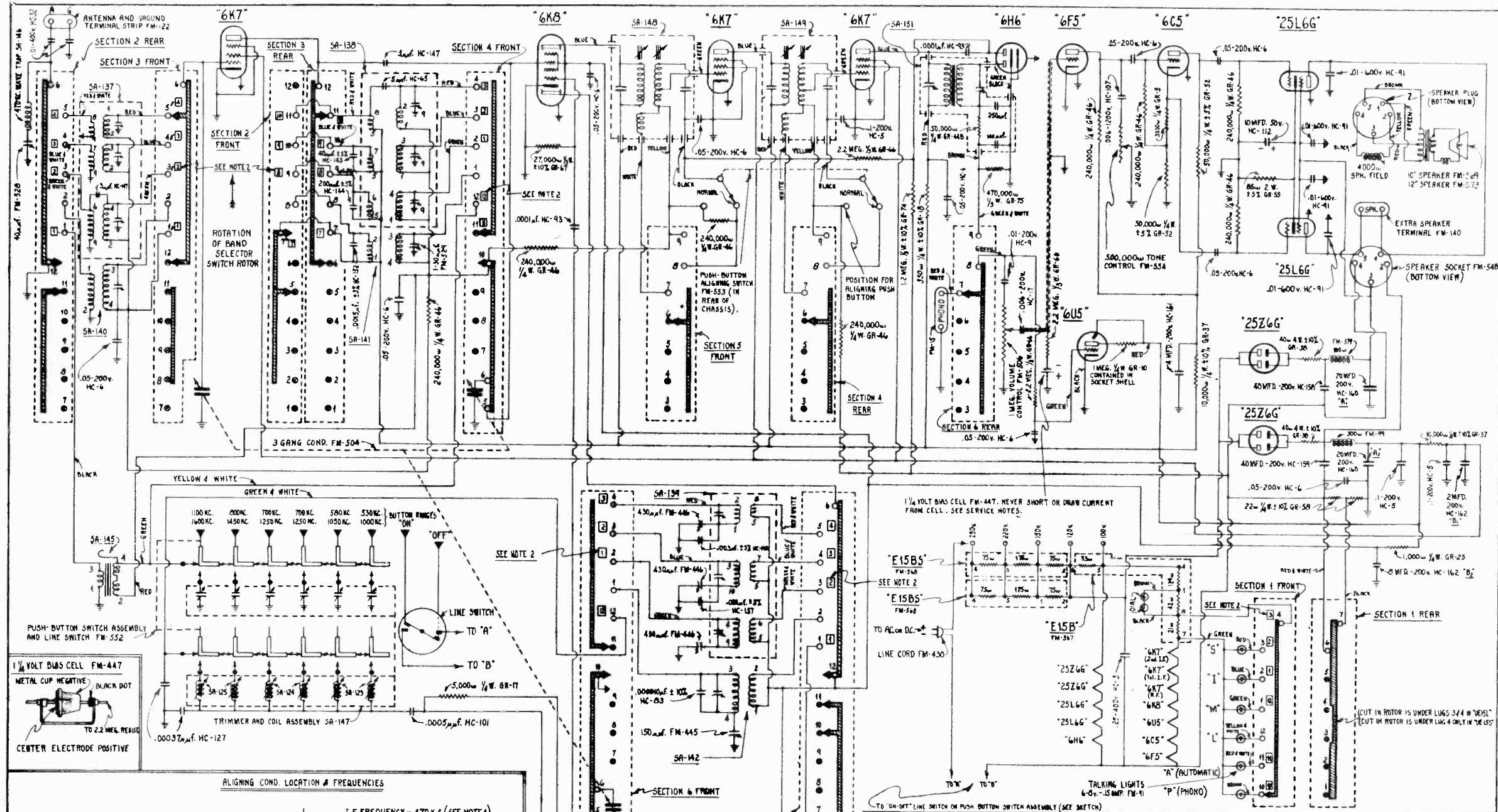
MODELS 1530,1534,1536,1538,Chassis FUES
MODELS 1531,1533,1535,1537,Chassis PUEL
Schematic,Coils,Trimmers,Data,Parts



Automatic push button tuning operates only on the broadcast or medium wave band when the switch is in the "A" position. Manual tuning must be used for the other wave bands. On the table models and consoles, the phonograph pick-up terminals are connected to the high-fidelity audio-amplifier when the band switch is in the "P" position. On the combination models, turning the band switch to the P position turns on the current for the phonograph motor and connects the pick-up to the amplifier.

IMPORTANT AC-DC MODEL NOTES
Special notes on connecting AC-DC sets: NEVER connect a ground wire directly to the metal chassis. The external ground wire must be connected ONLY to the ground (black) lead. ALWAYS disconnect the power from the set before removing the rear dust cover, to avoid electric shock. When operating an AC-DC set on direct current, if no signals are heard after the set has been turned on for one minute, reverse the plug in the electric light socket.
BAND SWITCH
Band switch controls button tuning, manual tuning, and phonograph: The right hand, outside knob on the Standard Tuning or Long Wave Tuning sets is marked:
S I M A P
S—Short Waves I—Intermediate Short Waves M—Broadcast or Medium Waves P—Phonograph.
Standard Tuning
S I M A P
S—Short Waves I—Intermediate Short Waves M—Broadcast or Medium Waves P—Phonograph.

Long Wave Tuning
I M L A P
I—Intermediate Short Waves M—Broadcast or Medium Waves P—Phonograph.



I.F. FREQUENCY = 470 K.C. (SEE NOTE 1)

"L" BAND: 150 KC. or 2,000 METERS 400 KC. or 750 METERS	"M" BAND: 600 KC. or 500 METERS 1500 KC. or 200 METERS	"I" BAND: 2 MC. or 150 METERS 6 MC. or 50 METERS
"S" BAND: 8 MC. or 37.5 METERS 21.5 MC. or 13.95 METERS	470 KC. TRAP ADJUSTMENT: SET DIAL AT 600 KC. WITH BAND SWITCH AT "M", ADJUST TRIMMER FOR MINIMUM RESPONSE.	

AFTER ALIGNING ALL PUSH-BUTTONS, BE SURE TO RECHECK EACH INDIVIDUALLY FOR FINAL AIR LINE ACCURACY, OR DISTORTED TONE WILL RESULT.
CAUTION: ALWAYS TURN PUSH BUTTON ALIGNING CONTROL SWITCH TO NORMAL AFTER ADJUSTMENTS HAVE BEEN MADE.

"M"-"I"-"S" BANDS ANT. COIL SA-137	"M"-"I"-"S" BANDS R.F. COIL SA-138	"M"-"I"-"S" BANDS OSC. COIL SA-134
"L" BAND ANT. COIL SA-140	"L" BAND R.F. COIL SA-141	"L" BAND OSC. COIL SA-142

NOTE:
1- ALWAYS ADJUST I.F. SYSTEM WITH BAND SWITCH IN "I" POSITION AND DIAL SET AT 3 MC.
2- NUMBERS IN SQUARES ARE THE LUG CONNECTIONS FOR "UEWS" REC.
3- BAND SELECTOR SWITCH (FOR "UEWS" REC. FM-555, FOR "UEWS" REC. FM-554) SHOWN IN "PHONO" POSITION.
4- PUSH BUTTON SWITCH SHOWN IN NEUTRAL POSITION WITH LINE SWITCH IN THE "OFF" POSITION.
5- ● INDICATES THAT THERE IS NO CONTACT IN THE BAND SELECTOR SWITCH AT THIS POSITION.
6- SA-140, SA-141, SA-142, HC-152, HC-83, FM-445, FM-524 ARE USED IN "UEWS" RECEIVER ONLY AND OMITTED IN "UEWS" REC.
7- "A" & "B" ARE IN SAME CONTAINER, "C" & "D" ARE IN SAME CONTAINER.

CAUTION: TO DISMOUNT PUSH BUTTON ASSEMBLY FROM CHASSIS, SIMPLY REMOVE TWO FRONT AND TWO REAR SCREWS HOLDING BRACKETS TO FLANGE OF CHASSIS; DISCONNECT GREEN & WHITE, RED & WHITE, BLUE & WHITE, YELLOW & WHITE WIRE; ON ASSEMBLY, REMOVE A.C. SWITCH LEADS AT TERMINAL STRIP LOCATED ON SIDE OF CHASSIS; THE ENTIRE ASSEMBLY MAY THEN BE TAKEN OUT.

PUSH BUTTON ALIGNING CONTROL SWITCH
LOCATION OF PUSH BUTTON ALIGNING COND. & CONTROL SWITCH IN REAR OF CHASSIS
PUSH BUTTON ANT. COIL SA-145
BRACKET USED AS LUG #4 (REAR VIEW OF COIL)

ANDREA RADIO CORP.
NEW YORK, N. Y.
J. R. DATE 9-25-36
PART NO.

AC-DC Voltage Taps and Frequency Switch on models 1530 and 1531 provides for operation on 90-110, 110-130, 140-160, 210-230, and 240 to 260 volts, 40-60 cycles.

Alignment, Notes

ANDREA RADIO CORP.

MODELS 1530, 1534, 1536, 1538

Chassis PUES

MODELS 1531, 1533, 1535, 1537

Chassis PUEL



Standard Tuning 1530	Long Wave Model Tuning 1531	Standard Tuning 1536	Long Wave Tuning 1535
Standard Tuning 1534	Long Wave Model Tuning 1533	Standard Tuning 1538	Long Wave Tuning 1537

AC-DC Voltage Taps and Frequency: Switch on models 1530 and 1531 provides for operation on 90-110, 110-130, 140-160, 210-230, and 240 to 260 volts, 40-60 cycles

(Chassis Numbers PUE L and PUE S)

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.

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.

Alignment can be carried out on these models at any band without affecting any of the other bands.

470 KC. I. F. ALIGNMENT

During the alignment of the I.F. system, be sure that the push-button alignment switch, located at the rear of chassis, is turned to the position marked "HERE" while adjusting buttons. After the alignment has been completed, the switch must be turned to the position marked "HERE for normal operation". Otherwise, the alignment will not be accurate.

Connect the high-potential lead of the signal generator, in series with a .1 mfd. condenser, to the grid of the 6K8 tube. Turn the wave band switch to "I" Band. Set the generator at 470 kc., and adjust the output until a small deflection is obtained in the output meter. Adjust the screws on the side of the 1st and 2nd I.F. transformers (See circuit diagram) for maximum deflection on the output meter. When this has been completed, touch up each adjustment again for the final setting. Next, disconnect the generator from the grid of the 6K8 tube. This completes the alignment of the I.F. system.

"S" BAND ALIGNMENT

Turn the wave band switch to the "S" position, and connect the high-potential lead of the generator, in series with a .1 mfd. condenser, to the grid of the 6K8 tube.

The following oscillator adjustment is necessary only if the dial calibration is considerably out of line. If it is not, align only the R.F. and Antenna trimmers.

Set the signal generator at 21,500 kc. and the receiver at 21.5 mc. Adjust the oscillator shunt trimmer slowly between maximum and minimum. A signal will be heard at two settings of the trimmer, one near the minimum capacity (plates open), and the other near the maximum capacity (plates closed). Set the trimmer at the point where the signal is heard near the minimum capacity. The adjustment near the maximum capacity is at the image frequency. This will tell you whether the OSC shunt trimmer only is adjusted correctly, or the right signal setting has been used on the test generator. In this case ONLY the image and fundamental will have the same intensity.

Remove the generator from 6K8 and put it on 6K7 R.F. tube control connection. Align the R.F. shunt trimmer for maximum signal. During this adjustment, be certain to rotate the gang condenser back and forth for each small adjustment of the R.F. shunt trimmer. Remove the generator connection from 6K7 and connect it in series with 400 ohm resistor to the "Ant" terminal of the receiver. Align the antenna shunt trimmer for maximum signal. During this process, rock the gang condenser back and forth for each small change of the antenna shunt trimmer, until you have obtained maximum response. Touch up the R.F. shunt trimmer for final setting. Check to see that alignment was not made on image signal (See section following).

Set the generator at 6,000 kc., and adjust the receiver to pick up the signal. Adjust the oscillator series trimmer carefully, rocking the gang condenser for each small change of the trimmer, until you obtain maximum response.

Do not touch the antenna, R.F., or oscillator shunt trimmers during this adjustment.

Set the generator at 21,500 kc., and tune the receiver for that signal. Retune the antenna and R.F. shunt trimmers for exact, final settings. During this adjustment, do not touch the oscillator shunt trimmer. This completes the adjustment of the "S" band.

FUNDAMENTAL AND IMAGE FREQUENCY NOTES:

A simple method of checking the receiver and signal generator to determine if they are tuned for correct alignment is as follows:

Set the signal generator at 21,500 kc. and tune the receiver slowly from about 20,000 kc. to 22,500 kc. Two signals should be heard, 940 kc. apart. One of them will be lower in frequency than 21,500 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 an additional check, leave the receiver tuned to the higher frequency. Very slowly, increase the generator frequency from 21,500 kc. to about 22,500 kc. A signal will be heard near 22,500 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.

INTERMEDIATE "I" BAND ALIGNMENT:

Put the wave band switch at the "I" position, set the generator at 6,000 kc., and the receiver at 6 mc. Align the ANT and R.F. shunt trimmers for maximum signal. Be sure to rock the gang condenser during this adjustment. Then set the signal generator at 2,000 kc. and the receiver at 2 mc. Adjust the OSC series trimmer for maximum signal, rocking the gang condenser for each small adjustment of the trimmer. Reset the generator at 6,000 kc. and the set at 6 mc. and retune the ANT and R.F. shunt trimmers for maximum signal. This completes the alignment of the "I" band.

MEDIUM BAND "M" ALIGNMENT:

- 1. Turn the wave band selector switch on the set to the "M" position and set the generator for 1,500 kc. Connect the high-potential lead of the generator, in series with a .1 mfd. condenser, to the grid of the 6K8 tube. Tune the receiver to 1,500 kc. (120 m.) on the tuning scale. If no signal is heard, leave the scale pointer at 1,500 kc., and adjust the oscillator coil shunt trimmer slowly until a signal is heard.
- 2. The oscillator coil of the receiver and the dial are now set correctly, assuming that the test generator calibration is correct.
- 3. Remove the generator lead from the grid of the 6K8. Replacing the .1 mfd. condenser by a .00025 mfd. condenser, connect the lead to the antenna terminal of the receiver, leaving all the other settings the same.
- 4. Adjust the R.F. coil shunt trimmer, and the ANT coil shunt trimmer of the "M" band for maximum signal response.
- 5. Retune the generator to 600 kc. (500 m.), and tune the receiver to this same frequency.
- 6. Adjust the oscillator coil series trimmer slowly, while rotating the gang condenser back and forth slightly for each small adjustment of the series trimmer. Continue this until a further adjustment of the trimmer does not increase the signal. During this adjustment, do not touch the ANT, R.F., or OSC shunt trimmers.
- 7. Reset the test generator and the receiver to 1,500 kc. Tune the test signal accurately on the receiver. Adjust the ANT and R.F. shunt trimmers lightly for the maximum output. DO NOT ADJUST THE OSC SHUNT TRIMMER. This completes the alignment of the "M" band.

470 KC. CODE REJECTION CIRCUIT ALIGNMENT:

Set wave band switch on "M" position and tune receiver to 530 kc. Connect the high-potential lead of generator in series with a .00025 mfd. (.250 muf.) condenser to antenna terminal of receiver. Then turn signal generator to 470 kc. and increase output until a loud signal is heard. Adjust 470 kc. rube condenser for MINIMUM SIGNAL. This must be done carefully otherwise poor results may occur.

"L" BAND ALIGNMENT

- 1. Turn the wave band selector switch to the "L" position. Set signal generator for 150 kc. and connect generator high-potential lead in series with a .1 mfd. condenser to the grid of 6K8 tube.
- 2. Set receiver dial to 150 kc. (2,000 meters).
- 3. Adjust the L.W. series oscillator trimmer until the loudest signal is heard. This point is required because of the wide frequency range the L.W. series oscillator trimmer has on the oscillator frequency. Due to this wide change in frequency it is possible that several different adjustment points in the L.W. oscillator series trimmer will produce output signals, but only one of these is correct (the loudest).
- 4. Set the generator and receiver dial to 400 kc. (750 meters) and adjust the L.W. oscillator shunt trimmer until a signal is heard.
- 5. After readjusting the L.W. oscillator shunt trimmer, it is very important that the generator and the set dial be set for 150 kc. (2,000 meters) and the L.W. series oscillator trimmer readjusted in accordance with paragraph 3. Set the generator and receiver dials back to 400 kc. (750 meters) and adjust L.W. oscillator shunt trimmer until a signal is heard.
- 6. Remove generator lead from the grid of the 6K8. Replace the .1 mfd. condenser with a .00025 mfd. condenser, and connect the lead to the antenna terminal of the receiver.
- 7. Set generator and receiver dial to 400 kc. (750 meters).
- 8. Adjust the antenna and the R.F. shunt trimmers for maximum output deflection.
- 9. Change the generator and receiver to 150 kc. (2,000 meters). Adjust the L.W. series oscillator trimmer for maximum deflection. BE CERTAIN TO ROTATE GANG CONDENSER FOR EACH ADJUSTMENT OF THE SERIES TRIMMER.
- 10. Repeat the adjustments set forth in paragraphs 7 and 8, or the receiver will not be aligned correctly because of the effect described in paragraph 3.
- 11. After carrying out instruction 10, be sure to repeat 9.
- 12. Both 8 and 9 must be repeated until it is noticed that the trimmers no longer improve the alignment. The long wave band is now aligned.

SPECIAL NOTES

To remove the push-button assembly from the chassis, simply take out the four screws holding the brackets to the front and rear flange of the chassis, and unsolder the AC switch leads at the side of the chassis plus the yellow and white lead on the push-button switch, and the blue and white, red and white, and green and white wires on the terminal strip. (See circuit diagram.) In this way any servicing is easily handled. The receiver, of course, can be operated and worked normally without this assembly on all bands except the "A" band. In case the assembly has been removed, it is advisable to readjust each button after remounting.

BIAS CELL

This receiver incorporates a bias cell in the grid of the audio tube, as shown in the wiring diagram. In case you remove the cell, handle it with the greatest care. Do not put your fingers across the terminals, for this will have the effect of short-circuiting the electrodes, and the voltage will not return to normal for several hours.

NEVER test this cell with an ordinary voltmeter. Since this a "no-current" cell, the only way to test it accurately is with a vacuum tube voltmeter. Always insert the cell in the mounting assembly so that the metal container (negative side) contacts the cell-holder pin with the black dot. This cell can be expected to render at least three years' service before it requires replacement.

MODELS 1530, 1534, 1536, 1538

Chassis PUES

MODELS 1531, 1533, 1535, 1537

Chassis PUEL

ANDREA RADIO CORP.

Tuner Data, Phono.

Standard Tuning 1530	AC-DC MODELS	Long Wave Model Tuning 1531
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Standard Tuning 1534	AC-DC CONSOLE MODELS	Long Wave Tuning 1533
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Standard Tuning 1536	AC-DC COMBINATION MODELS	Long Wave Tuning 1535
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Standard Tuning 1538	AC-DC AUTOMATIC COMBINATIONS	Long Wave Tuning 1537
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SETTING BUTTON CONTROLS CHASSIS NUMBERS PUE-L, PUE-S.

Accurate adjustments can be made easily: The simplicity of the Andrea Radio push button controls, requiring only the use of a thin-blade screwdriver, makes it easy to set them accurately. This is essential, for unless the controls are set exactly, the tone quality will be destroyed.

CHOOSING YOUR STATIONS

Make a list of the stations: Set down the call letters of the six stations required, and put them in the order of their kilocycles rating, the lowest at the top, corresponding to Station 1 selecting button at the left. The kilocycle tuning ranges of the button controls are:

- | | |
|---------------|-----------------------------|
| Extreme Left | OFF |
| | ON |
| | Station 1— 530 to 1000 kc. |
| | Station 2— 580 to 1050 kc. |
| | Station 3— 700 to 1250 kc. |
| | Station 4— 700 to 1250 kc. |
| | Station 5— 800 to 1450 kc. |
| | Station 6— 1100 to 1600 kc. |
| Extreme Right | |

It is necessary, of course, to choose stations whose kilocycle ratings come within these button tuning ranges. The ranges given in the list above are conservative. Consequently, it may be possible to tune in a station which is just outside the range of any particular button control. For example, on Station 3, although, the range is shown as 700-1250 kc., it may be possible to tune in a station on 660 kc., or one on 1300 kc.

MARKING THE BUTTONS

Remember the transparent disks: When you have made up your station list, locate the call letters on the station-call marker sheets, and punch them out carefully. If lettered markers are not provided for the stations you want, use the blank markers, and print the station letters on them.

First insert the "OFF" marker in the extreme left hand button, and the "ON" marker in the adjacent button. Then, after selecting the proper markers for the stations on your list, insert the markers in the same order as your kilocycle list, starting with Station 1 on the third button from the left. Don't attempt to glue the markers in place. Instead, put a transparent disc over each marker, that will hold it in place permanently. Use the end of a lead pencil to press these discs into position. In case you want to change a marker, you can pry it out with the point of a pin.

ADJUSTING THE CONTROLS

Remember to set the button adjusting switch: At the rear of the chassis is a switch with a red knob. While adjusting the controls, and only at that time, the knob should be turned to the upper position. Put the wave band switch in the "M" position, for dial tuning.

Tune in the station using call letters you have put on the first button. Then turn the band switch to position "A". Push in the button you are going to adjust, and turn the volume control to maximum. When the set has been turned "ON" for at least 10 minutes so that it has become thoroughly warm, you will be ready to make the button adjustments.

The adjusting screws can be reached easily through holes at the rear of the chassis. Each button has two adjustment controls marked "ANT" and "OSC", in pairs. The pair corresponding to the Station 6 on your list is at the extreme left. This set is so designed that the tuning indicator operates with the push-buttons as well as with manual tuning. Therefore, you can adjust the controls with absolute accuracy by watching the opening and closing of the indicator. The exact setting for each adjustment is obtained when the ray is closed as far as possible.

Use a thin-blade screwdriver to adjust the screws. Don't force a thick blade into the slots. First adjust the oscillator screw for Station 1, turning it until you hear the station you tuned in previously on the dial. If the speaker breaks into a howl during this adjustment, turn the Station 1 antenna screw to the right or left until the howl stops. After you have an accurate setting of the oscillator screw, adjust the corresponding antenna screw for maximum volume. The final adjustment should be made by turning the oscillator screw while you watch the opening of the Mystic Ray. Then, in the same way, get a final adjustment for the antenna screw. For a still sharper setting, disconnect the antenna lead. Connect a 6-inch length of insulated wire to the antenna terminal and twist the antenna lead lightly around it. Again, adjust the oscillator and antenna screws for maximum response from each station.

To check the accuracy of the settings, turn the wave band switch to position M. The station should sound practically the same whether the switch is in the A or M position. If there is considerable difference, the station was not tuned accurately with the dial or else the corresponding button controls were not set correctly.

Repeat the same routine for button No. 2, adjusting the No. 2 oscillator and antenna screws, and continue the process in the same way for the other controls.

To change any button to another station, if the station's kilocycle rating is within the range of the corresponding controls, it is only necessary to put in a new button marker, and to reset the controls in accordance with the preceding instructions.

PHONOGRAPH RECORDS

Table model: On the table models, connections are provided at the rear of the chassis for plugging in an electric phonograph pick-up, used with a separate turntable. When the band switch is in the "p" position, the pick-up terminals at the back of the chassis are connected to the amplifier.

Console models: The console models use the same cabinet as the combination models, so that you can have a phonograph turntable and pick-up installed in the phonograph compartment provided at any time. The pick-up, which should be plugged into the terminals at the back of the chassis, is connected to the amplifier when the band switch is in the "p" position.

Combination models: These models are so wired that, when the band switch is turned to the "p" position, current is connected to the turntable motor and the pick-up is connected to the amplifier. On all three types of models, the volume control and the tone control operate with the phonograph.

AUTOMATIC TUNING

Buttons cut in high-fidelity circuit: An important improvement in Andrea push-button tuning is the use of high-fidelity circuits which are cut in when any push-button is operated. This provides extra tone quality for your favorite local stations. At the same time, extra selectivity is obtained on manual tuning.

CAUTION

This is very important: When all adjustments have been made, it is necessary to touch up each one again, to assure absolute accuracy. After this has been done, turn the switch with the red knob, at the rear of the chassis, to the lower position marked "HERE for normal operation". Otherwise, loss of efficiency will result. Last of all, make sure that the antenna is connected again.

IMPORTANT!

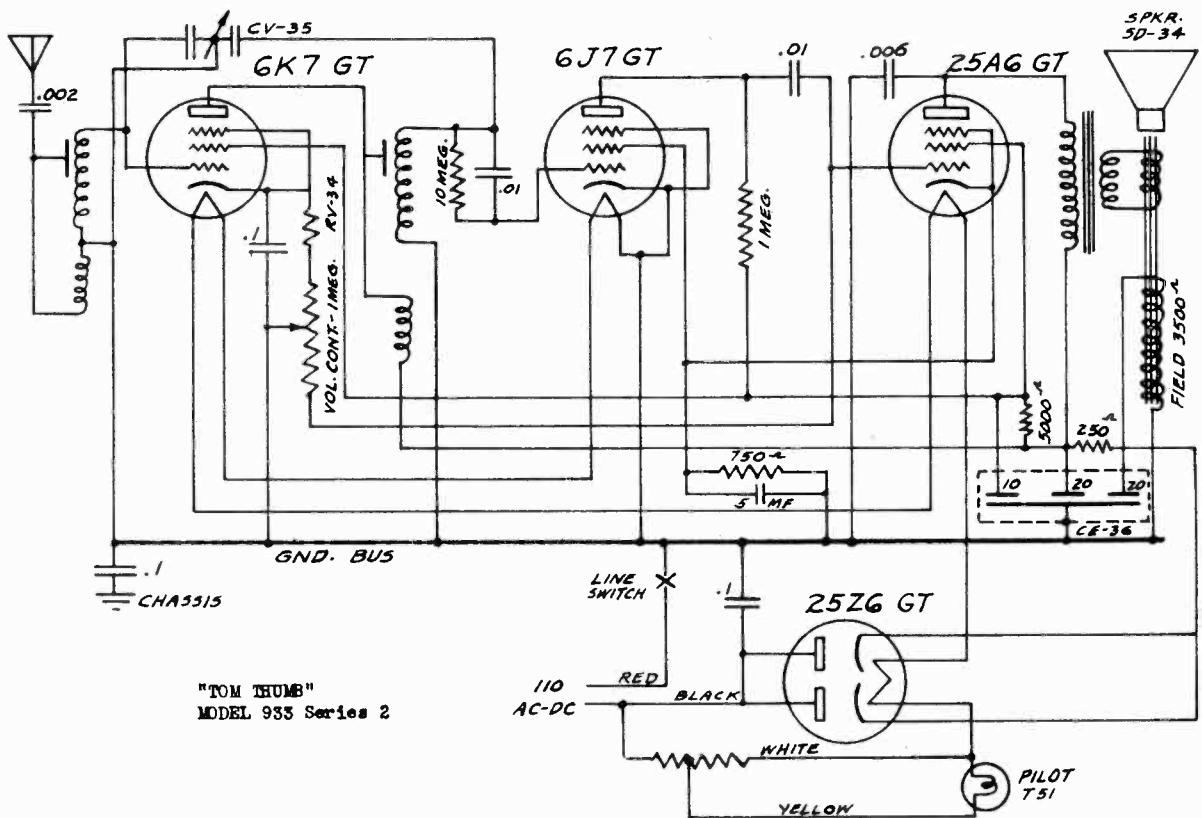
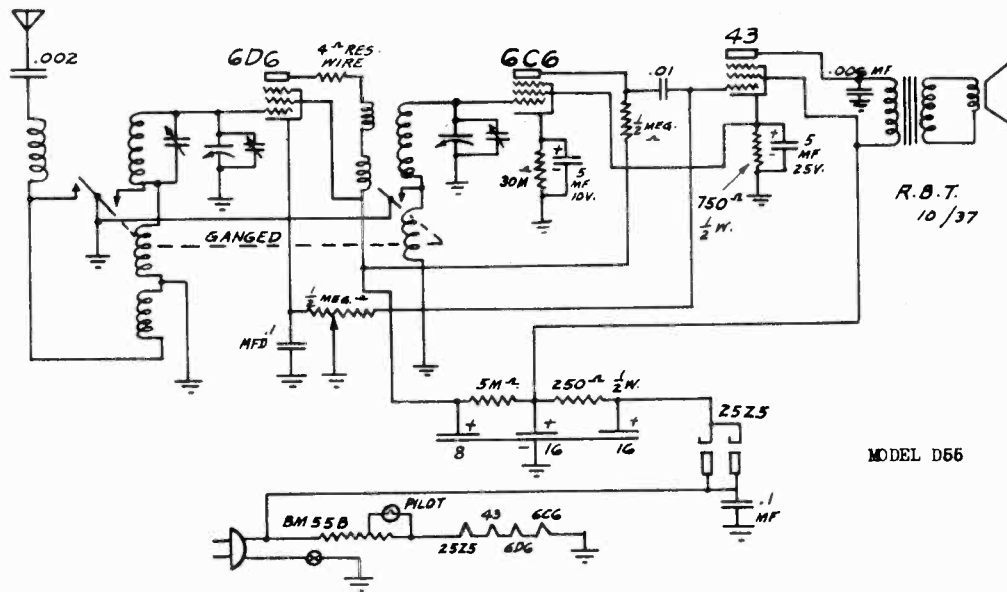
If you find it necessary to replace any part in this receiver, bear this in mind: In order to maintain the high performance standards of Andrea Radio receivers, the components parts on all Andrea models are held to exceedingly close tolerance limits. Furthermore, Andrea components are given the exclusive "Climate Sealed" treatment which protects them from all weather and temperature conditions. Consequently, standard Andrea Radio replacement parts must be used for all service work, for the substitution of ordinary, stock items will result in inferior performance.

TALKING LIGHTS

Position of band switch indicated by Talking Lights: The different colored lights on the dial indicate the wave band which is in use, or shows when automatic tuning or the phonograph pick-up are cut in.

AUTOMATIC RADIO MFG. CO., INC.

MODEL D55
MODEL Tom Thumb,
933, Series 2
Schematics

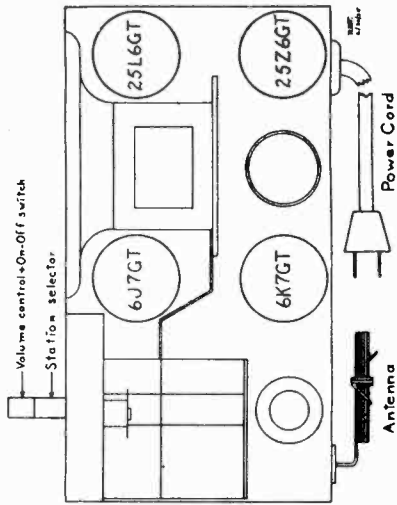


"TOM THUMB"
MODEL 933 Series 2

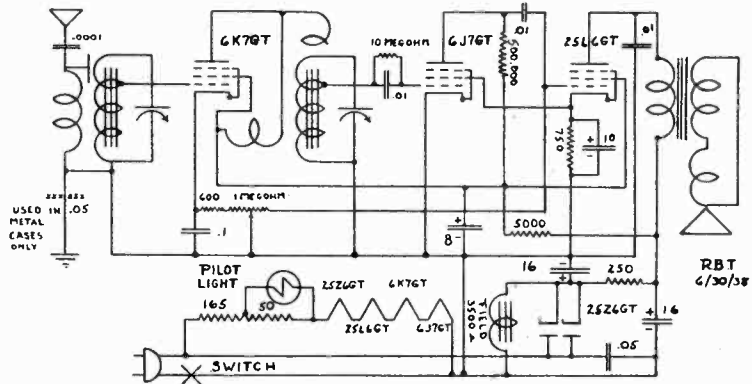
MODELS 845, 960, 963
 MODELS 933, 935
 MODELS 950, 955
 Schematics, Layouts

AUTOMATIC RADIO MFG. CO., INC.

TUBE LOCATION CHART — MODELS 933-935

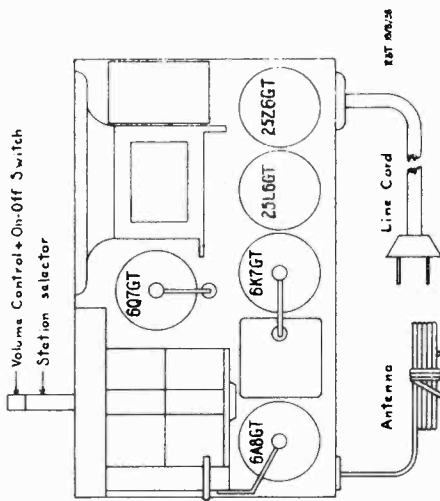


SCHEMATIC DIAGRAM — MODELS 933-935



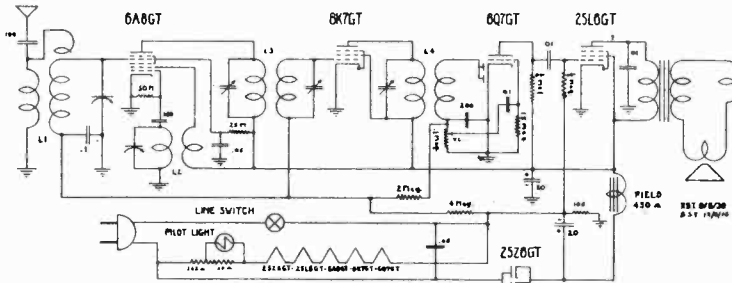
105-125 volts AC or DC

TUBE LOCATION CHART — MODELS 950-955



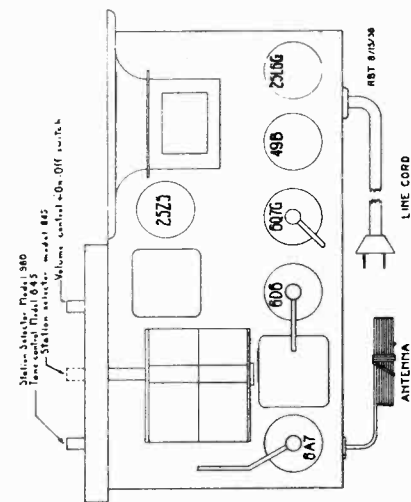
SCHEMATIC DIAGRAM — MODELS 950-955

IF PEAK 456 KC



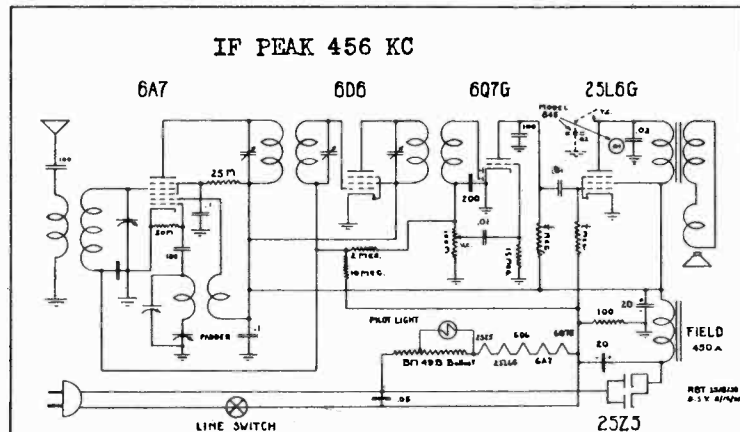
105-125 volts DC or AC

TUBE LOCATION CHART—MODELS 960-963-845



SCHEMATIC DIAGRAM—MODELS 960-963-845

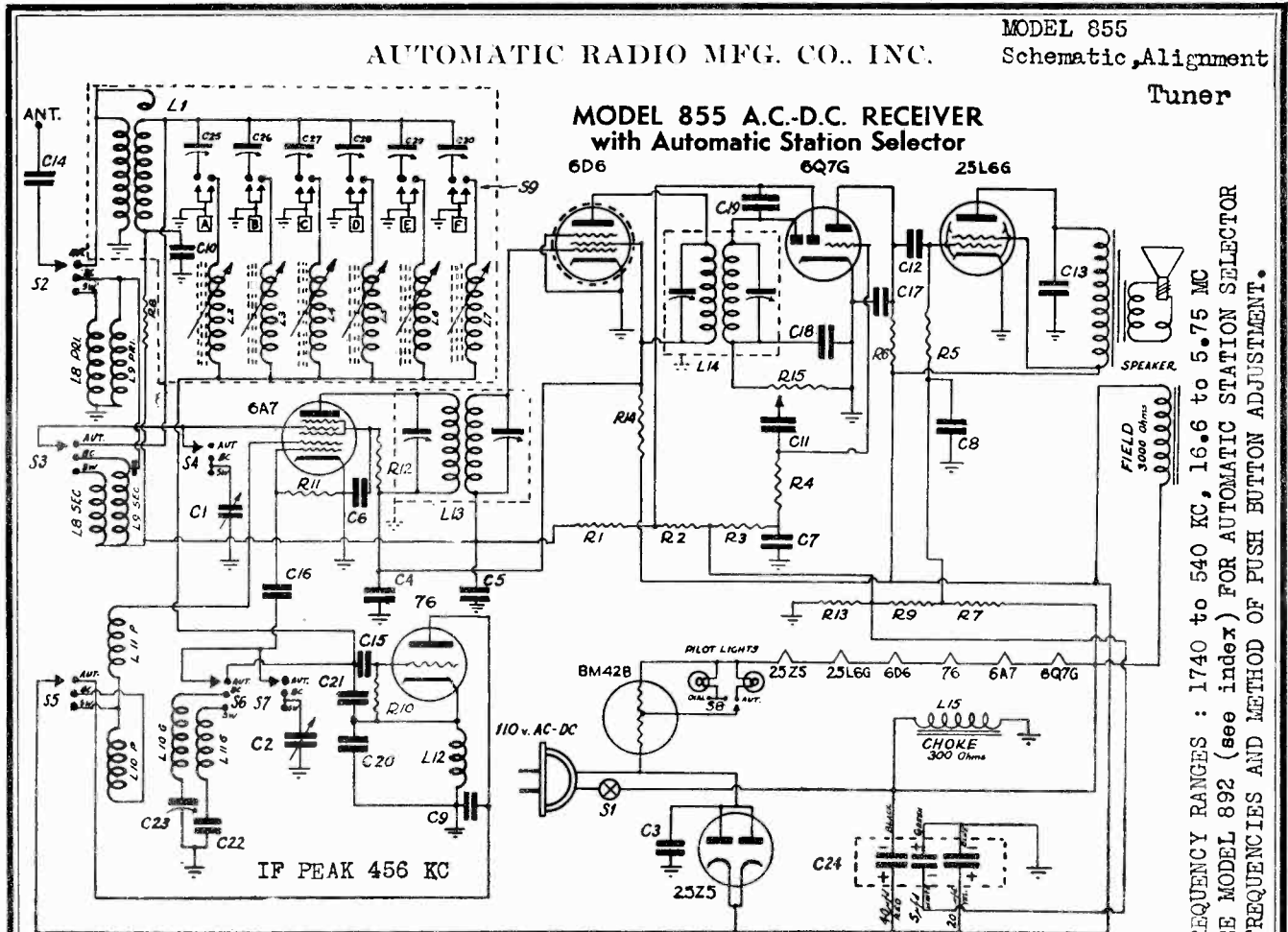
IF PEAK 456 KC



105-125 volts AC or DC

AUTOMATIC RADIO MFG. CO., INC.

MODEL 855
Schematic Alignment



Tuner
FREQUENCY RANGES : 1740 to 540 KC, 16.6 to 5.75 MC
SEE MODEL 892 (see index) FOR AUTOMATIC STATION SELECTOR
FREQUENCIES AND METHOD OF PUSH BUTTON ADJUSTMENT.

C1, C2	2 Sect. Variable Condenser	R1, R2	Resistors	2 megohms— $\frac{1}{4}$ Watt
C3, C4, C5, C6, C7	Fixed Condensers	R3, R4	"	1 megohm— $\frac{1}{4}$ Watt
C8, C9, C10	Fixed Condensers	R5	"	$\frac{1}{2}$ megohm— $\frac{1}{4}$ Watt
C11, C12, C13	Fixed "	R6	"	$\frac{1}{4}$ megohm— $\frac{1}{4}$ Watt
C14	Fixed "	R7	"	150,000 ohms— $\frac{1}{4}$ Watt
C20, C21	Fixed "	R8	"	100,000 ohms— $\frac{1}{4}$ Watt
C15, C16, C17, C18	Mica "	R9	"	75,000 ohms— $\frac{1}{4}$ Watt
C19	Mica "	R10, R11	"	50,000 ohms— $\frac{1}{4}$ Watt
C22	Fixed Padder	R12	"	25,000 ohms— $\frac{1}{4}$ Watt
C23	Variable Padder	R13	"	12,500 ohms— $\frac{1}{4}$ Watt
C24	Electrolytic Condenser	R14	"	30 ohms— $\frac{1}{4}$ Watt
C25, C26, C27, C28, C29, C30	Dual Trimmer Condensers	R15	Volume Control	$\frac{1}{4}$ megohm

ALIGNMENT PROCEDURE

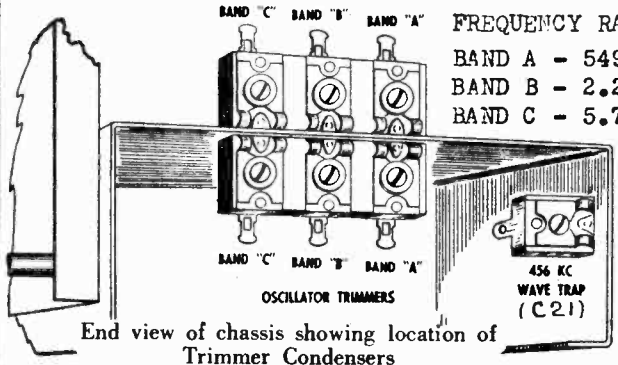
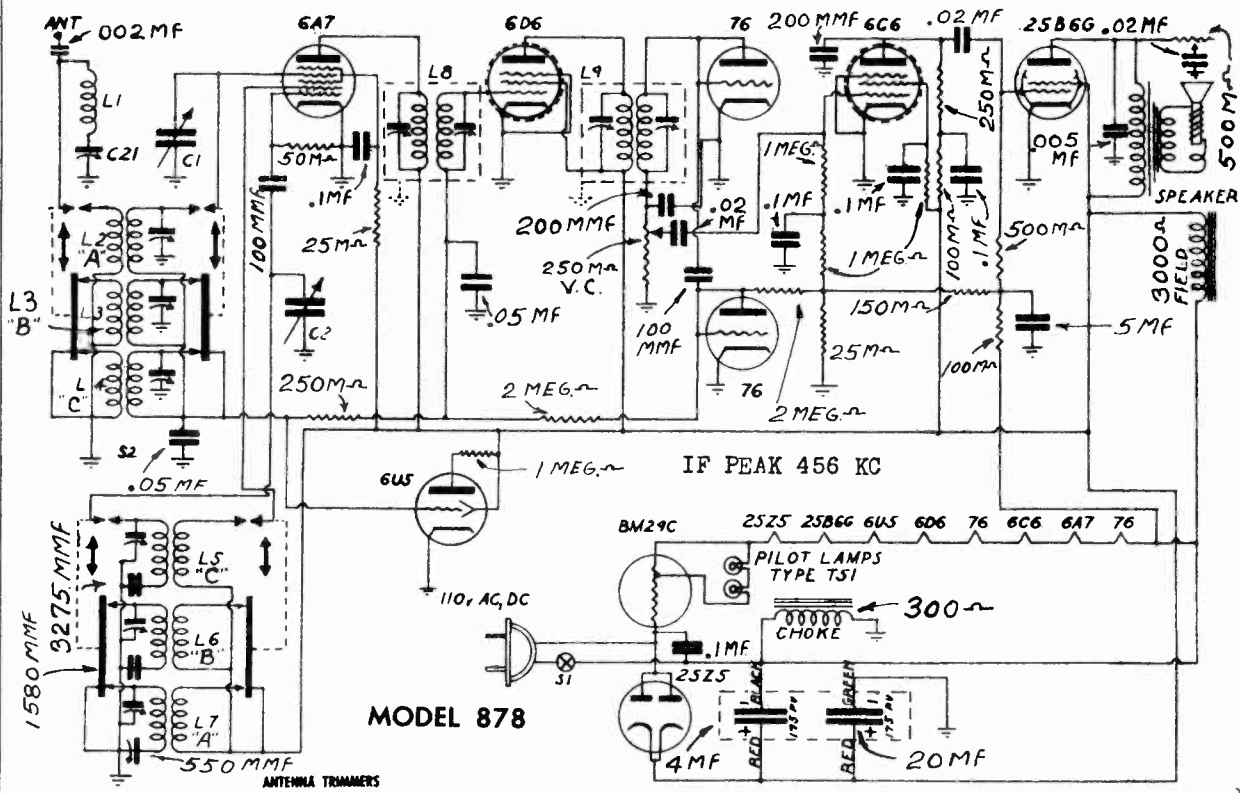
The following instructions are for the sole use of professional radio service men in the event that the receiver should require servicing.

I. F. Alignment. The intermediate frequency to which this set should be adjusted is 456 K.C. To align the intermediate frequency transformers properly, a signal generator emitting a signal of 456 K.C. should be coupled to the signal control grid of the 6A7 tube through a .5 mfd condenser. An output meter should be connected across the voice coil of the speaker. The four trimmers mounted internally in the top of the two I. F. cans should be adjusted to resonance. The output of the signal generator should be attenuated so as to provide the weakest possible signal necessary to produce a .5 volt deflection on the output meter.

R. F. Alignment. Adjust the signal generator to 17.4 MC. Feed this signal into the antenna lead of the receiver through a 400 ohm resistor. Rotate the band switch on the receiver to the Short Wave position and set the tuning dial to 17.4 on the Short Wave Scale. Adjust the trimmer on the rear section for maximum signal output. Rotate the Band Switch to the broadcast position. Replace the 400 ohm resistor in the Oscillator lead with a 200 mmfd condenser. Set the signal generator to 1560 K.C. and tune the receiver to the same frequency. Adjust the small trimmer condenser which is located near the Oscillator coil underneath the Chassis, to maximum signal response. Attenuate the output of the signal generator to the extent necessary for maintaining a deflection of .5 volts on the output meter and adjust the trimmer mounted on the front section of the variable condenser to resonance. Set the signal generator and the receiver at 600 K.C. and adjust the padder condenser for optimum response. Repeat the last two adjustments to insure accuracy of alignment. Rotate the Band Switch to the Short Wave position and with the signal generator and receiver tuned to 15 MC, adjust the small trimmer condenser which is located near the Short Wave Antenna coil. This last operation should be made with the 400 ohm resistor in the antenna circuit.

It is imperative that all adjustments be made with the minimum signal necessary to obtain the designated deflection on the output meter. This will obviate any difficulty arising from the A.V.C. action of the receiver, and will permit adjustment to absolute resonance.

MODEL 878
Schematic, Trimmers AUTOMATIC RADIO MFG. CO., INC.
Alignment



FREQUENCY RANGES :
 BAND A - 549 to 1555 KC
 BAND B - 2.23 to 6.36 MC
 BAND C - 5.75 to 16.6 MC

I.F. ALIGNMENT
 Couple the signal generator to the signal control grid of the 6A7 tube through .5 mfd. condenser. Signal from the generator adjusted to .5 volt output meter deflection. Adjust the four I.F. trimmers on transformers to resonance.
WAVETRAP - The trimmer condenser C21 is next adjusted at 456 KC. Signal should be fed to the antenna terminal of receiver. Adjust for minimum response.

R. F. Alignment. Rotate the band switch to the extreme counter-clockwise or "A" band position. Set the receiver dial at 1400 KC. Advance the volume control to maximum. Adjust the signal generator to 1400 KC and feed this signal to the receiver by connecting a 200 mmfd fixed condenser between the signal generator lead and the receiver antenna lead. With a weak signal adjust the band "A" oscillator trimmer to resonance. Then adjust band "A" antenna trimmer for maximum response. Rotate both the receiver dial and signal generator dial to 600 KC. Adjust the padder condenser to resonance. This adjustment is located on the top of the chassis pan between the composite broadcast and short wave antenna coil and the variable condenser. It will be necessary to repeat both the high frequency trimming and low frequency padding adjustments to insure correct alignment. In making final adjustments it is desirable that the signal generator output be attenuated sufficiently so that the output meter connected across the speaker voice coil does not greatly exceed .5 volt deflection at maximum response.

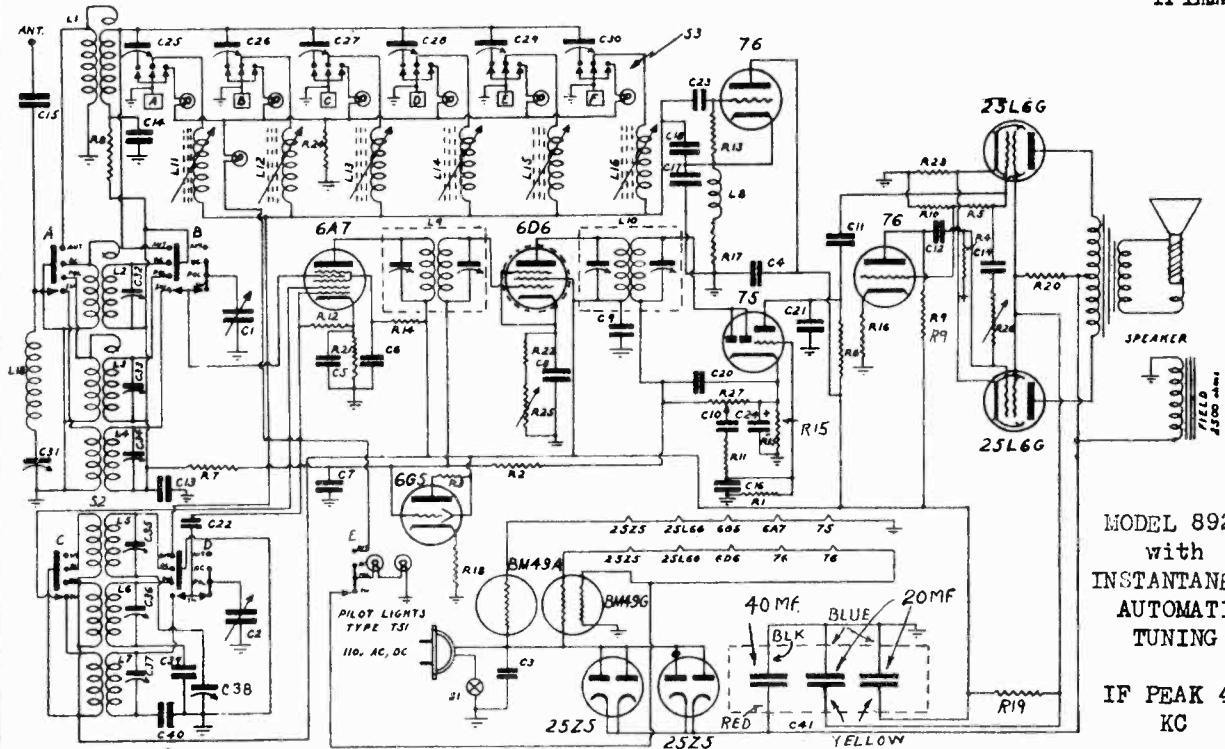
Rotate the band switch clockwise to the intermediate or "B" band position. Replace the 200 mmfd condenser in the signal generator output lead with a 400 ohm resistor. Set the receiver and the signal generator to 5.5 megacycles. Adjust the "B" band oscillator trimmer and then the "B" band antenna trimmer to resonance, at all times keeping the signal output from the generator as low as practical.

Rotate the band switch to the extreme clockwise or "C" band position. Set the receiver and signal generator to 15 megacycles as indicated on their respective dials. Adjust the "C" band oscillator trimmer and then the "C" band antenna trimmer to resonance. It is of particular importance in making these adjustments that the receiver should not be tuned to the image instead of the desired signal. This difficulty can largely be avoided by extreme attenuation of the signal generator output.

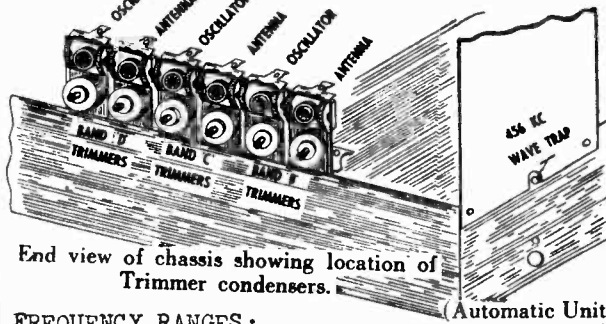
The normal alignment of this receiver requires that its oscillator operate at a frequency 456 KC higher than that of the tuner. The simplest way of distinguishing the correct operating point on the oscillator trimmer from the image response point is to start with the trimmer screw set down fairly tight, then to slowly turn the screw out. First one response and then a second will be heard. The second response is the correct one. If only one response is heard over the whole trimmer range, it will be the correct one.

AUTOMATIC RADIO MFG. CO., INC.

MODEL 892
Schematic
Trimmers



MODEL 892
with
INSTANTANEOUS
AUTOMATIC
TUNING
IF PEAK 456
KC

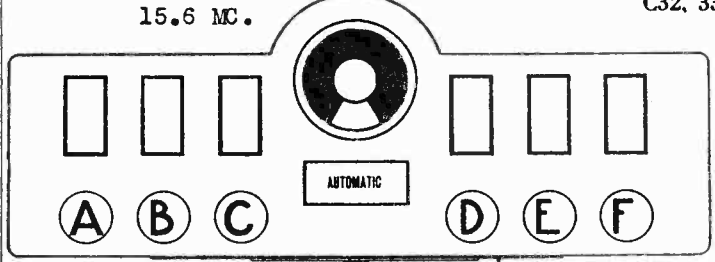


End view of chassis showing location of Trimmer condensers.

FREQUENCY RANGES:
BAND A -540 KC to 1520 KC. (AUTO.)
BAND B -547 KC to 1560 KC (Standard)
BAND C -2.19 MC to 6.5 MC.
BAND D -5.8 MC to 15.6 MC.

- L1 Broadcast Antenna Coil
- L2 Broadcast Antenna Coil
- L3 Police Band Antenna
- L4 Short Wave Antenna
- L5 Broadcast Oscillator Coil
- L6 Police Oscillator Coil
- L7 Short Wave Oscillator Coil
- L8 R.F. Choke

- L9
- L10
- L11, 12, 13, 14, 15, 16
- L18
- S1
- S2
- S3
- C1, C2
- C3, 4, 5, 6, 7, 8, 9
- C10, 11, 12
- C13, C14
- C15
- C16
- C17, C18
- C19
- C20, 21, 22, 23
- C24
- C25, C26
- C27, C28
- C29, C30
- C31
- C32, 33, 34, 35, 36, 37
- C38
- C39
- C40
- C41
- R1, R2
- R3
- R4, R5, R6
- R7
- R8, R9, R10
- R11, R12, R13
- R14
- R15
- R16
- R17, R18, R19
- R20, R21
- R23
- R24
- R22, R25
- R26
- R27
- 1st I.F. Transformer
- 2nd I.F. Transformer
- Automatic Selector Oscillator Coil Assembly
- Wave Trap
- Speaker
- Line Switch (On Vol. Control)
- Band Selector Switch
- Automatic Selector Switch Assembly
- 2 Section Variable Condenser
- Fixed Condensers .1mfd-200v
- Fixed " .01mfd-400v
- Fixed " .05mfd-200v
- Fixed " .002mfd-600v
- Mica " 100mmfd
- Toothpick " 1000mmfd
- Fixed " 1000mmfd
- Mica " 200mmfd
- Electrolytic Condenser 5mfd-35v
- Dual Trimmer
- " "
- " "
- Single Trimmer (3-30mmfd)
- Six Section Trimmer
- Variable Padder 550mmfd
- Fixed " 1175mmfd
- Fixed " 3350mmfd
- Electrolytic Condenser
- Resistors 2 megohms-1/4 Watt
- 1 megohm-1/10 Watt
- 1/2 megohm-1/4 Watt
- 1/4 megohm-1/4 Watt
- 100,000 ohms-1/4 Watt
- 50,000 ohms-1/4 Watt
- 25,000 ohms-1/4 Watt
- 15,000 ohms-1/4 Watt
- 5,000 ohms-1/4 Watt
- 1,000 ohms-1/4 Watt
- 250 ohms-1/4 Watt
- 75 ohms-1 Watt
- 60 ohms-1 Watt
- Sensitivity Control 6000 ohms
- Tone Control 500,000 ohms
- Volume Control 250,000 ohms



SELECTOR BUTTONS AND THEIR RESPECTIVE FREQUENCY RANGES FOR INSTANTANEOUS AUTOMATIC TUNING SYSTEM	POSITION	FREQUENCY RANGE
	A	770 KC to 540 KC
	B	970 KC to 580 KC
	C	1220 KC to 670 KC
	D	1250 KC to 740 KC
	E	1520 KC to 830 KC
	F	1520 KC to 830 KC

MODEL 892
Alignment
Tuner

AUTOMATIC RADIO MFG. CO., INC.

ALIGNMENT PROCEDURE AND INSTRUCTIONS FOR ADJUSTING THE AUTOMATIC SELECTOR UNIT

1. Select six local stations which ordinarily comprise the principal source of entertainment. These must be stations which can be depended upon to provide good reception at all times.
2. Arrange these stations in the order of their frequency (KC) assignments. The frequency assignment for any station may be found in any newspaper listing or a radio call book. For purposes of convenience in adjustment, each button has been assigned a letter from "A" to "F" as indicated in the following table.
It will be noted that each button operates only over a definite frequency range. For this reason, it is necessary that the station with the lowest frequency (nearest to the 550 KC end of the broadcast band) should be assigned to button "A". Button "B" would be used for the station of the next lowest frequency. This procedure is followed throughout. Button "F" is used for the station of highest frequency (nearest the 1500 KC end of band).
3. Mounted on the rear of the Automatic unit below the 12 adjustment screws is a strip showing the purpose of each adjustment screw. This strip shows that there are two adjustments for each station button; one is the oscillator adjustment, and the other the antenna adjustment. These are noted on the strip as "A" osc., "A" ant., "B" osc., "B" ant. etc.
4. Switch the set on by rotating the volume control knob to the right. Rotate the band switch to the broadcast position as indicated on the card mounted behind the knobs on the front panel. Carefully tune in the station which has been selected for position "A". Note the program received from that station. This will provide a simple method of identifying the station while adjusting the selector unit.
5. Rotate the band switch to the Automatic position. Press the extreme left-hand button on the front panel inward until it is engaged by the latch. This controls station position "A".
6. With a small screw driver adjust the setting marked "A" osc. until the desired program is heard. It is often possible to receive the same program at several points of adjustment. The correct point will provide the loudest response. Carefully adjust the screw which is marked "A" ant. for complete resonance. On powerful local stations it may be necessary to disconnect the antenna to find the correct antenna screw adjustment.
7. Rotate the band switch to the broadcast position again, then tune in the station which has been selected for position "B". Observe the nature of its program and rotate the band switch to the Automatic position. Depress the control button "B". Adjust the screw marked "B" osc. and then the screw marked "B" ant. in the same manner as was previously done for position "A".
8. Following the same procedure, adjust the remaining four station positions.
9. Repeat the six station adjustments in the same order as originally made.
10. Remove the Escutcheon plate from the front of the control unit. Detach the call letters of the six stations selected from the call letter sheet furnished with the receiver. Moisten the gummed backed of each of the six call tabs and affix them within the marked section of the celluloid plates which are mounted behind the Escutcheon. Each call tab should be positioned in the space directly above the shaft controlling the station which it identifies.

I. F. Alignment. The intermediate frequency to which this set should be adjusted is 456 KC. To align the intermediate frequency transformers properly, a signal generator emitting a signal of 456 KC should be coupled to the signal control grid of the 6A7 tube through a .5 mfd condenser. An output meter should be connected across the voice coil of the speaker. The four trimmers mounted internally in the top of the two I. F. cans should be adjusted to resonance. The output of the signal generator should be attenuated so as to provide the weakest signal necessary to produce a .5 volt deflection on the output meter when resonance is achieved.

R. F. Alignment. Rotate the band switch to position "B". This is the position which is second from the extreme counter-clockwise (Automatic) position. Set the receiver dial at 1400 KC. Advance the volume control to maximum. Adjust the signal generator to 1400 KC and feed this signal to the receiver by connecting a 200 mmfd fixed condenser between the signal generator lead and the receiver antenna lead. With a weak signal adjust the band "B" oscillator trimmer to resonance. Then adjust band "B" antenna trimmer for maximum response. Rotate both the receiver dial and signal generator dial to 600 KC. Adjust the padding condenser to resonance. This adjustment is located on the top of the chassis pan mid-way between the "B" band oscillator coil and the first I. F. Transformer. It will be necessary to repeat both the high frequency trimming and low frequency padding adjustments to insure correct alignment. In making final adjustments it is desirable that the signal generator output be attenuated sufficiently so that the output meter connected across the speaker voice coil does not greatly exceed .5 volt deflection at maximum response.

Rotate the band switch clockwise to the third or "C" band position. Replace the 200 mmfd condenser in the signal generator output lead with a 400 ohm resistor. Set the receiver and the signal generator to 5.5 megacycles. Adjust the "C" band oscillator and then the "C" band antenna trimmer to resonance, at all times keeping the signal output from the generator as low as practical.

Rotate the band switch to the extreme clockwise or "D" band position. Set the receiver and signal generator to 14 megacycles as indicated on their respective dials. Adjust the "D" band oscillator trimmer and then the "D" band antenna trimmer to resonance. It is of particular importance in making these adjustments that the receiver should not be tuned to the image instead of the desired signal. This difficulty can largely be avoided by extreme attenuation of the signal generator output.

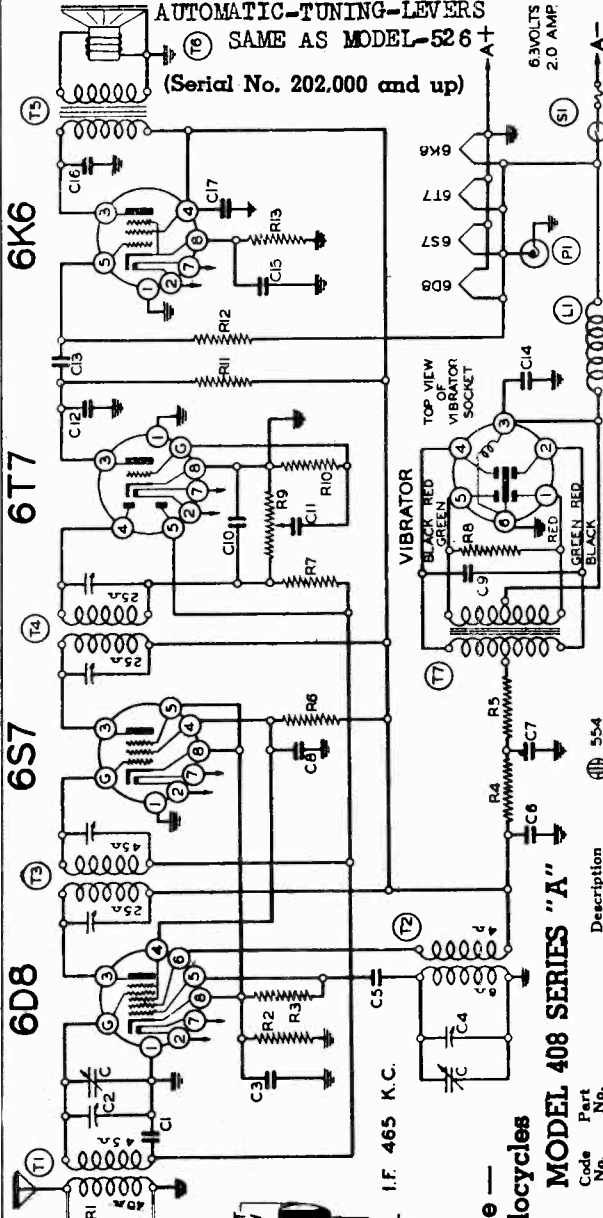
The normal alignment of this receiver requires that its oscillator operate at a frequency 456 KC higher than that of the tuner. The simplest way of distinguishing the correct operating point on the oscillator trimmer from the image response point is to start with the trimmer screw set down fairly tight, then to slowly turn the screw out. First one response and then a second will be heard. The second response is the correct one. If only one response is heard over the whole trimmer range, it will be the correct one.

456 KC Trap Alignment. In regions adjacent to commercial radio telegraph transmitters code interference is often experienced because of the seepage of these code signals through the intermediate frequency system. A wave trap is incorporated in this receiver to eliminate this condition. To adjust this trap circuit a 456 KC signal should be fed from the signal generator into the antenna circuit of the receiver. This signal should be of a fairly high order. Adjust the wave trap trimmer condenser until minimum response is obtained.

BELMONT RADIO CORP.

MODEL 408, Series A
Schematic, Voltage
Socket, Trimmers
Alignment, Parts

PROCEDURE FOR SETTING
AUTOMATIC-TUNING-LEVERS
SAME AS MODEL-526
(Serial No. 202,000 and up)



Type 3AG fuse (Part No. 13179)

6-Volt Storage Battery Operated

ALIGNING I.F. TRANSFORMERS

- Part No. 10895D Output I. F. Transformer
- Part No. 10896E Input I. F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see Fig. 1).

- With volume control full on (the extreme right of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:
 - Connect external oscillator set at 465 kilocycles, in series with .1 mfd. condenser, to the control grid cap of the type 6S7G tube, and adjust the output I.F. transformer (No. 10895D) to resonance.
 - Move oscillator output clip from grid of 6S7G to grid of 6D8G and adjust input I.F. transformer (No. 10896E) to resonance.
 - With oscillator still connected to 6D8G, readjust output I.F. transformer (10895D) if necessary.

R.F. ALIGNMENT: (535-1720 K. C.)

- With gang condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator in series with a 100 mmf. condenser to the antenna lead and chassis ground and make the following adjustments:
 - with external oscillator set at 1720 kilocycles, adjust oscillator trimmer to resonance. This adjustment is on the top of rear section of variable gang condenser. (See Fig. 1).
 - Re-set external oscillator to 1400 kilocycles, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance. (Top of front section of gang condenser.
 - Check sensitivity at 600 and 1000 kilocycles.

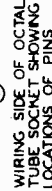
Frequency Range —
535 - 1720 Kilocycles

MODEL 408 SERIES "A"

Code No.	Part No.	Description
R1	13021	200 ohm—1/2 w.
R2	13081	250 ohm—1/2 w.
R3	13012	500 ohm—1/2 w.
R4	13084	200 ohm—1/2 w.
R5	13084	200 ohm—1/2 w.
R6	130149	15M ohm—1/2 w.
R7	130170	3 megohm—1/2 w.
R8	13084	200 ohm—1/2 w.
R9	101107	500M ohm Volume control
R10	130225	15 megohm—1/2 w.
R11	1309	200M ohm—1/2 w.
R12	1303	500M ohm—1/2 w.
R13	13024	400 ohm—1/2 w.
C1	10267B	2 gang variable condenser
C2	1009	.05 x 200 v.
C3	10022	Antenna Trimmer on gang
C4	10022	Oscillator trimmer—on gang
C5	12912	.0025—mica
C6	11957	15 mfd.—150 w. v.
C7	11958	30 mfd.—150 w. v.
C8	10022	.05 x 200 v.
C9	10068	.003 x 1400
C10	12912	.0025—Mica
C11	10011	.01 x 400 v.
C12	1292	.005—Mica
C13	10011	.1 x 120 w. v.
C14	10031	.5 x 120 w. v.
C15	11957	15 mfd.—25 w. v.
C16	10019	.06 x 600 v.
C17	10020	.1 x 200 v.

PARTS

T1	11192	Antenna Coil Complete
T2	11073	Oscillator Coil Complete
T3	10896E	Input I. F.—465 kc. Complete
T4	10895D	Output I. F.—465 kc. Complete
T5	10570	Output Transformer
T6	114118	5" P. M. Speaker
T7	104137	Power Transformer
L1	10568	"A" Choke
P1	10789	Pilot light—Type 40—6.3 v.—.15 amp.
S1	1268	Off-on switch on volume control
		Vibrator



VOLTAGES AT SOCKETS

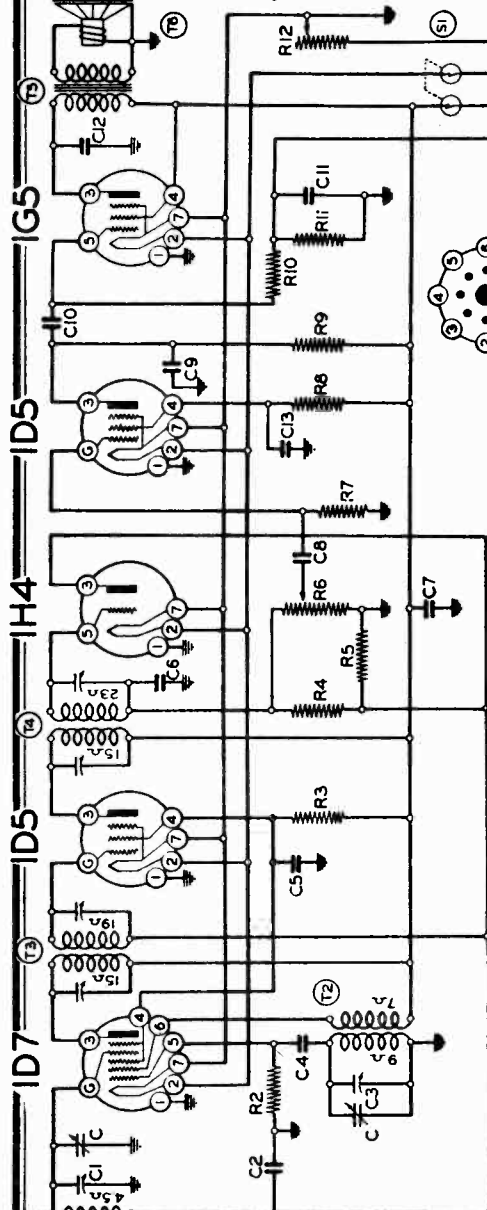
TUBE	FUNCTION	Prong No. 1	Prong No. 2	Prong No. 3	Prong No. 4	Prong No. 5	Prong No. 6	Prong No. 7	Prong No. 8
6D8	Converter	(1)	6.25	137	80		137	6.25	3.0
6S7	I. F. Amplifier	0	6.25	137	80	3.0		6.25	3.0
6T7	Diode-Triode	0	6.25	57				6.25	0
6K6	Output	0	6.25	130	137			6.25	5.4 (2)

(1) DC voltage as read across heater terminals 2 and 7. Supply Voltage 6.3 DC—Volume Control: Maximum Readings taken with 1000 ohm-per-volt meter
(2) Bias (11.6 volts) as read across terminals 8 to 7. Antenna Shorted to Ground

MODEL 501 Series A
Schematic, Socket, Trimmers

BELMONT RADIO CORP.

Voltage, Alignment, Parts



WIRING SIDE OF OCTAL TUBE SOCKET SHOWING LOCATIONS OF PINS.

552

INTERMEDIATE FREQUENCY 465 K.C.

MODEL 501

Series A

RESISTORS

Part No.	Description
13021	20M ohm-1/3 w.
13012	50M ohm-1/3 w.
13017	10M ohm-1/3 w.
13038	2 megohm-1/3 w.
101116	1 megohm volume control
13019	1 megohm-1/3 w.
1309	200M ohm-1/3 w.
13019	1 megohm-1/3 w.
13093	450 ohm-1/3 w.
101117	Battery Rheostat 4.75 ohms

CONDENSERS

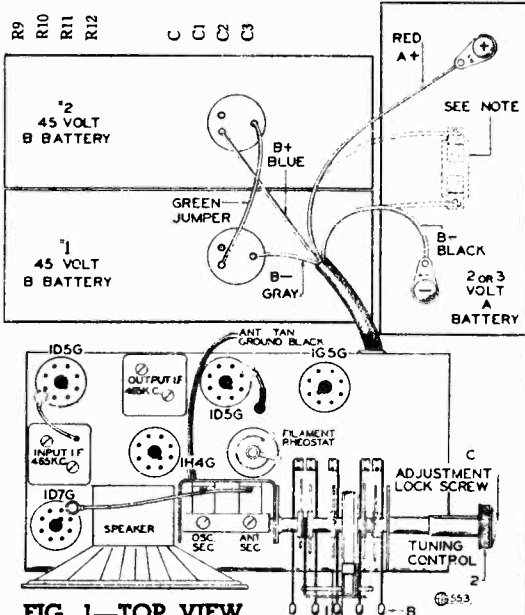
Code No.	Description
C4	.0025 Mica
C5	.05 x 200 v
C6	.0001 Mica-20%
C7	.25 x 200 v
C8	.01 x 400 v.
C9	.0005 Mica-20%
C10	.01 x 400 v.
C11	25 mfd.-25 w. v. lytic.
C12	.04 x 600 v.
C13	.05 x 200 v.

Antenna Shorted to Ground
Volume Control: Maximum
Readings taken with 100 ohm-per-volt meter

TUBE	FUNCTION	VOLTAGES AT SOCKETS							
		Prong No. 1	Prong No. 2	Prong No. 3	Prong No. 4	Prong No. 5	Prong No. 6	Prong No. 7	Prong No. 8
ID7G	Converter	0	+2	+83.5	+60	-15	+83.5	0	0
ID5G	I. F. Amplifier	0	+2	+83.5	+60	0	0	0	+83.5
IH4G	2nd Detector, AVC	0	+2	0	0	0	0	0	0
ID5G	1st Audio	0	+2	+30	+11	0	0	0	+83.5
IG5G	Output	0	+2	+80	+83.5	-2.5	0	0	-6.5

R. F. ALIGNMENT: (535-1720 K.C.)

- With the gang condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator in series with a 100 mmf. condenser to the antenna lead and chassis ground and make the following adjustments:
 - With external oscillator set at 1720 kilocycles, adjust R1 oscillator trimmer to resonance. This adjustment is R2 on the top of rear section of variable gang condenser. (See Fig. 1).
 - Re-set external oscillator to 1400 kilocycles, rotate condenser pick up oscillator signal and adjust antenna trimmer to resonance. (Top of front section of gang condenser).
 - Check sensitivity at 600 and 1000 kilocycles.



PROCEDURE FOR SETTING
AUTOMATIC-TUNING-LEVERS
SAME AS MODEL-526

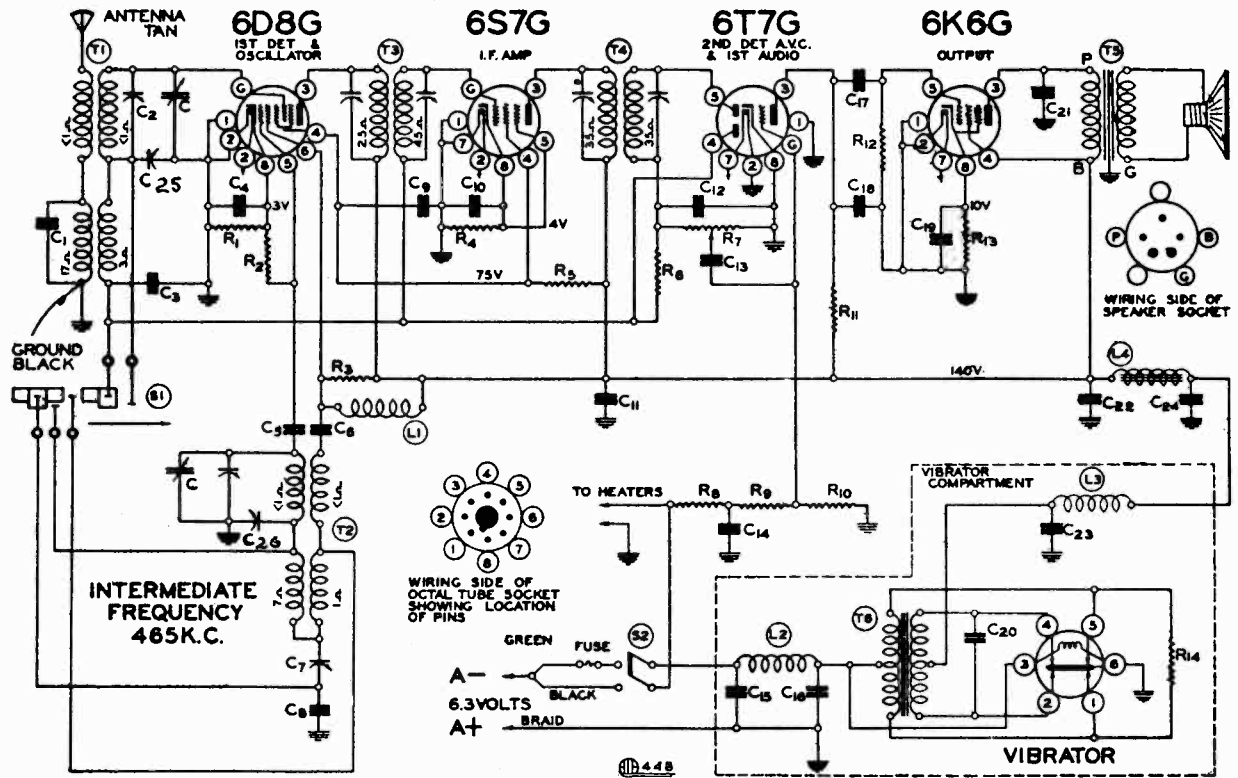
Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt.
All voltages as indicated on diagram are measured with a new set of batteries.

FIG. 1—TOP VIEW

Schematic, Socket
Trimmers, Parts, Voltage

BELMONT RADIO CORP.

MODEL 489 Series A
Serial 7J852300 up
Issue B, Ser. 8C16800 up



RESISTORS

R1	130-54	500 ohm - 1/3 w.
R2	130-12	50M ohm - 1/3 w.
R3	130-12	50M ohm - 1/3 w.
R4	130-26	1000 ohm - 1/3 w.
R5	130-149	15M ohm - 1/3 w.
R6	130-4	3 megohm - 1/3 w.
R7	101-91	1 meg volume control
R8	130-191	1.5 megohm - 1/3 w.
R9	130-4	3 megohm - 1/3 w.
R11	130-9	200M ohm - 1/3 w.
R12	130-3	500M ohm - 1/3 w.
R13	130-153	700 ohm - 1/3 w.
R14	130-84	200 ohm - 1/3 w.
R10	130-191	1.5 meg - 1/3 w.

Adjustable Trimmer, 2-20 mmf.
Adjustable Trimmer, 2-20 mmf.
C25 and C26 in same unit

CONDENSERS

C	102-43	2 gang variable
C1	129-5	.0001 Mica
C2	124-39B	Adj. Cond. 2-25 mmf.
C3	100-22	.05 x 300
C4	100-20	.1 x 200
C5	129-39	.00005 Mica
C6	100-25	.002 x 600
C7	124-38	Series pad 600 mmf. W. C.
C8	129-54	.003 Mica
C9	100-20	.1 x 200
C10	100-20	.1 x 200
C11	100-11	.01 x 400
C12	129-5	.0001 Mica
C13	100-11	.01 x 400
C14	100-11	.01 x 400
C15	100-40	.5 x 200
C16	100-40	.5 x 200
C17	100-26	.02 x 400
C18	129-2	.0005 Mica
C19	119-22	10.0 mfd. 25 v. lytic
C20	100-34	.005 x 1200
C21	100-19	.006 x 600
C22	119-28B	5.0 mfd. lytic
C23	100-20	.1 x 200
C24	119-28B	5.0 mfd. lytic

C22 - C24 in same unit

MODEL 489, SERIES A

(Serial No. 7J852300 and up)

ISSUE B (Serial No. 8C136800 and up)

PARTS

T1	111-83	Antenna coil complete
T2	110-66B	Oscillator coil complete
T3	108-105B	Input I.F. complete 465 kc.
T4	108-106B	Output I.F. complete 465 kc.
T5	114-96	6" speaker (P.M.)
T6	104-62E	Power Transformer
L1	123-4	R. F. "B" Choke
L2	105-19	A Choke
L3	123-3	R. F. "B" Choke
L4	105-30E	"B" Filter Choke (400 ohms)
S1	125-39	Wave Band Switch
S2		Switch on volume control

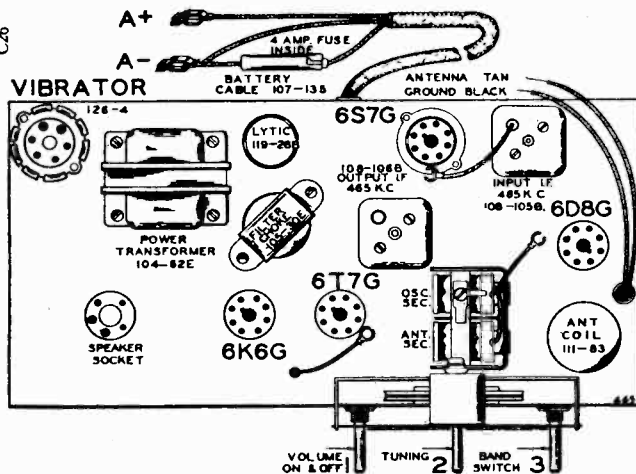


FIG. 1—TOP VIEW

FREQUENCY RANGE
535 to 1720 K.C. (Kilocycles)
5.5 to 18.1 M.C. (Megacycles)

DIAL SCALE
Upper
Lower

BAND
Broadcast
Short Wave

MODEL 489 Series A
Serial 7J852300 up
Issue B, Ser. 8C136800 up
Trimmers, Alignment
MODEL 505 Series A
Trimmers, Alignment

BELMONT RADIO CORP.

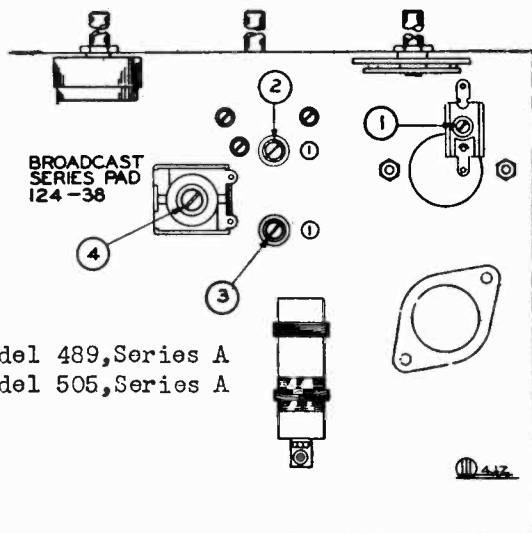
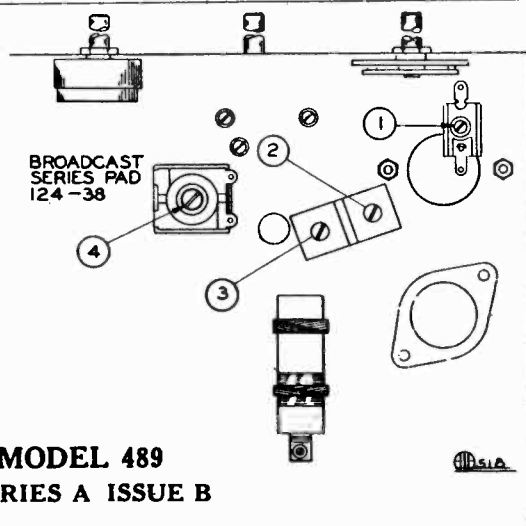


FIG. 3.—BOTTOM VIEW

Model 489, Series A
Model 505, Series A



MODEL 489
SERIES A ISSUE B

FIG. 3.—BOTTOM VIEW

(Serial No. 8C136800 and up)

DUMMY ANTENNAS:

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS: (465 K. C.):

Part No. 108-106B Output I.F. Transformer
Part No. 108-105B Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), and with the variable condenser in its minimum capacity position, plates entirely out of mesh, make the following adjustments:

- (a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1", to the control grid cap of the type 6S7G tube, and adjust the output I.F. transformer (No. 108-106B) to resonance.
- (b) With "Dummy 1" still connected, move oscillator output clip from grid of 6S7G to grid cap of 6D8G and adjust input I.F. transformer (No. 108-105B) to resonance.

SHORT WAVE BAND ALIGNMENT:

5.5 to 18.1 Megacycles

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the antenna and ground leads, make the following adjustments:

- (a) Move dial pointer to 17 megacycles and adjust short wave oscillator trimmer to resonance.

This adjustment is the trimmer mounted on the top of rear section of the variable gang condenser (see Fig. 1, top view).

- (b) Adjust short wave antenna trimmer (Adjustment Number 1), to resonance (see Fig. 3, bottom view).

BROADCAST BAND ALIGNMENT:

535 to 1720 Kilocycles

1. With band changing switch in the broadcast position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to antenna and ground leads make following adjustments:

- (a) Set external oscillator to 1720 K.C. and adjust broadcast oscillator trimmer to resonance. (Adjustment number 3, see bottom view of chassis, Fig. 3).
- (b) Re-set external oscillator to 1400 K.C., rotate variable gang condenser and pick up signal. Adjust broadcast antenna trimmer (adjustment number 2), to resonance.
- (c) Re-set external oscillator to 600 K.C., and adjust broadcast series pad (adjustment number 4), to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 3).
- (d) Repeat adjustments "a" and "b" until sensitivity is at its maximum.
- (e) Check for tracking and sensitivity at 1400, 1000, and 600 kilocycles. **Under no circumstances bend plates of variable condenser sections to correct tracking.**

BELMONT RADIO CORP.

MODEL 504 Series A
Schematic, Socket
Trimmers, Parts
Alignment, Voltage

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

All voltages are to be measured with 6.3 volts input to receiver. Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagram.

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

ALIGNING I.F. TRANSFORMERS: (465 K. C.):

Part No. 108-85 Output I.F. Transformer.

Part No. 108-84 Input I.F. Transformer.

These I.F. Transformers have two adjustments, both of which are accessible from the top of chassis (see fig. 1, top view).

- With volume control full on (the extreme right of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:
 - Connect external oscillator set at 465 kilocycles, in series with .1 mfd. condenser, to the control grid cap of the type 6S7G tube, and adjust the output I.F. transformer (No. 108-85) to resonance.
 - Move oscillator output clip from grid of 6S7G to grid cap of 6D8G and adjust input I.F. transformer (No. 108-84) to resonance.
 - With oscillator still connected to 6D8G readjust output I.F. transformer (108-85) if necessary.

R. F. ALIGNMENT: (535-1720 K.C.)

- With gang condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator in series with a 200 mmf. condenser to tan antenna and black ground leads and make the following adjustments:
 - With external oscillator set at 1720 kilocycles, adjust oscillator trimmer (rear of gang condenser).
 - Re-set external oscillator to 1400 kilocycles, rotate condenser, pick-up oscillator signal and adjust antenna trimmer to resonance (front section of gang condenser)
 - Check sensitivity at 600 and 1000 kilocycles.

MODEL 504 SERIES A

535-1720 Kilocycles
Battery Operated

No.	Part No.	Description
RESISTORS		
R1	130-76	30M ohm - 1/3 w.
R2	130-23	2M ohm - 1/3 w.
R3	130-186	250M ohm - 1/10 w. - in tuning indicator
R4	130-123	15M ohm - 1/2 w.
R5	130-121	3.2 megohm - 1/3 w.
R6	101-56	1 megohm volume control
R7	106-36	10 ohms - resistor strip
R8	130-19	1 megohm - 1/3 w.
R9	130-19	1 megohm - 1/3 w.
R10	130-100	150M ohm - 1/3 w.
R11	106-36	25 ohms - resistor strip
R12	130-84	200 ohms - 1/3 w.
R13	130-19	1 megohm - 1/3 w.
R14	130-20	100M ohm - 1/3 w.
R15	101-72	300M ohm - tone control
		R7 and R11 in same unit
CONDENSERS		
C	102-38	2 gang variable
C1	100-9	.05 x 200 v.
C2	129-39	.00005 Mica
C3	100-33	.1 x 200 v.
C4	119-28	5.0 mfd. - 200 w. v. lytic
C5	100-33	.1 x 200 v.
C6	100-33	.1 x 200 v.
C7	129-5	.0001 Mica
C8	100-11	.01 x 400 v.
C9	100-11	.01 x 400 v.
C10	100-34	.005 x 1200 v.
C11	129-12	.00025 Mica
C12	100-33	.1 x 200 v.
C13	100-11	.01 x 400 v.
C14	100-40	.5 x 200 v.
C15	100-40	.5 x 200 v.
C16	100-37	.003 x 600 v.
C17	100-11	.01 x 400 v.
		C4 and C5 in same unit

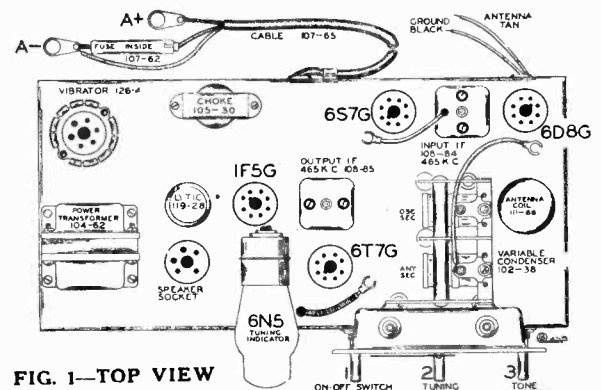
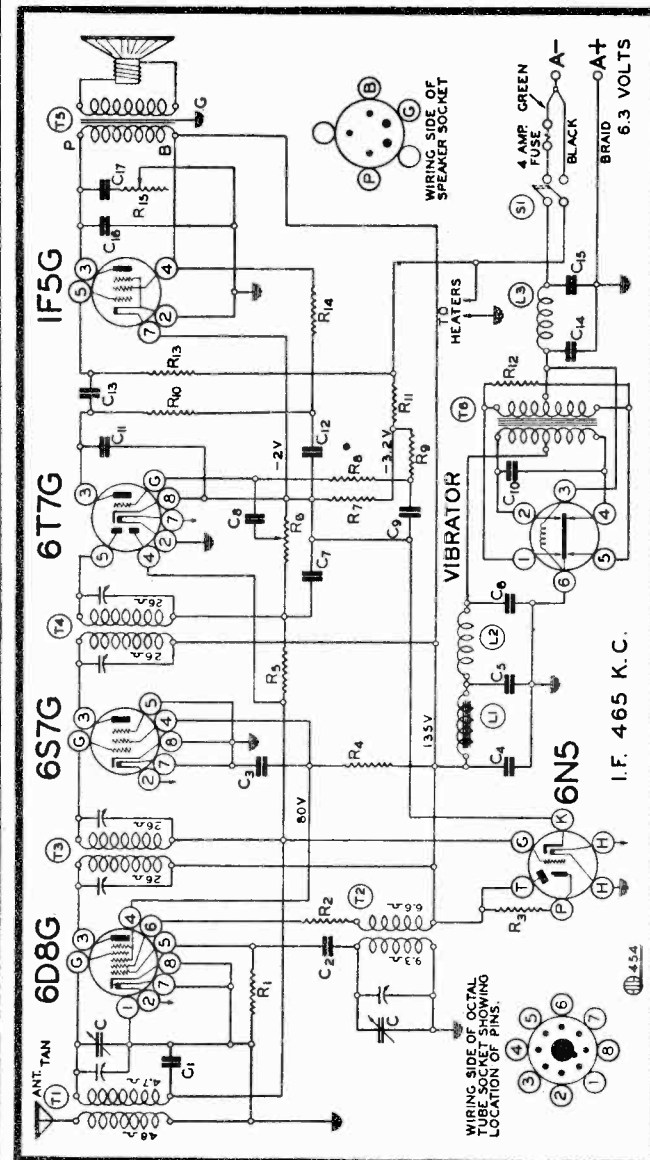


FIG. 1-TOP VIEW

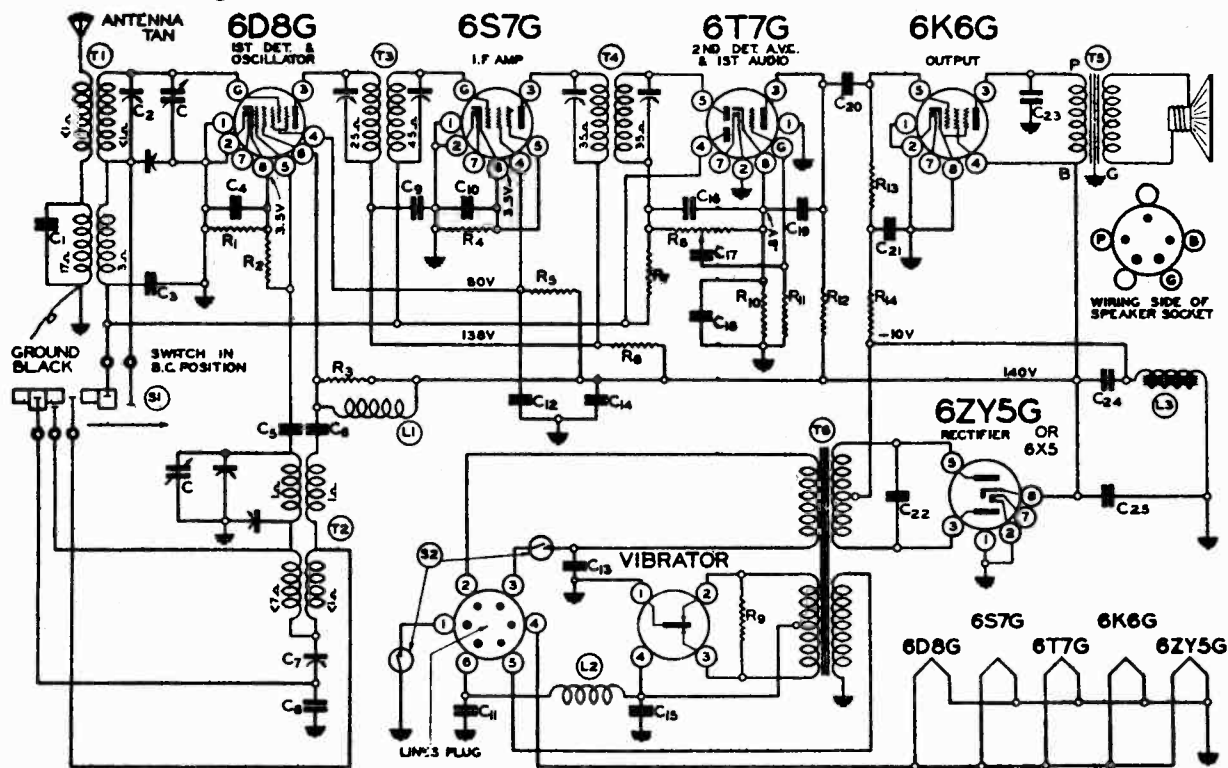
PARTS

T1	111-66	Antenna coil complete
T2	110-45	Oscillator coil complete
T3	108-84	Input I.F. coil complete - 465 kc.
T4	108-85	Output I.F. coil complete - 465 kc.
T5	114-63	P.M. Speaker
T6	104-62	Power Transformer
L1	105-30	Filter Choke
L2	123-3	R. F. "B" Choke
L3	105-19	"A" Choke
S1	126-4	Switch on volume control
		Vibrator

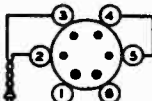
MODEL 505 Series A
Serial 7J851300 up
Schematic, Voltage

BELMONT RADIO CORP.

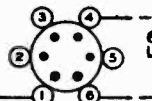
Socket, Trimmers
Parts



INTERMEDIATE
FREQUENCY
465 K.C.



115 VOLT A.C.
LINE SOCKET



6 VOLT BATTERY
LINE SOCKET



WIRING SIDE OF OCTAL
TUBE SOCKET SHOWING
LOCATIONS OF PINS.

447

MODEL 505 SERIES "A"

(Serial No. 7J851300 and up)

FOR ALIGNMENT

SEE INDEX

R1	130-70	500 ohm - 1/3 w.
R2	130-12	50M ohm - 1/3 w.
R3	130-12	50M ohm - 1/3 w.
R4	130-92	1000 ohm - 1/3 w.
R5	130-149	15M ohm - 1/3 w.
R6	130-192	2M ohm - 1/3 w.
R7	130-170	3 megohm - 1/3 w.
R8	101-91	1 meg volume control
R9	130-84	200 ohm - 1/3 w.
R10	130-192	2M ohm - 1/3 w.
R11	130-19	1 meg - 1/3 w.
R12	130-100	150M ohm - 1/3 w.
R13	130-3	500M ohm - 1/3 w.
R14	130-11	250M ohm - 1/3 w.
C	102-43	2 gang variable
C1	129-5	.0001 Mica
C2	124-39B	Adj. condenser
C3	100-22	.05 x 200
C4	100-20	.1 x 200
C5	129-39	.00005 Mica
C6	100-25	.002 x 600
C7	124-38	Series Pad
C8	129-54	.003 Mica
C9	100-6	.25 x 200
C10	100-20	.1 x 200
C11	100-40	.5 x 200
C12	100-20	.1 x 200
C13	129-82	.003 Mica
C14	129-12	.00025 Mica
C15	100-40	.5 x 200
C16	129-5	.0001 Mica
C17	100-11	.01 x 400
C18	119-22	10 mfd. lytic 25 wv.
C19	129-12	.00025 Mica
C20	100-11	.01 x 400
C21	100-20	.1 x 200
C22	100-73	.008 x 1200
C23	100-37	.003 x 600
C24	119-24B	5 mfd. lytic
C25	119-24B	5 mfd. lytic

T1	111-83	Antenna Coil
T2	110-66B	Oscillator Coil
T3	108-105B	Input I.F.
T4	108-106B	Output I.F.
T5	114-95 or 114-96	Speaker
T6	104-114	Power Transformer
L1	123-4	"B" Choke
L2	105-19	"A" Choke
S1	125-39	Wave band switch
S2		Off-On Switch on Volume Control
L3	105-52	300 ohm 4.5 henry filter choke

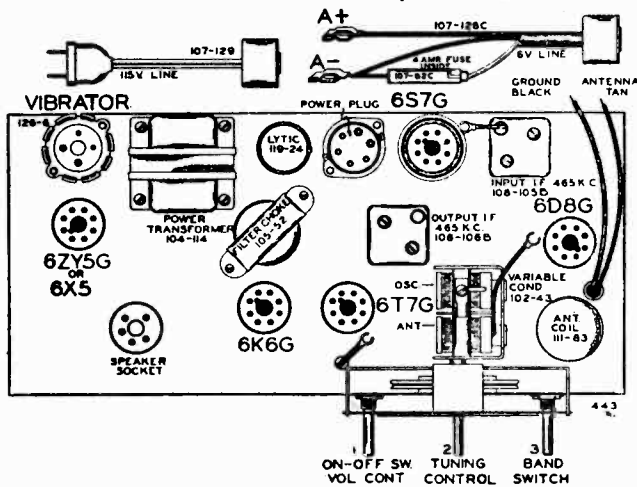


FIG. 1—TOP VIEW

BAND DIAL SCALE FREQUENCY RANGE

Broadcast..... Upper.....535 to 1720 K.C. (Kilocycles)
Short Wave..... Lower.....5.5 to 18.1 M.C. (Megacycles)

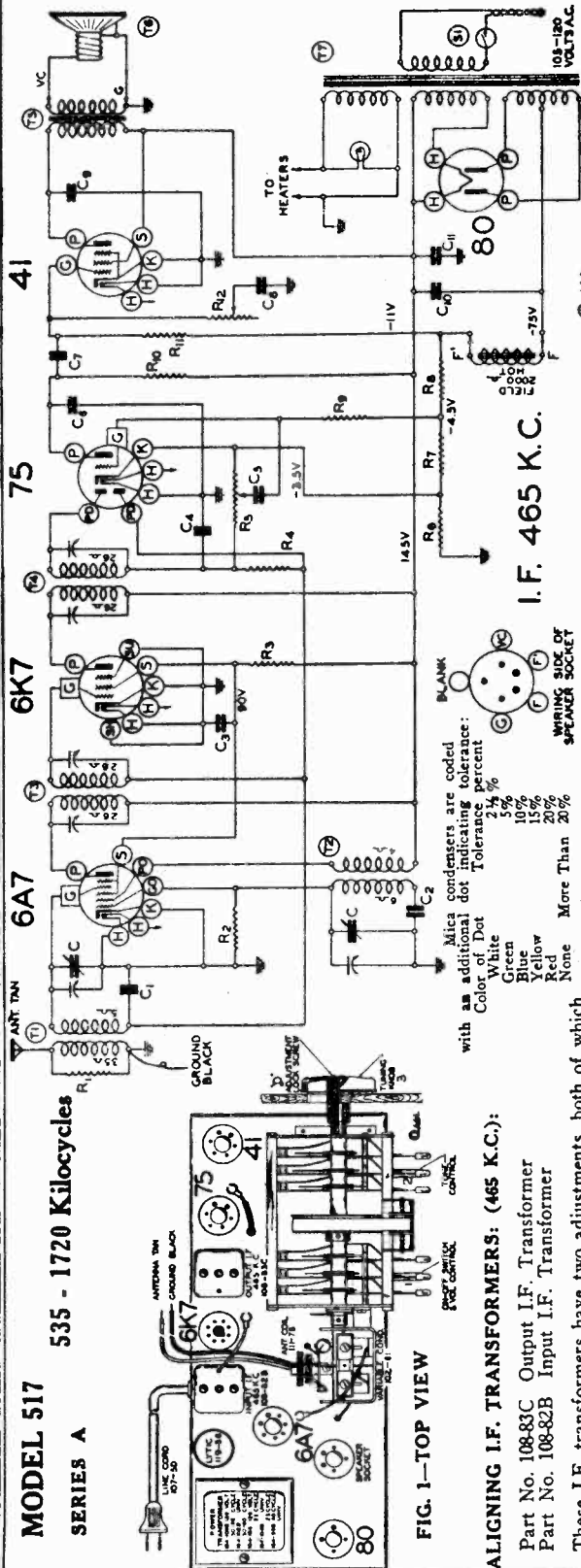
Alignment, Parts
Tuner

BELMONT RADIO CORP.

MODEL 517 Series A
Schematic, Voltage
Socket, Trimmers

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

All voltages as indicated on diagram arc measured with 115 volts on the primary of the power transformer.



PROCEDURE FOR SETTING THE "PRESTO-MATIC" LEVERS:

There are six levers on the dial by means of which six stations may be selected,

Press down any one of the six "Presto-matic" levers. Holding it down, tune in by means of knob No. 3 any one of your favorite stations. Turn the tuning knob very slowly back and forth until the signal is clearest. The station will then be accurately tuned in.

Release the lever and press down any other "Presto-matic" lever and again hold it down, tune in by means of knob No. 3 another favorite station.

When you have selected all your favorite stations, hold tuning knob No. 3 securely and with a coin or a screw driver, tighten the special locking screw ("D") in the center of the tuning knob, (See Fig. 1).

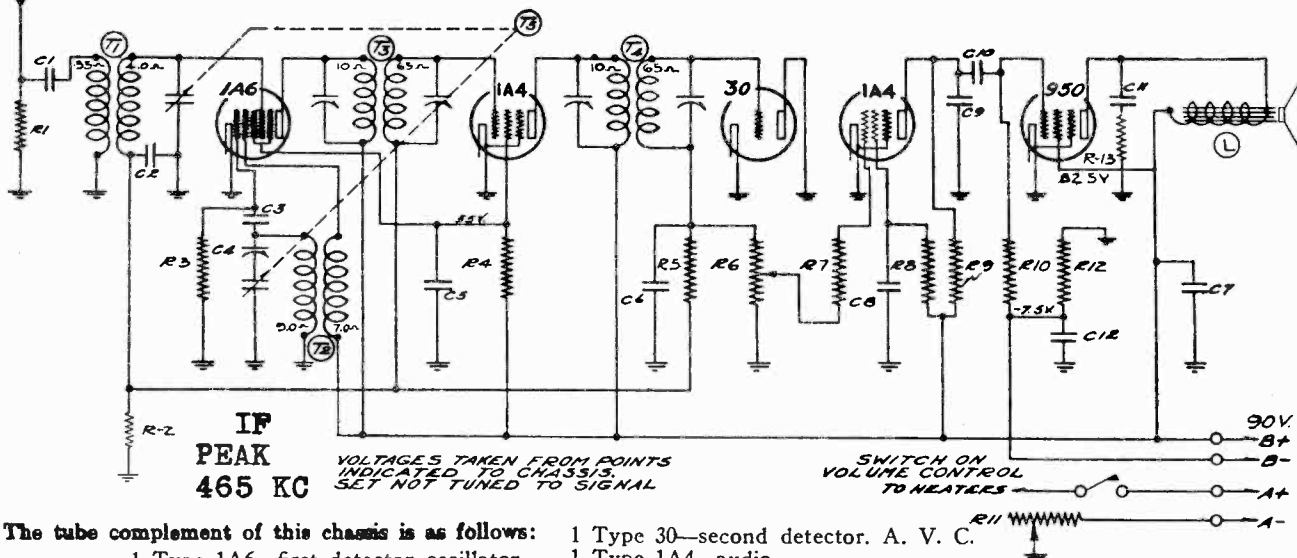
This screw will lock in place all the stations you have selected on the "Presto-matic" levers. (Note: Locking Screw "D" is loose when radio is shipped from factory).

If you should desire to change any station you selected to another, hold tuning knob No. 3 securely, loosen locking screw ("D") and select the new station as explained.

(No. 7K 866000 and up)		SPEAKER	
114-97	T6	Five Inch Dynamic Speaker (Field 2000 Ohm)	
		MISCELLANEOUS	
101-59	R12	Tone Control (1 Meg Ohm)	
101-94	C7, S1	Volume Control and Switch (1 Meg Ohm)	
102-61		Two Gang Variable Condenser	
105-53		Output Transformer (For Speaker)	
107-5D		Line Cord and Plug	
128-109		Wood Knob (Spring Type)	
128		Special Tuning Knob	
		COILS	
		Input I.F. Coil Assembly Complete	
		Output I.F. Coil Assembly Complete	
		Oscillator Coil Assembly Complete	
		Antenna Coil Assembly Complete	
		SOCKETS	
		Six Prong Socket - Marked "41"	
		Seven Prong Socket - Marked "75"	
		Five Prong Socket - Marked "6A7"	
		Four Prong Socket - Marked "80"	
		Eight Prong Octal Socket - Marked "6K7"	
		TRANSFORMERS	
		Power Transformer 50/60 Cycle	
		Universal 50/60 Cycle Transformer	
		Power Transformer 25/60 Cycle - 105-115 Volts	
		Universal 25/60 Cycle Transformer	
		Universal 40/60 Cycle Transformer	

MODEL 523
Schematic, Socket
Trimmers, Voltage
Alignment, Parts

BELMONT RADIO CORP.



The tube complement of this chassis is as follows: 1 Type 30—second detector. A. V. C.
1 Type 1A6—first detector oscillator. 1 Type 1A4—audio.
1 Type 1A4—IF. amplifier. 465 K. C. 1 Type 950—output.

No.	Part No.	Description	R10	R11	R12	R13	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12		
RESISTORS																				
R1	130-17	10M Ohm - 1/3 W. - 20% - Carbon	130-19	1 meg " - 1/3 W. - 20% - Carbon	130-38	2 meg " - 1/3 W. - 20% - Carbon	100-11	.01 x 400 v. - 25%	100-22	.05 x 200 v. - 25%	129-12	.00025 Mica - MT - 20%	124-14	Series Pad	100-9	.05 x 200 v. - 25%	129-5	.0001 Mica - MT - 20%	130-9	200M ohm 1/3 W. - 20% - Carbon
CONDENSERS																				
R2	130-38	2 meg " - 1/3 W. - 20% - Carbon	R11	101-44	4.75 " - Rheostat	R12	130-93	450 " - 1/3 W. - 10% - Carbon	C1	100-11	.01 x 400 v. - 25%	C2	100-22	.05 x 200 v. - 25%	C3	129-12	.00025 Mica - MT - 20%	C4	124-14	Series Pad
R3	130-52	50M " - 1/3 W. - 20% - Carbon	R13	130-52	50M " - 1/3 W. - 20% - Carbon	C5	100-9	.05 x 200 v. - 25%	C6	129-5	.0001 Mica - MT - 20%	C7	100-48	.25 x 200 v.	C8	100-9	.05 x 200 v. - 25%	C9	129-2	.0005 Mica - MT - 20%
R4	130-17	10M " - 1/3 W. - 20% - Carbon	PARTS																	
R5	130-38	2 meg " - 1/3 W. - 20% - Carbon	T1	111-46	Antenna Coil	T2	110-36	Oscillator Coil	T3	108-67	Input I. F. Coil - 46 kc.	T4	108-68	Output I. F. Coil - 465 kc.	T5	102-42	Two Gang Condenser	L	114-19	Six Inch Magnetic Speaker
R6	101-69	1 meg " - Volume Control - and Switch																		
R7	130-52	50M " - 1/3 W. - 20% - Carbon																		
R8	130-19	1 meg " - 1/3 W. - 20% - Carbon																		
R9	130-9	200M ohm 1/3 W. - 20% - Carbon																		

TOP VIEW MODEL 523

ALIGNING I.F. TRANSFORMERS: (465 K.C.)

1. With volume control full on and with variable condenser at its minimum capacity position, plates entirely out of mesh, and with external oscillator set at 465 K.C. connected in series with a .1 mfd. condenser, to the grid of the 1A6 tube (cap at top of tube), adjust I.F. transformers, parts number 108-67 and 108-68, to resonance. Both of these transformers have two (2) adjustments each, they are accessible from the tops of the cans (for location see top view).

Use as a resonance indicator an output meter connected across the outside terminals of the speaker or by means of an adapter to the plate and screen of the type 950 output tube. Maximum deflection of the volt meter indicates resonance.

Use only enough signal to get a readily readable output.

A low range output meter or the low scale of a multi-range meter should be used.

BROADCAST BAND ALIGNMENT:

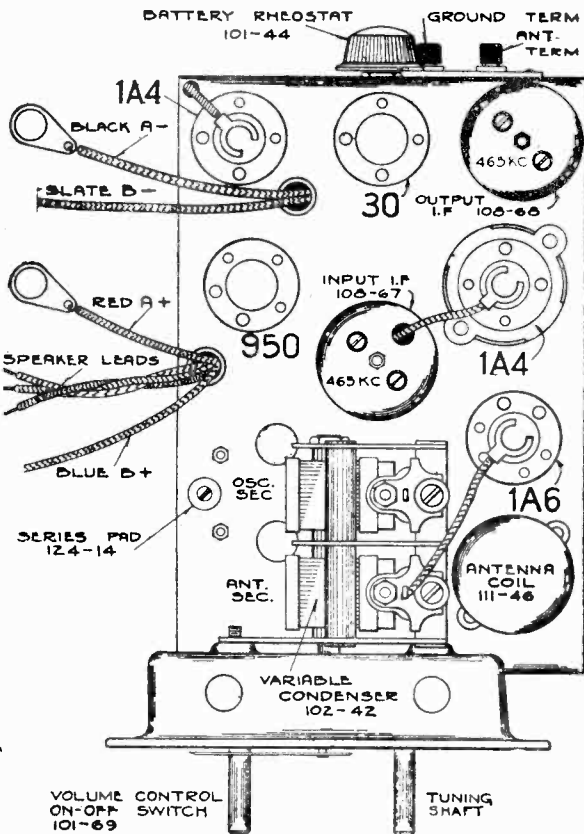
1. Set external oscillator to 1720 K.C. and connect it in series with a 200 mmfd. condenser to the antenna and ground posts.

(a) With variable condenser in its minimum capacity position, plates entirely out of mesh, adjust oscillator trimmer (rear section of variable condenser) to resonance.

(b) Re-set external oscillator to 1400 K.C. Rotate variable condenser, pick up signal and adjust antenna trimmer (front section of variable condenser) to resonance.

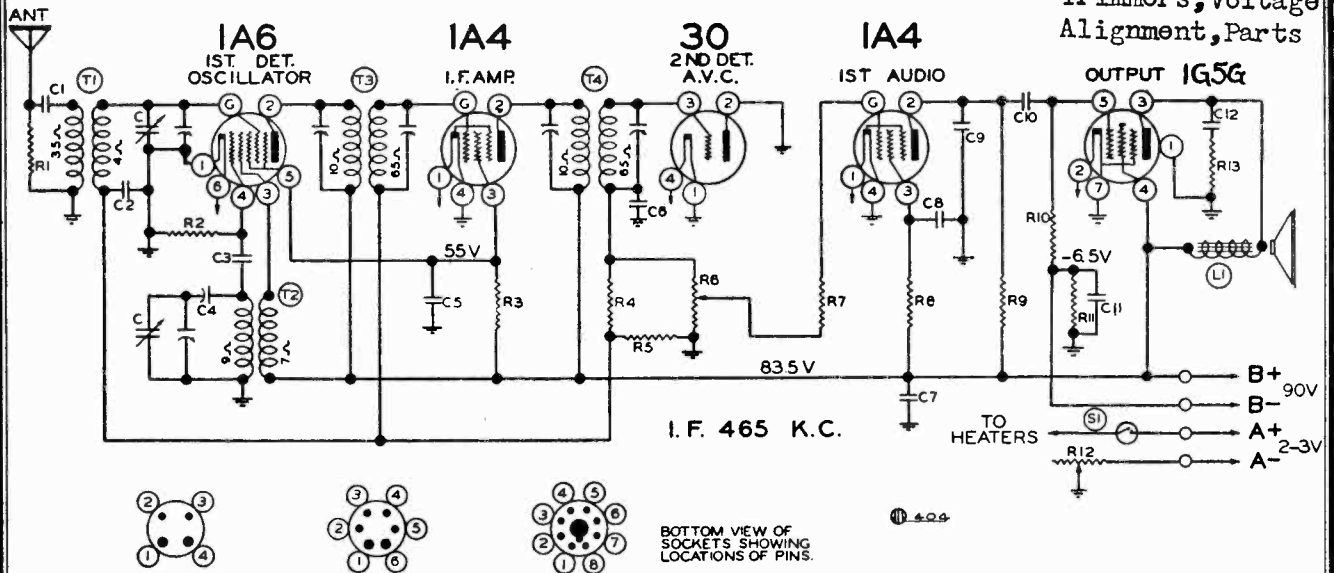
(c) Re-set external oscillator to 600 K.C., move dial pointer to 600 K.C., and adjust series pad, part number 124-14 (see top view), to resonance. While making this adjustment, slowly rock variable condenser to and fro until maximum output is obtained.

(d) Check for sensitivity at 1400, 1000, 600 K.C. DO NOT BEND PLATES.



BELMONT RADIO CORP.

MODEL 523B
Schematic, Socket
Trimmers, Voltage
Alignment, Parts



No.	Part No.	Description	Value	Tolerance	Part No.	Description	Value	Tolerance	
CONDENSERS									
C	102-56	2 Gang Variable Condenser			R11	130-93	450 ohm - 1/3 w.	10%	
C1	100-11	.01 x 400 v.	25%	R1	130-17	10M ohm - 1/3 w.	20%		
C2	100-22	.05 x 200 v.	25%	R2	130-52	50M ohm - 1/3 w.	20%		
C3	129-12	.00025 Mica	20%	R3	130-17	10M ohm - 1/3 w.	20%		
C4	124-14	Series Pad		R4	130-38	2 megohm - 1/3 w.	20%		
C5	100-9	.05 x 200 v.	25%	R5	130-38	2 megohm - 1/3 w.	20%		
C6	129-5	.0001 Mica	20%	R6	101-69	1 megohm Volume Control	20%		
C7	100-48	.25 x 200 v.	20%	R7	130-52	50M ohm - 1/3 w.	20%		
C8	100-9	.05 x 200 v.	25%	R8	130-19	1 megohm - 1/3 w.	20%		
C9	129-2	.0005 Mica	20%	R9	130-9	200M ohm - 1/3 w.	20%		
C10	100-11	.01 x 400 v.	25%	R10	130-19	1 megohm - 1/3 w.	20%		
RESISTORS									
PARTS									
T1	111-46	Antenna Coil Complete							
T2	110-36	Oscillator Coil Complete							
T3	108-67	Input I.F. Coil Complete							
T4	108-68	Output I.F. Complete							
L1	114-76	6" P. M. Speaker							
L1	114-19	Speaker - 6" Magnetic							
S1		Switch on Volume Control							

ALIGNING I.F. TRANSFORMERS: (465 K.C.)

- With volume control full on and with variable condenser at its minimum capacity position, plates entirely out of mesh, and with external oscillator set at 465 K.C. connected in series with a .1 mfd. condenser, to the grid of the IA6 tube (cap at top of tube), adjust I.F. transformers, parts number 108-67 and 108-68, to resonance. Both of these transformers have two (2) adjustments each, they are accessible from the tops of the cans (for location see top view).
Use as a resonance indicator an output meter connected across the outside terminals of the speaker or by means of an adapter to the plate and screen of the type 1G5G output tube. Maximum deflection of the volt meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range meter should be used.

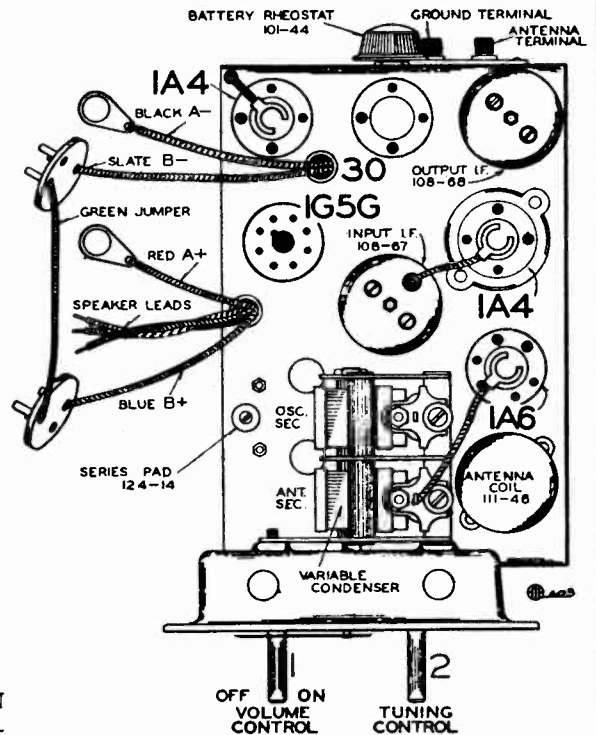
BROADCAST BAND ALIGNMENT:

- Set external oscillator to 1720 K.C. and connect it in series with a 200 mfd. condenser to the antenna and ground posts.
 - With variable condenser in its minimum capacity position, plates entirely out of mesh, adjust oscillator trimmer (rear section of variable condenser) to resonance.
 - Re-set external oscillator to 1400 K.C. Rotate variable condenser, pick up signal and adjust antenna trimmer (front section of variable condenser) to resonance.
 - Re -set external oscillator to 600 K.C., move dial pointer to 600 K.C., and adjust series pad, part number 124-14 (see top view), to resonance. While making this adjustment, slowly rock variable condenser to and fro until maximum output is obtained.
 - Check for sensitivity at 1400, 1000, 600 K.C. DO NOT BEND PLATES.

FOR BEST OPERATION THIS RECEIVER MUST HAVE AN OUTSIDE AERIAL NOT OVER FIFTY FEET LONG INCLUDING THE LEAD IN.

Frequency Range 535-1720 Kilocycles

TOP VIEW MODEL 523B



MODEL 524 Series A
Export Chassis 435
Schematic, Socket
Trimmers, Voltage
Alignment, Parts

BELMONT RADIO CORP.

(b) Adjust short wave antenna trimmer (Adjustment "Z") to resonance (see Fig. 3, bottom view).

BROADCAST BAND ALIGNMENT:

535 to 1750 Kilocycles

1. With band changing switch in the broadcast position, extreme left of its rotation and with external oscillator connected in series with "Dummy 2" to antenna and ground leads make following adjustments:

(a) Set external oscillator and dial on radio to 1400 K.C. and adjust broadcast oscillator trimmer to resonance. (Adjustment "Y"), (see bottom view of Chassis, Fig. 3). Tune gang condenser slowly back and forth while making this adjustment.

(b) Reset external oscillator to 600 K.C., and adjust broadcast series pad (adjustment "X") to resonance by rotating condenser to approximately 600 K.C. position. (Adjustment "X") is for the adjusting series pad. Maximum output is attained. This adjustment is located on the front flange of the chassis. (See bottom view of chassis, Fig. 3)

(c) Repeat adjustment "a" and "b" until sensitivity is at its maximum, also check to see that radio tunes to 1750 K.C.

(d) Check for tracking and sensitivity at 1400, 1000, and 600 kilocycles. Under no circumstances bend plates of variable condenser sections to correct tracking.

PROCEDURE FOR SETTING THE AUTOMATIC LEVERS:

There are six levers on the dial by means of which six stations may be selected.

Press down any one of the six levers. Holding it down, tune in by means of tuning knob No. 3 any one of your favorite stations. Turn the tuning knob very slowly back and forth until signal is clearest. The station will then be accurately tuned in. Adjust the volume by means of the volume control knob to the desired intensity.

Release this lever and press down any other lever. Hold this lever down and tune in by means of knob No. 3 another favorite station.

Follow this procedure until stations have been set on all the levers.

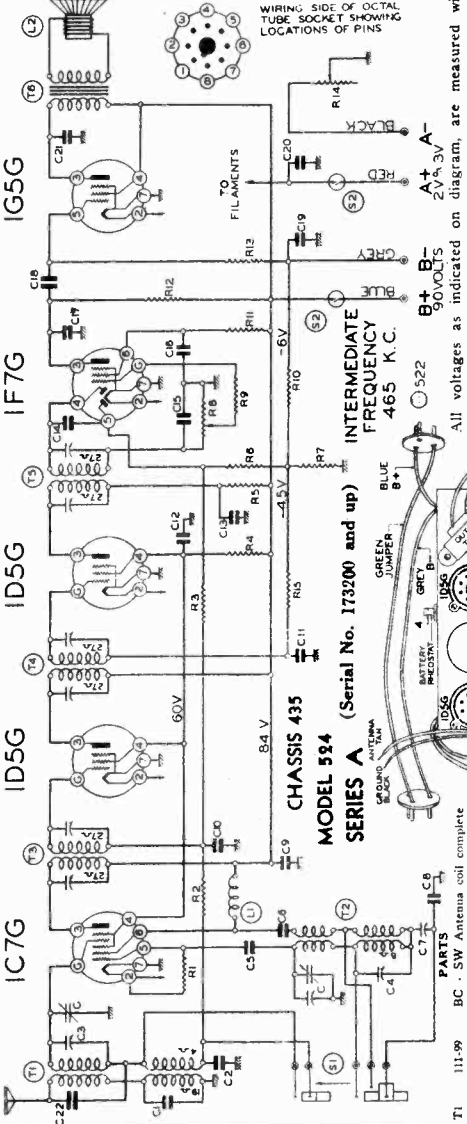
Rotate the tuning knob (No. 3) to the right (clockwise) as far as it will turn. Now remove from the right side of the cabinet the metal button, and, with a screw driver inserted through the hole, tighten the reset locking adjustment screw "5", (see Fig. 1). It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT.

This screw will lock in place all the stations you have selected on the levers. (Note: Reset Lock Screw "5" is loose when radio is shipped from factory).

If you should desire to change any station you selected to another, loosen the reset locking screw "5" four or five complete turns; select the new station as explained. (Note: If the dial mechanism works hard when setting up a new station for one of the automatic tuner levers, it is due to the locking screw being too tight. Loosen the reset locking screw "5" until the dial mechanism works freely with the tuner lever pressed down).

BE SURE TO RETIGHTEN THE RESET LOCK SCREW, otherwise the stations will not stay adjusted to the levers.

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



WIRING SIDE OF OCTAL TUBE SOCKET SHOWING LOCATIONS OF PINS

All voltages as indicated on diagram, are measured with a new set of batteries.
 Dummy 2: (Broadcast)—Consists of a .200 mfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.
 Dummy 3: (Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I. F. TRANSFORMERS: (465 K.C.):
 Part No. 108-79C Output I. F. Transformer
 Part No. 108-78C Interstage I. F. Transformer
 Part No. 108-116 Input I. F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see Fig. 1 Top View).
 1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), and with the variable condenser set to minimum capacity (plates out of mesh), make the following adjustments:

(a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1" to the control grid cap of the type 1D5G 2nd. I.F. Tube and adjust the output I.F. transformer (No. 108-79C) to resonance.

(b) With "Dummy 1" still connected, move oscillator output clip from grid of 1D5G 2nd. I.F. Tube to grid cap of 1D5G 1st. I.F. Tube and adjust interstage I.F. transformer (No. 108-78C) to resonance.

(c) Move oscillator to grid cap of 1C7G and adjust input I.F. transformer (No. 108-116).

SHORT WAVE BAND ALIGNMENT:

5.5 to 18.1 Megacycles
 1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the antenna and ground leads, make the following adjustments:

(a) Move dial pointer to 17 megacycles and adjust short wave oscillator trimmer to resonance.

This adjustment is the trimmer mounted on the top of front section of the variable gang condenser (see Fig. 1, top view).

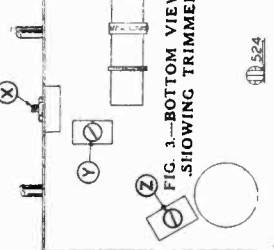
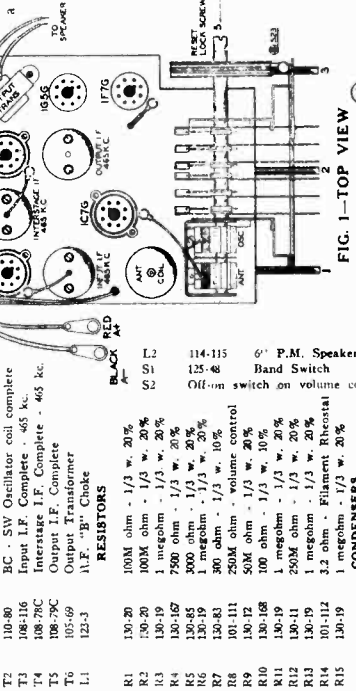


FIG. 1.—TOP VIEW
FIG. 3.—BOTTOM VIEW
 SHOWING TRIMMERS

FREQUENCY RANGE
 535 to 1750 K.C. (Kilocycles)
 5.5 to 18.1 M.C. (Megacycles)

DUMMY ANTENNAS:
 The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a .200 mfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

Part No.	Description	Value
T1	111-99	BC - SW Antenna coil complete
T2	110-80	BC - SW Oscillator coil complete
T3	108-116	Input I.F. Complete - 465 kc.
T4	108-78C	Interstage I.F. Complete - 465 kc.
T5	108-79C	Output I.F. Complete
T6	105-69	Output Transformer
L1	121-3	A.F. "B" Choke
R1	130-20	100M ohm - 1/3 w. 20%
R2	130-20	100K ohm - 1/3 w. 20%
R3	130-10	100 ohm - 1/3 w. 20%
R4	130-10	100 ohm - 1/3 w. 20%
R5	130-15	100 ohm - 1/3 w. 20%
R6	130-15	100 ohm - 1/3 w. 20%
R7	130-83	300 ohm - 1/3 w. 10%
R8	101-111	250M ohm - volume control
R9	130-12	50M ohm - 1/3 w. 20%
R10	130-168	100 ohm - 1/3 w. 20%
R11	130-19	1 megohm - 1/3 w. 20%
R12	130-11	250M ohm - 1/3 w. 20%
R13	130-19	1 megohm - 1/3 w. 20%
R14	101-112	3.2 ohm - Filament Rheostat
R15	130-19	1 megohm - 1/3 w. 20%
C	102-20	2 gang variable condenser
C1	128-46	.001 mica 10%
C2	100-25	.05 x 200 v. 25%
C3	128-39	2-20 mfd. Adj. Cond.
C4	128-39	2-20 mfd. Adj. Cond.
C5	128-38	.0005 Mica 10%
C6	100-25	.02 x 600 v. 25%
C7	124-38	580 mfd. Working Capacity Series Pad
C8	129-94	.003 minimum 2-1/2%
C9	100-50	.25 x 200 v. 20%
C10	100-86	.02 x 400 v. 25%
C11	100-59	.25 x 200 v. 25%
C12	100-50	.25 x 200 v. 20%
C13	100-20	.1 x 200 v. 25%
C14	129-3	.0005 Mica 20%
C15	129-60	.0015 Mica 20%
C16	100-30	.1 x 200 v. 25%
C17	129-21	.0005 Mica 20%
C18	100-11	.01 x 400 v. 25%
C19	119-52	.25 mid. 25 w.v.
C20	100-50	.25 x 200 v. 20%
C21	100-71	.04 x 600 v. 25%
C22	120-75	.0004 Coupling Capacity

BELMONT RADIO CORP.

MODEL 526
Schematic, Socket
Trimmers, Voltage
Alignment, Parts

PROCEDURE FOR SETTING THE AUTOMATIC LEVERS:

There are five levers on the dial by means of which five stations may be selected.

Press DOWN ALL THE WAY any one of the automatic tuner levers. Holding it down FIRMLY, tune in by means of the tuning knob (No. 2) the station indicated on the station call letter tab above this lever. Turn the tuning knob very slowly back and forth (while still holding lever in downward position) until the signal is clearest. The station will then be accurately tuned in. Release the lever.

Press down another automatic tuner lever. Holding it down FIRMLY, carefully tune in the station indicated on the call letter tab above this lever. Release this lever.

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

Now hold tuning knob securely with left hand to prevent it from turning, or Rotate the tuning knob (No. 2) to the right (clockwise) as far as it will turn, and with a coin (half dollar), tighten the special locking screw ("C") in the center of the tuning knob, (See Fig. 1).

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

If you should desire to change any station you selected to another, hold the tuning knob No. 2 securely and with a coin loosen the locking screw "C" one or two turns; select the new station as explained. Be sure to retighten the locking screw, otherwise the stations you have selected will not stay adjusted to the levers.

Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt.
All voltages as indicated on diagram are measured with 115 volts on the primary of the power transformer.

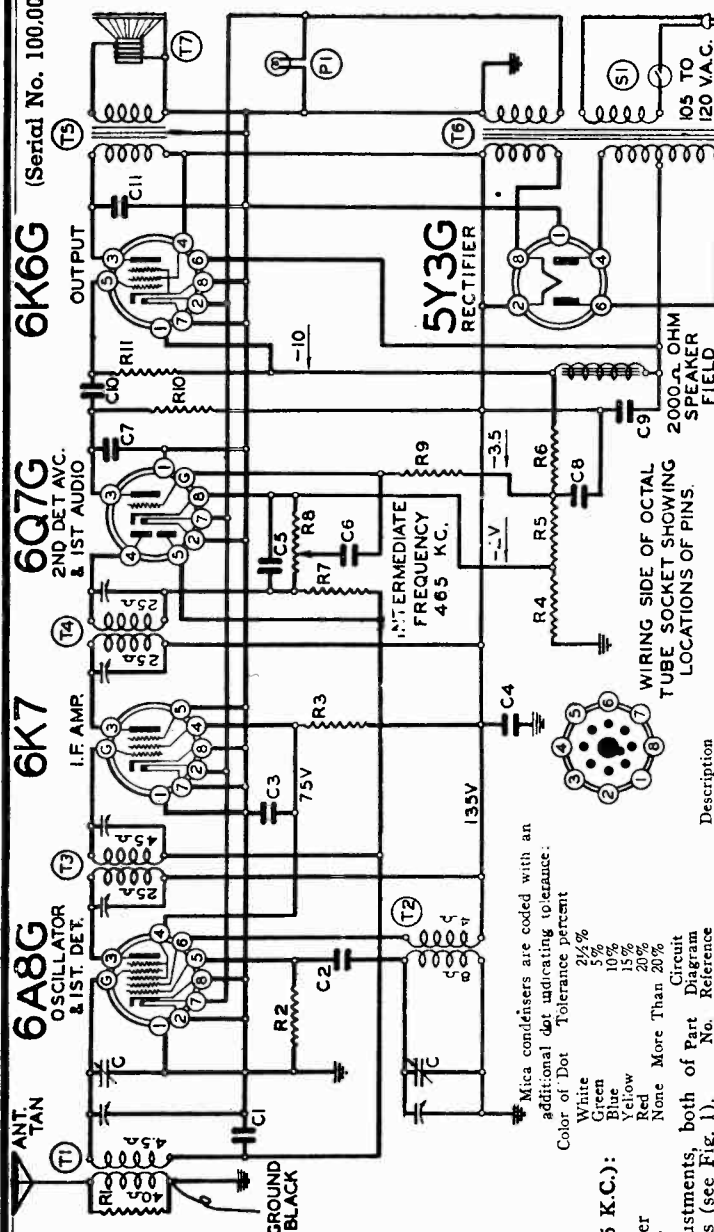


FIG. 1—TOP VIEW

Description	Reference
CONDENSERS	
.1 x 400 volt Tubular Condenser	C3
.05 x 200 volt Tubular Condenser	C1, C10
.01 x 400 volt Tubular Condenser	C4
.05 x 400 volt Tubular Condenser	C11
.06 x 400 volt Tubular Condenser	C5
.001 Mica Type Condenser	C6, C7, C8, C9
.0001 Mica Type Condenser	C1
.0005 Mica Type Condenser	C2
RESISTORS	
45 Ohm, 40 Ohm Metal Clad	R4, R5, R6
500 Ohm, 1/3 Watt Resistor	R7
200 Ohm, 1/3 Watt Resistor	R8
20K Ohm, 1/3 Watt Resistor	R9
600 Ohm, 1/3 Watt Resistor	R10
15M Ohm, 1/3 Watt Resistor	R11
3 Megohm, 1/3 Watt Resistor	R2, R3
COILS	
Output I.F. Coil Assembly, Complete with can	T4
Input I.F. Coil Assembly, Complete with can	T3
Oscillator Coil Assembly, Complete	T2
Antenna Coil Assembly, Complete	T1
SOCKETS	
Prong Octal Socket for "6K6"	T5
Prong Octal Socket for "6Q7"	T4
Prong Octal Socket for "6A8"	T3
Prong Octal Socket for "5Y3"	T2
Prong Octal Socket for "6K7"	T1
TRANSFORMERS	
50/60 Cycle Transformer 105-115 volt Primary	T6
25/60 Cycle Transformer 105-115 volt Primary	T7
SPEAKER	
Five Inch Dynamic Speaker (Field 2000 Ohms)	T7*
Output Transformer for Speaker (Mounted on Chassis)	T5
MISCELLANEOUS	
101-107 R8, S1 Volume Control, and Switch (500M Ohms)	
102-67 C Two Gang Variable Condenser	

ALIGNING I.F. TRANSFORMERS: (465 K.C.):

- Part No. 108-95B Output I.F. Transformer
 - Part No. 108-96 Input I.F. Transformer
- These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see Fig. 1).
- With volume control full on (the extreme right of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:
 - (a) Connect external oscillator set at 465 kilocycles, in series with .1 mfd. condenser, to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-95B) to resonance.
 - (b) Move oscillator output clip from grid of 6K7 to grid of 6A8G and adjust input I.F. transformer (No. 108-96) to resonance.
 - (c) With oscillator still connected to 6A8G, readjust output I.F. transformer (108-95B) if necessary.

R.F. ALIGNMENT: (535-1720 K.C.)

- With the gang condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator in series with a 100 mfd. condenser to the antenna lead and chassis ground and make the following adjustments:
 - (a) With external oscillator set at 1720 kilocycles, adjust oscillator trimmer to resonance. This adjustment is on the top of rear section of variable gang condenser. (See Fig. 1).
 - (b) Re-set external oscillator to 1400 kilocycles, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance. (Top of front section of gang condenser).
 - (c) Check sensitivity at 600 and 1000 kilocycles.

MODEL 531 Series B
Serial 187500 up
Schematic, Voltage

BELMONT RADIO CORP.

Socket, Trimmers
Alignment, Parts

ALIGNING I.F. TRANSFORMERS: (470 K.C.):

Part No. 108-95D Output I.F. Transformer

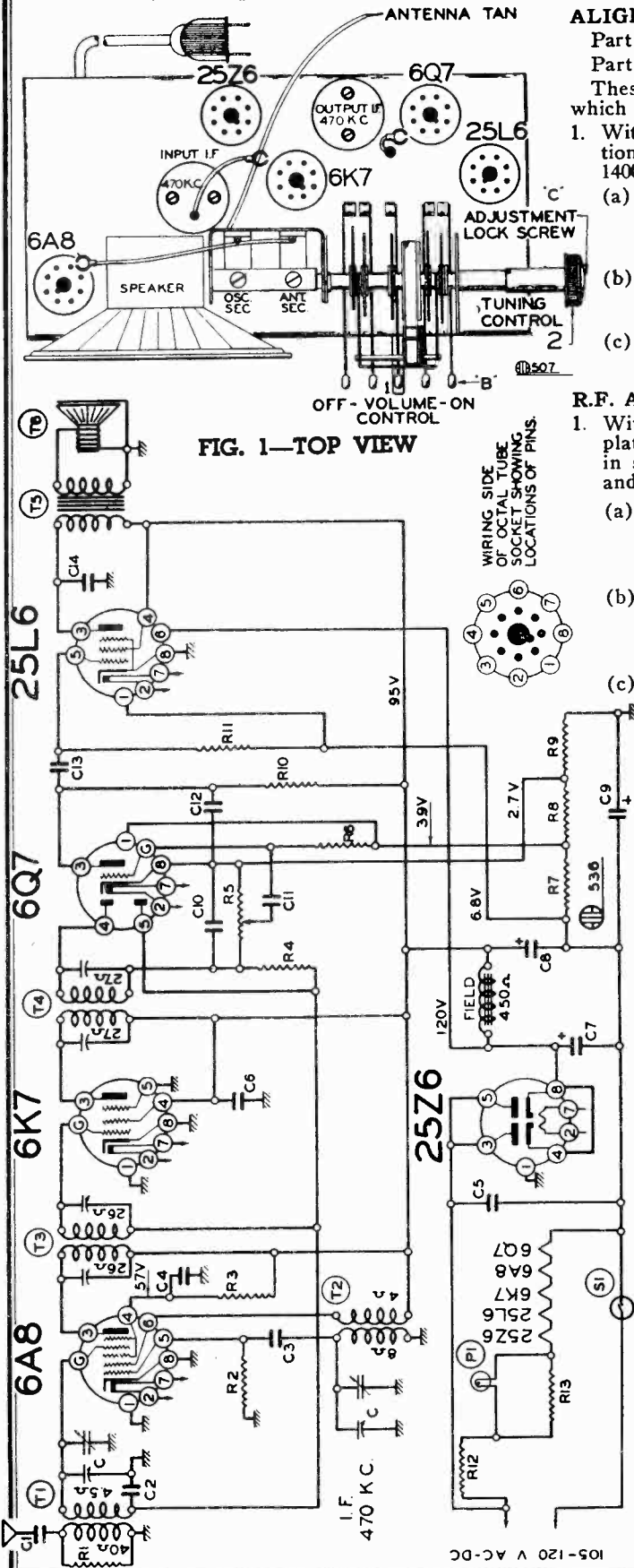
Part No. 108-117E Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see Fig. 1).

1. With volume control full on (the extreme right of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:
 - (a) Connect external oscillator set at 470 kilocycles, in series with .1 mfd. condenser, to the control grid cap of the type 6K7G tube, and adjust the output I.F. transformer (No. 108-95D) to resonance.
 - (b) Move oscillator output clip from grid of 6K7G to grid of 6A8G and adjust input transformer (No. 108-117E) to resonance.
 - (c) With oscillator still connected to 6A8G, readjust output I.F. transformer (108-95D) if necessary.

R.F. ALIGNMENT: (530-1720 K.C.)

1. With gang condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator in series with a 100 mmf. condenser to the antenna lead and chassis ground and make the following adjustments:
 - (a) With external oscillator set at 1720 kilocycles, adjust oscillator trimmer to resonance. This adjustment is on the top of rear section of variable gang condenser. (See Fig. 1).
 - (b) Re-set external oscillator to 1400 kilocycles, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance. (Top of front section of gang condenser).
 - (c) Check sensitivity at 660 and 1000 kilocycles.



COILS	
108117	T3 Input I. F. Coil Assembly Complete with Can.
10895D	T4 Output I. F. Coil Assembly Complete with Can.
11073	T2 Oscillator Coil Assembly Complete.
11192B	T1 Antenna Coil Assembly Complete.

SOCKETS	
12193	Eight Prong Octal Sockets.

SPEAKER	
114116B	T6 Five Inch Dynamic Speaker (Field 450 Ohms)
10560	T5 Output Transformer for Speaker.

MISCELLANEOUS	
101113	R5, S1 Volume Control and Switch (1 megohm)

PROCEDURE FOR SETTING AUTOMATIC TUNING LEVERS SAME AS MODEL-526

Part No.	Description
1001	C5 1 x 400 Volt Tubular Condenser
1009	C4 .05 x 200 Volt Tubular Condenser
10011	C11, C13 .01 x 400 Volt Tubular Condenser
10020	C6 .1 x 200 Volt Tubular Condenser
10067	C14 .02 x 400 Volt Tubular Condenser
19537B	C7, C8, C9 50MFD-50MFD-40MFD Lytic Filter
1292	C1 .0005 Mica Type Condenser-20%
1295	C3 .0001 Mica Type Condenser-20%
12912	C2, C12 .00025 Mica Type Condenser-20%
10648	R13 55 ohm Metal Clad Resistor
13011	R11 250M Ohm-1/2 Watt Resistor-20%
13012	R2 10M Ohm-1/2 Watt Resistor-20%
13019	R6 1. Meg. Ohm-1/2 Watt Resistor-20%
13021	R1 20M Ohm-1/2 Watt Resistor-20%
13010	R10 150M Ohm-1/2 Watt Resistor-20%
130149	R3 15M Ohm-1/2 Watt Resistor-20%
130170	R4 3 Meg. Ohm-1/2 Watt Resistor-25%
130174	R7, R9 50 Ohm-1/2 Watt Resistor-10%
130215	R8 25 Ohm-1/2 Watt Resistor-10%

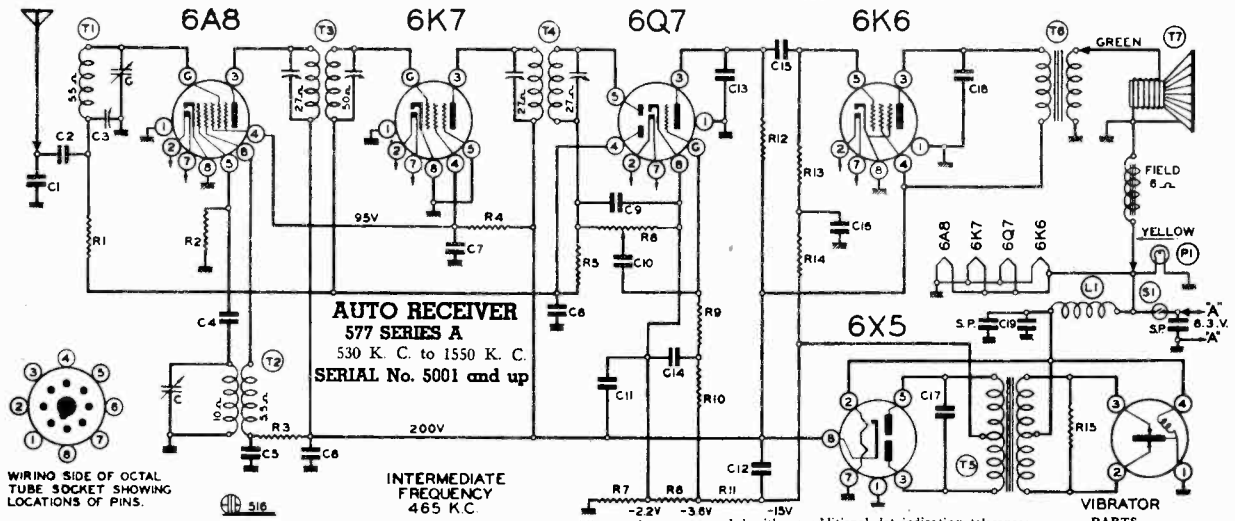
Voltagess taken from different points of circuit to chassis are measured with volume-control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt.

All voltages as indicated on diagram are measured with 117 volt A.C. or D.C. line.

Alignment, Parts
Tuner Data

BELMONT RADIO CORP.

MODEL 577 Series A
Schematic, Voltage
Socket, Trimmers



RESISTORS

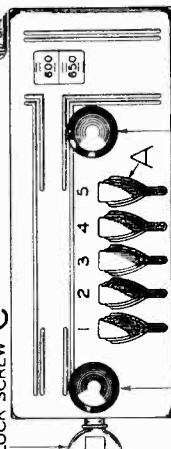
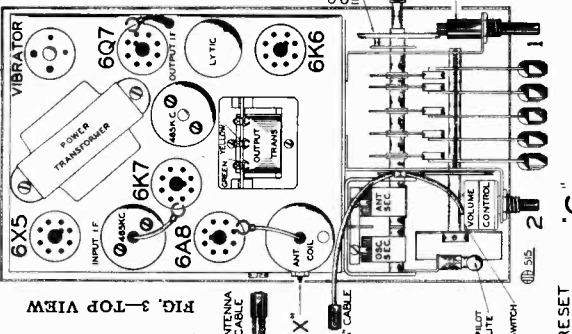
Code No.	Part No.	Description
R1	130-186	250M ohm - 1/10 w. 20%
R2	130-117	50M ohm - 1/10 w. 20%
R3	130-164	30M ohm - 1/4 w. 20%
R4	130-213	25M ohm - 1 watt 10%
R5	130-126	3 megohm - 1/10 w. 20%
R6	101-110	1 megohm volume control
R7	130-174	50 ohm - 1/4 w. 10%
R8	130-211	30 ohm - 1/4 w. 10%
R9	130-209	2 megohm - 1/4 w. 20%
R10	130-210	1 megohm - 1/4 w. 20%
R11	130-212	250 ohm - 1 watt 10%
R12	130-186	250M ohm - 1/10 w. 20%
R13	130-186	250M ohm - 1/10 w. 20%
R14	130-186	250M ohm - 1/10 w. 20%
R15	130-84	200 ohm - 1/4 w. 20%

CONDENSERS

Code	Part No.	Description	Color of Dot	Tolerance Percent
C1	102-69	2 gang variable condenser		
C2	129-3	.0002 Mica 20%	White	2 1/2%
C3	100-55	.01 x 400 v. 25%	Green	5%
C4	124-34	Antenna Trimmer	Blue	10%
C5	129-12	.00025 Mica 20%	Yellow	15%
C6	100-20	.1 x 200 v. 25%	Red	20%
C7	100-85	.05 x 400 v. 25%	None	More than 20%
C8	100-20	.1 x 200 v. 25%		
C9	100-9	.05 x 200 v. 25%		
C10	129-5	.0001 Mica 20%		
C11	100-78	.01 x 200 v. 25%		
C12	119-50	8. mid. lytic		
C13	119-50	8. mid. lytic		
C14	129-2	.0005 Mica 20%		
C15	100-78	.01 x 200 v. 25%		
C16	100-19	.006 x 600 v. 25%		
C17	100-34	.005 x 1200 v. 10%		
C18	100-87	.01 x 600 v. 25%		
C19	100-31	.5 x 120 v. 50-10%		

PARTS

Code	Part No.	Description
T1	111-95	Antenna coil complete
T2	110-76	Oscillator coil complete
T3	108-96D	Input I.F. 465 kc. - complete
T4	108-95C	Output L.F. 465 kc. - complete
T5	104-131	Power Transformer
T6	105-69	Output Transformer
T7	114-114	5" Dynamic Speaker
L1	105-19	"A" Filter Choke
P1	107-97	6.8 v. pilot light
SP		Off-on Switch on Volume Control
SP		Spark Plates



TUNING FRONT VIEW VOLUME CONTROL
1 CONTROL FIG. 2 & OFF ON SWITCH

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

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

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

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

It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT.

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

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

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

In order to prevent signal from acting upon A.V.C. and affecting accuracy of voltage measurements, aerial and ground leads should be short circuited while making measurements.

All voltages are to be measured with 6.3 volts input to receiver. Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagram.

DUMMY ANTENNAS

The dummy antennas referred to in the following instructions are:

"I.F. Dummy" - A .5 mfd. condenser connected in series with the test oscillator output lead.

"Broadcast Dummy" - A 175 mmfd. condenser connected in series with the output lead of the test oscillator.

L.F. ALIGNMENT: (465 K.C.)

1. With variable condenser in its minimum capacity position (plates entirely out of mesh) and with volume control full on, connect test oscillator set at 465 K.C. in series with I.F. dummy antenna, to grid of 6K7 I.F. tube.
2. Adjust trimmer condensers of output I.F. transformer.
3. Move test oscillator connection to grid of 6A8 tube and adjust trimmer condensers of input I.F. transformer. No. 108-96D to resonance with oscillator. There are two adjustments on each and they are accessible from the top of the transformer shield and should be adjusted with an insulated screw driver. (See Fig. 3-top view, page 3.)

BROADCAST ALIGNMENT

1. With variable condenser in its minimum capacity position, connect test oscillator set at 1550 K.C. in series with broadcast dummy to the antenna lead of receiver.
2. Adjust oscillator trimmer of variable condenser to resonance. (This adjustment is the rear section of the two-gang condenser—see top view, Fig. 3.)
3. Shift test oscillator to 1400 K.C. and pick up signal by rotating condenser and adjust antenna trimmer (front section of gang condenser) to resonance (see top view, Fig. 3).
4. Re-set test oscillator to 600 K.C. and rotate variable condenser to 600 K.C. Adjust series pad in the antenna circuit for maximum gain. This pad is mounted on the side of the antenna can, adjustment "X."
5. Go back and check 1400 K.C. If adjustment is made here, check 600 K.C. again.
6. Check for sensitivity at 1000 K.C. by setting test oscillator to this frequency and picking up the signal by rotating variable condenser. Under no circumstances bend plates of variable condenser sections to correct tracking.

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

PROCEDURE FOR SETTING THE AUTOMATIC LEVERS

There are five levers on the dial by means of which five stations may be selected. (See "A" Fig. 2).

Make a list of local stations you tune in regularly; any number up to and including five.

Any order of grouping can be used, either by assigning to call letters for the levers alphabetically or arranging them to correspond with the calibration on the dial scale, namely starting with the lowest frequency station on the right and so on up in frequency to the highest frequency station on the left.

MODEL 583 Export Series A Schematic, Voltage

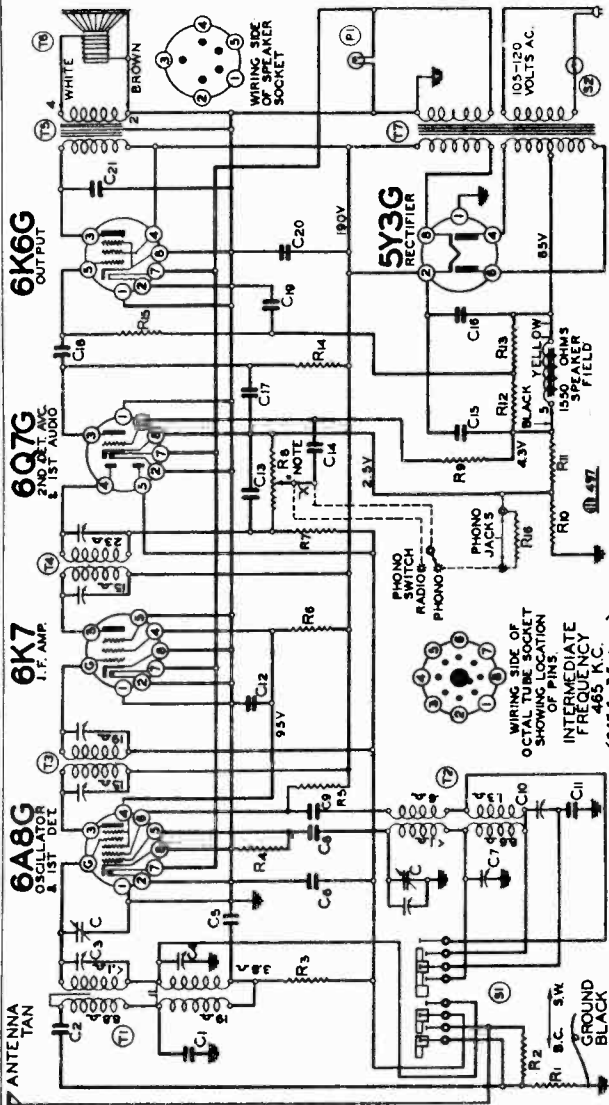
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Socket, Trimmers Parts

POWER SUPPLY:

Receivers of this model which are to be used on voltages or frequencies other than 110-130-230 volts, 40-60 cycles are so marked. (Standard chassis is equipped with regular 105-115 volt 50/60 cycle Power Transformer). The power consumption of this receiver is 55 watts. (See taps on top of power transformer.) 110 Tap: For line voltages of 100 to 125 volts. 130 Tap: For line voltages of 125 to 145 volts. 230 Tap: For line voltages of 210 to 250 volts.

To remove the chassis from the cabinet, remove the four bolts which are used to fasten the chassis to the cabinet bottom; remove the special locking screw in the center of the tuning knob on the side of the cabinet; pull the knobs off their shafts and pull off the six button lever keys on front of dial.



*NOTE.—When phono connections are made, wire marked "X" should be cut and phono connections made as indicated by dotted lines. Resistor R16 and phono jacks should be added.

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

All voltages are to be measured with 115 volts on the primary of the power transformer. 535 to 1720 K.C. (Kilocycles) FREQUENCY RANGE 5.45 to 18.3 M.C. (Megacycles) (645.1 Meters)

2-Band A. C. Superheterodyne Receiver CHASSIS MODEL 583 SERIES "A"

Code No.	Description	Value	Tolerance	Color of Dot
R1	RESISTORS	10M ohm - 1/3 w. 20%	2 1/2 %	White
R2	130-41	800 ohm - 1/3 w. 20%	5 %	Green
R3	130-20	100M ohm - 1/3 w. 20%	10 %	Blue
R4	130-12	50M ohm - 1/3 w. 20%	15 %	Yellow
R5	130-36	10M ohm - 1/3 w. 20%	20 %	Red
R6	130-42	20M ohm - 1/2 w. 20%	More than 20 %	None
R7	130-4	3 megohm - 1/3 w. 20%		
R8	101-100	1 megohm volume control		
R9	130-4	3 megohm - 1/3 w. 20%		
R10	130-204	55 ohm - 1/3 w. 10%		
R11	130-203	40 ohm - 1/3 w. 10%		
R12	130-205	100M ohm - 1/3 w. 10%		
R13	130-46	800M ohm - 1/3 w. 10%		
R14	130-9	200M ohm - 1/3 w. 20%		
R15	130-102	500M ohm - 1/3 w. 10%		
R16	130-57	35M ohm - 1/3 w. 20%		
C	CONDENSERS	2 gang variable condenser		
C1	129-49	.0009 mica 5%		
C2	129-87	.000105 mica 10%		
C3	124-39C	2-25 mmf. Adj. Cond.		
C4	124-30B	2-20 mmf. Adj. Cond.		
C5	100-37	.003 x 600 v. 10%		
C6	100-22	.05 x 200 v. 25%		
C7	124-30B	2-20 mmf. Adj. Cond.		
T1	111-93	Antenna coil complete		
T2	110-74	Oscillator coil complete		
T3	108-111B	Input I.F. Complete 465 kc.		
T4	108-112B	Output I.F. Complete 465 kc.		
T5	105-57	Output Transformer		
T6	114-110	6" Dynamic Speaker (1550 Ohm Field)		
T7	104-124	Power Transformer		
S1	104-127	Power Transformer - Universal		
S2	125-46	Band Switch		
P1	107-94	Off-on switch on volume control		
P2		Pilot Light		

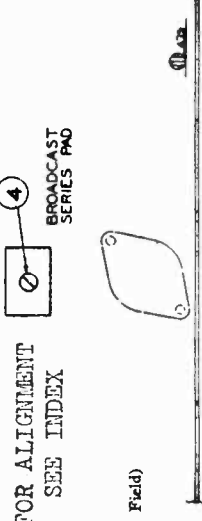


FIG. 3.—BOTTOM VIEW SHOWING TRIMMERS

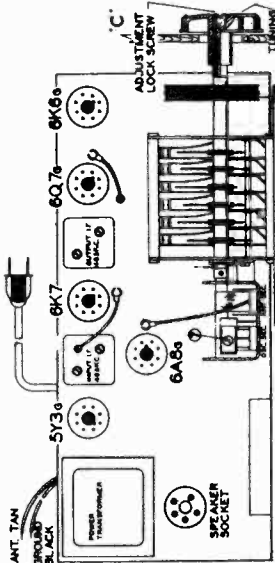


FIG. 1.—TOP VIEW

Mica condensers are coded with an additional dot indicating tolerance:

PROCEDURE FOR SETTING THE AUTOMATIC TUNER LEVERS
See Model 582

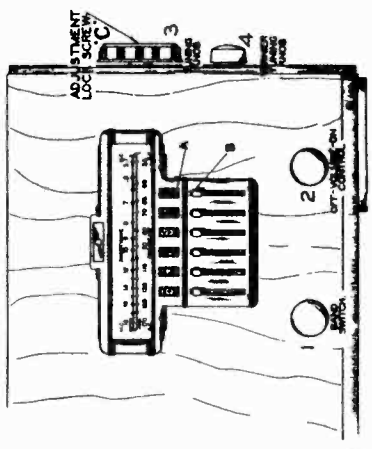


FIG. 2.—FRONT VIEW

Schematics, Voltage
Socket, Trimmers, Parts

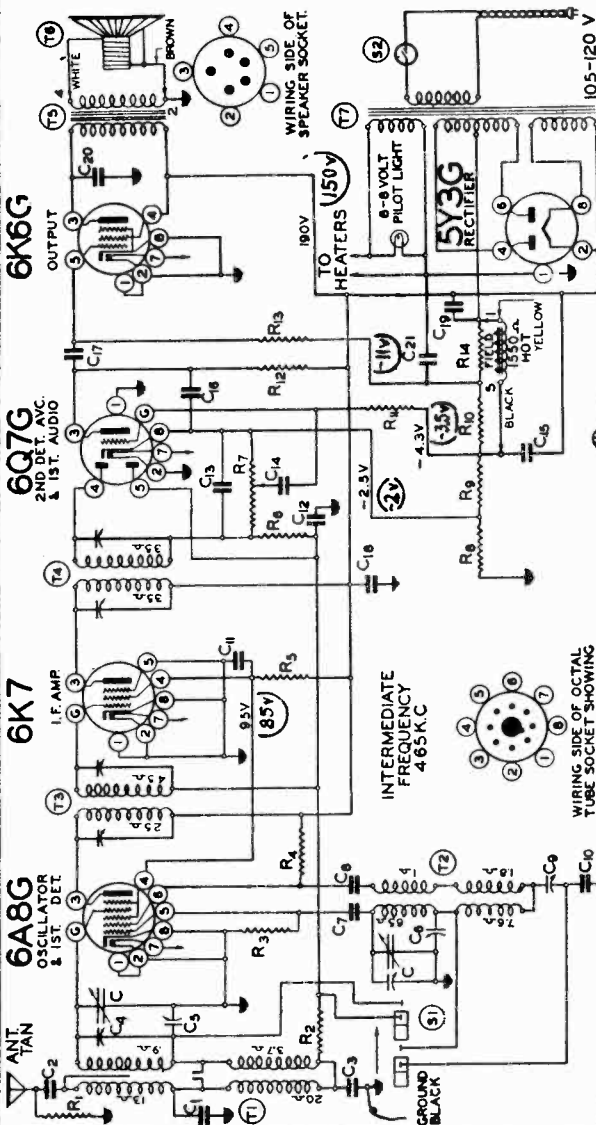
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MODEL 582
Series A, 7L894500 up
Series B, 8E106200 up

Mica condensers are coded with an additional dot indicating tolerance:

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

Voltages in Circles are for Series "A"



Code No.	Part No.	Description
R1	130-17	10M ohm - 1/3 w. 20%
R2	130-20	100M ohm - 1/3 w. 20%
R3	130-12	50M ohm - 1/3 w. 20%
R4	130-17	10M ohm - 1/3 w. 20%
R5	130-42	20M ohm - 1/2 w. 20%
R6	130-4	3 megohm - 1/3 w. 20%
R7	101-100	1 megohm - Volume Control
R8	130-203	55 ohm - 1/3 w. 10%
R9	130-203	40 ohm - 1/3 w. 10%
R10	130-205	100M ohm - 1/3 w. 10%
R11	130-4	3 megohm - 1/3 w. 20%
R12	130-9	200M ohm - 1/3 w. 20%
R13	130-102	500M ohm - 1/3 w. 10%
R14	130-46	800M ohm - 1/3 w. 10%
C7	120-5	.0001 Mica 20%
C8	100-12	.003 x 600 25%
C9	124-44	450 wkg. cap. - Series pad
C10	129-85	.0014 - 2 1/2 % Mica
C11	100-79	.25 x 400 v. 50 - 10%
C12	100-9	.05 x 200 v. 25%
C13	129-5	.0001 Mica 20%
C14	100-11	.01 x 400 v. 25%
C15	119-48	8 mfd. x 350 v. v. lytic
C16	120-2	.0005 Mica 20%
C17	100-16	.01 x 400 v. 10%
C18	100-13	.05 - 400 v. 25%
C19	119-48	4 mfd. x 350 v. v. lytic
C20	100-19	.006 x 600 v. 25%
C21	100-4	.1 x 200 v. 10%

CONDENSERS

C	102-63	2 Gang Variable
C1	120-86	.00038 Mica 5%
C2	120-47	.000105 Mica 10%
C3	100-77	.00004 x 600 v. 5%
C4	124-39C	2-25 mmf. Adjustable Capacitor
C5	124-30B	2-20 mmf. Dual Adjustable Capacitor
C6	124-30B	2-20 mmf. Dual Adjustable Capacitor

Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a voltmeter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on the circuit diagram.
All voltages are to be measured with 115 volts on the primary of the power transformer.

FIG. 3.—BOTTOM VIEW SHOWING TRIMMERS

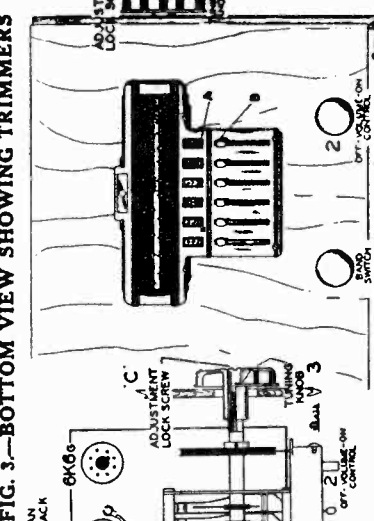
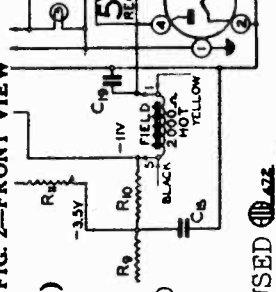


FIG. 2.—FRONT VIEW



SERIES "A" (Serial No. 7L894500 and up)

R5	130-149	15M ohm - 1/3 w. 20%
R8	106-45	65 ohm 10%
R9	106-45	45 ohm 10%
R10	106-45	220 ohm 10%
R14	Grid Bias Res.	NOT USED
C15	119-47	5.0 mfd. 250 v. lytic
C19	119-47	5.0 mfd. 250 v. v. lytic
C20	100-12	.003 x 600 v. 25%
C21	Bias-Filter Cond.	NOT USED

MODEL 582, Series A, B
Tuner, Alignment, Note

BELMONT RADIO CORP.

**MODEL 582 SERIES "A" (Serial No. 7L894500 and up)
SERIES "B" (Serial No. 8B106200 and up)**

PROCEDURE FOR SETTING THE AUTOMATIC TUNER LEVERS:

There are six levers on the dial by means of which six stations may be selected, (See "B", Fig. 2).

Make a list of local stations you tune in regularly; any number up to and including 6.

Punch out from the set of station call letter tabs supplied, the call letters of the stations you have selected.

Above each automatic tuner lever an opening in the escutcheon is provided for inserting the call letter tabs, (See "A" Fig. 2). Any order of grouping can be used, either by arranging the call letters alphabetically or grouping them to correspond with the calibration on the dial scale, namely starting with the lowest frequency station on the right and so on up in frequency to the highest frequency station on the left.

Insert the call letter tabs in the rectangular openings in the escutcheon above each of the automatic tuner levers. One of the small celluloid tabs supplied should be snapped into place over each of the station call letter tabs.

Press down any one of the automatic tuner levers. Hold it down, and by means of the tuning knob No. 3, tune in very carefully the station you have selected for this lever. Turn the tuning knob very slowly back and forth until the signal is clearest. The station will then be accurately tuned in.

Release the lever and press down another automatic tuner lever. Hold it down and carefully tune-in the station indicated on the station call letter tab above this lever.

Follow this procedure until you have selected all of your favorite stations. Hold tuning knob securely with left hand to prevent it from turning and with a coin (half dollar), tighten the special locking screw ("C") in the center of the tuning knob, (See Fig. 1).

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

If you should desire to change any station you selected to another, hold the tuning knob No. 3 securely and with a coin loosen the locking screw "C" one or two turns; select the new station as explained. **Be sure to retighten the locking screw**, otherwise the stations you have selected will not stay adjusted to the levers.

To remove the chassis from the cabinet, remove the four bolts which are used to fasten the chassis to the cabinet bottom; remove the special locking screw in the center of the tuning knob on the side of the cabinet; pull the knobs off their shafts and pull off the six button lever keys on front of dial.

DUMMY ANTENNAS:

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Short Wave)—Consists of a .1 mfd. condenser and a 40 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS: (465 K.C.):

Part No. 108-106F Output I.F. Transformer

Part No. 108-105E Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), and with variable condenser in its minimum capacity position, plates entirely out of mesh, make the following adjustments:

(a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1", to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-106F) to resonance.

(b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap of 6A8G and adjust input I.F. transformer (No. 108-105E) to resonance.

**SHORT WAVE BAND ALIGNMENT:
2000 to 7000 Kilocycles**

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 6 megacycles and connected in series with "Dummy 3" to the antenna and ground leads, make the following adjustments:

(a) Move dial pointer to 6 megacycles and adjust short wave oscillator trimmer to resonance.

This adjustment is the trimmer mounted on the top of rear section of the variable gang condenser (see Fig. 1, top view, adjustment number 7).

(b) Adjust short wave antenna trimmer (Adjustment Number 3), to resonance (see Fig. 3, bottom view).

**BROADCAST BAND ALIGNMENT:
535 to 1720 Kilocycles**

1. With band changing switch in the broadcast position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to antenna and ground leads make following adjustments:

(a) Set external oscillator to 1720 K.C. and adjust broadcast oscillator trimmer to resonance. (Adjustment number 1, see bottom view of chassis, Fig. 3).

(b) Re-set external oscillator to 1400 K.C., rotate variable gang condenser and pick up signal. Adjust broadcast antenna trimmer (adjustment number 2), to resonance.

(c) Re-set external oscillator to 600 K.C., and adjust broadcast series pad (adjustment number 4), to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 3).

(d) Repeat adjustments "a" and "c" until sensitivity is at its maximum.

(e) Set external oscillator to 1890 K.C. (Image of 960 K. C.) and tune in the signal at 960 K.C. on the dial. Adjust the wire capacitor, (Adjustment number 6) by twisting the two wires until a **Minimum** output is obtained on output meter.

(f) Set external oscillator to 2630 K.C. (Image of 1700 K.C.) and tune in the signal at 1700 K.C. on the dial. Adjust the wire capacitor (Adjustment number 5), by moving the wire either toward or away from the coil winding until a **Minimum** output is obtained on output meter.

(g) Repeat adjustments (e) and (f) until the sensitivity is at a **Minimum**.

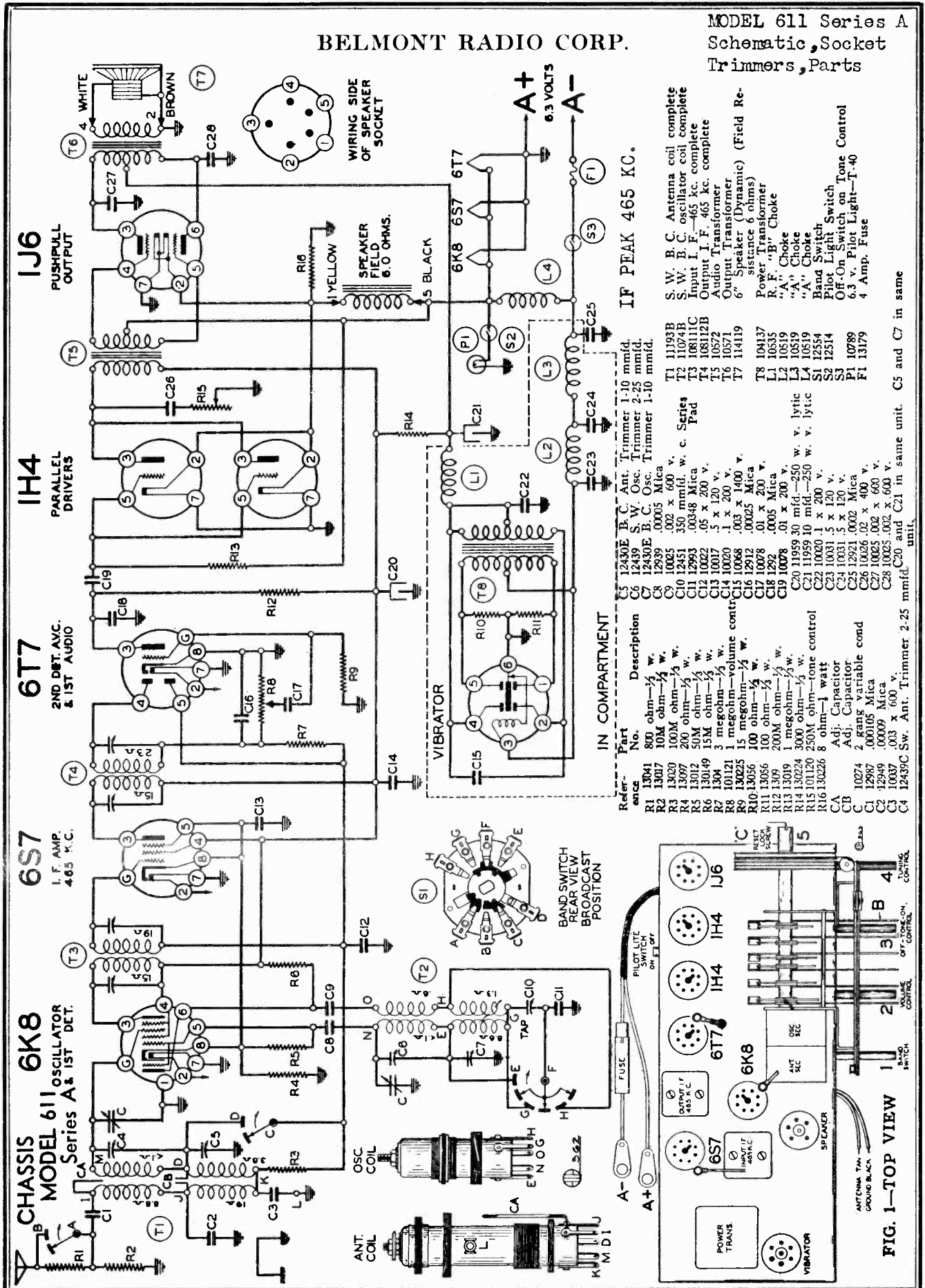
(h) Recheck the broadcast antenna trimmer (Adjustment number 2).

(i) Recheck the short wave antenna trimmer (Adjustment number 3).

Series "A" receivers (Serial Numbers 7L894500 and up) have several differences from Series "B" (Serial Numbers 8B106200 and up). These are shown on the schematic page with a portion of the schematic.

BELMONT RADIO CORP.

MODEL 611 Series A
Schematic, Socket
Trimmers, Parts



MODEL 611 Series A
Voltage, Alignment
Tuner, Notes

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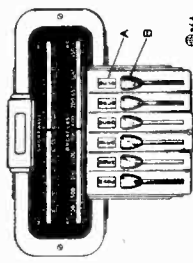
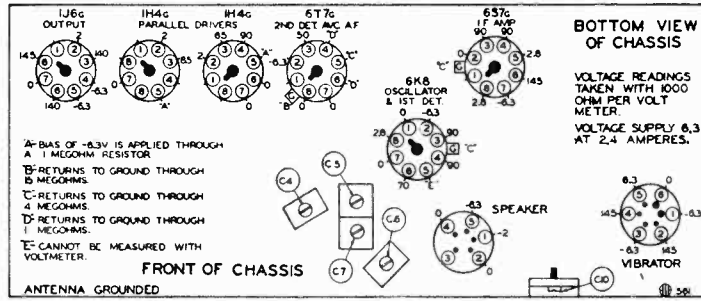


FIG. 2—FRONT VIEW



BOTTOM VIEW OF CHASSIS

VOLTAGE READINGS TAKEN WITH 1000 OHM PER VOLT METER.
VOLTAGE SUPPLY 6.3 AT 2.4 AMPERES.

FRONT OF CHASSIS

- A: BASE OF -0.3V IS APPLIED THROUGH A MEGOHM RESISTOR
- B: RETURNS TO GROUND THROUGH MEGOHMS
- C: RETURNS TO GROUND THROUGH MEGOHMS
- D: RETURNS TO GROUND THROUGH MEGOHMS
- E: CANNOT BE MEASURED WITH VOLTMETER.

escutcheon above each of the automatic tuner levers. One of the small celluloid tabs supplied should be snapped into place over each of the station call letter tabs.

Press DOWN ALL THE WAY any one of the automatic tuner levers. Holding it down FIRMLY, tune in by means of the tuning knob (No. 4) the station indicated on the station call letter tab above this lever. Turn the tuning knob very slowly back and forth (while still holding lever in downward position) until the signal is clearest. The station will then be accurately tuned in. Release the lever.

Press down another automatic tuner lever. Holding it down FIRMLY, carefully tune in the station indicated on the call letter tab above this lever. Release this lever.

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

Rotate the tuning knob (No. 4) to the right (clockwise) as far as it will turn. Now rotate from the right edge of the cabinet the metal button and with a screw driver inserted through the hole, tighten the reset locking adjustment screw "C" (See Fig. 1). It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT.

This screw will lock in place all the stations you have selected on the levers. (Note: Reset Lock Screw "C" is loose when radio is shipped from factory.)

If you should desire to change any station you selected to another, loosen the reset locking screw "C" one-fourth or five sixteenths of a turn; set the new station as explained. (Note: If "A" the dial mechanism is used, set the dial up to the station for one of the automatic tuner levers, it is then locked in place by the arrangement of the reset locking screw "C" being too tight. Loosen the reset locking screw "C" until the dial mechanism works freely with the tuner lever pressed down.)

BE SURE TO RETIGHTEN THE RESET LOCK SCREW, otherwise the stations will not stay adjusted to the levers.

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

The following equipment will provide an accurately calibrated signal at the test frequency.

- An all wave signal generator which will provide an accurately calibrated signal at the test frequency.
- Output indicating meter.
- Non-heatable screwdriver.

ALIGNMENT PROCEDURE

The following equipment is required for alignment down on the lever and your favorite station is selected.

- An all wave signal generator which will provide an accurately calibrated signal at the test frequency.
- Output indicating meter.
- Non-heatable screwdriver.

good. If fuse blows out frequently and insulating sleeve has been properly placed over fuse, the trouble is probably in the vibrator, it should be replaced. Do not attempt to make any adjustments on the vibrators.

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

ALIGNING INSTRUCTIONS:

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

PROCEDURE FOR SETTING THE AUTOMATIC TUNER LEVERS:

There are six levers on the dial by means of which six locking screws are turned until it is ABSOLUTELY TIGHT. Make up a list of local stations you tune in regularly, any number up to and including 6.

Punch out from the set of station call letter tabs supplied, the call letters of the stations you have selected.

Above each automatic tuner lever an opening in the escutcheon is provided for inserting the call letter tabs. (See "A" the dial mechanism in Fig. 2). Any order of grouping can be used, either by arranging the call letters alphabetically or grouping them to correspond with the calibration on the dial scale, namely starting until with the lowest frequency station on the right and so on up to the highest frequency station on the left.

Insert the call letter tabs in the rectangular openings in the levers.

SERVICE DATA

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

- 1—Type 6X8 Triode Hexode, First Detector-oscillator.
- 1—Type 6S7G Remote Cut-Off Pentode, I. F. Amplifier (465 K. C.)
- 1—Type 6T7G Duplex Diode Triode Second Detector, A. V. C. and First Audio.
- 2—Type 1H4G Triode Parallel Drivers.
- 1—Type 1J6G Push-Pull Class B Output Amplifier.

SERVICE NOTES:

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

All voltages are to be measured with 6.3 volts input to receiver.

Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagram.

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

Failure to operate, noisy or weak reception is usually due to defective tubes, the tubes making poor contact with sockets or grid clips making poor contact with the caps of the tubes. Tubes may be checked very easily by replacing with other tubes which are known to be good.

- 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.

SIGNAL GENERATOR

Frequency Setting

Dummy Antenna Connection to Radio

Position of Band Switch

Variable Condenser Setting

Trimmers Adjusted (in Order Shown)

Adjustment

Trimmer Function

Output

Input

Short wave Oscillator

Antenna

Broadcast

Broadcast

Broadcast

Wire capacitor (CB)

Image rejection

Image rejection

Adjust by moving for minimum output. (See note "B")

Adjust by moving for minimum output. (See note "C")

Adjust by twisting for minimum output. (See note "B")

Adjust by moving for minimum output. (See note "C")

Adjust by twisting for minimum output. (See note "B")

Adjust by moving for minimum output. (See note "C")

Adjust by twisting for minimum output. (See note "B")

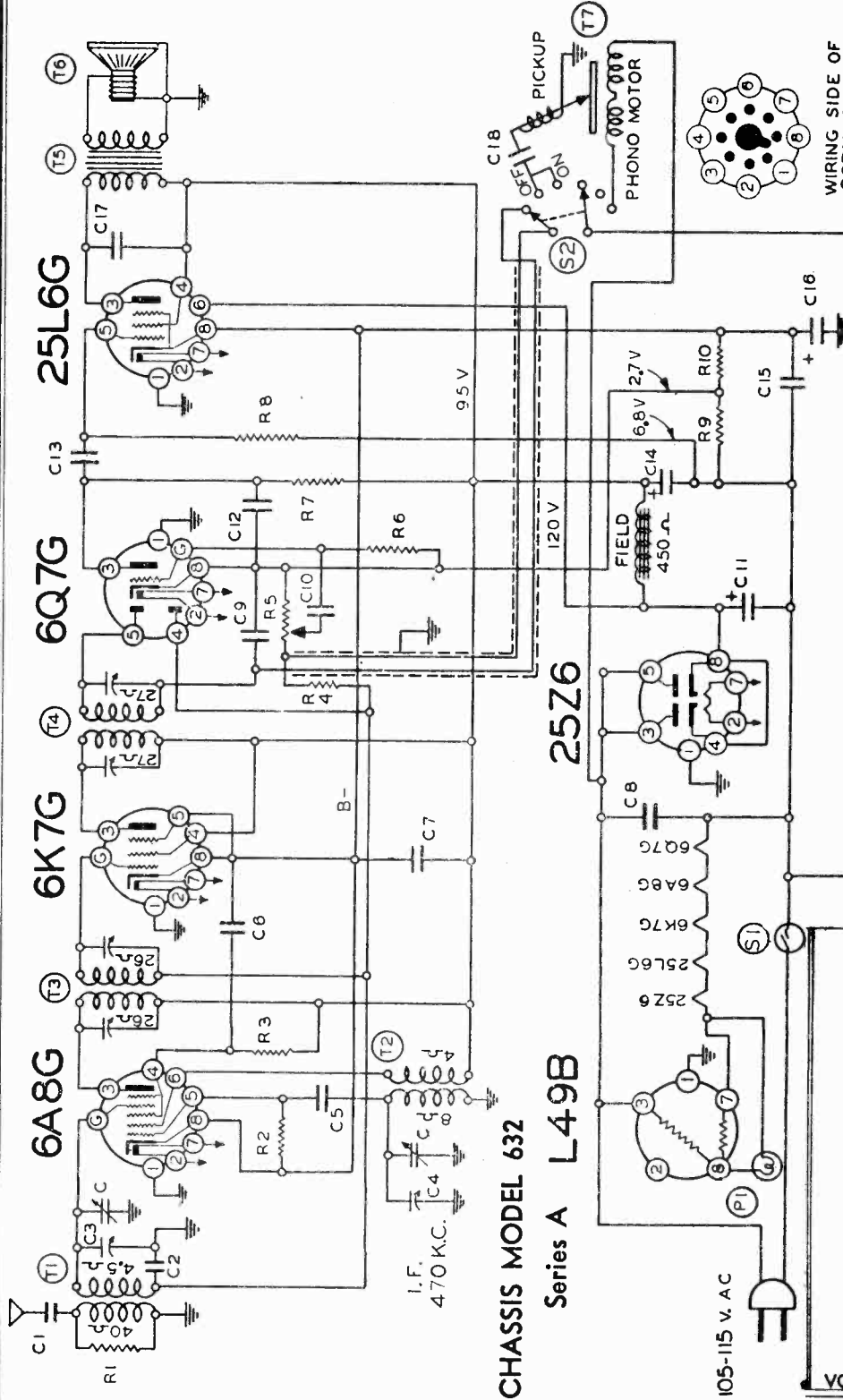
Adjust by moving for minimum output. (See note "C")

BELMONT RADIO CORP.

MODEL 632 Series A
Schematic, Voltage
Parts

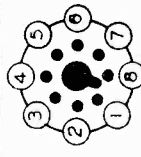
Power Consumption.....55 Watts
Power Output.....1.25 Watts Undistorted, 2.25 Watts Maximum
Intermediate Frequency.....470 K.C.

FREQUENCY RANGE
530 to 1720 K.C.
530 to 1720 K.C.



CHASSIS MODEL 632
Series A L49B

WIRING SIDE OF
OCTAL TUBE
SOCKET SHOWING
LOCATION OF PINS



Part No.	Description
R1	20M ohms—1/2 w.
R2	50M ohms—1/2 w.
R3	15M ohms—1/2 w.
R4	15M ohms—1/2 w.
R5	1 megohm—1/2 w.
R6	1 megohm volume control
R7	150M ohms—1/2 w.
R8	150M ohms—1/2 w.
R9	250M ohms—1/2 w.
R10	75 ohms—1/2 w.
C1	2 gang variable condenser
C2	.0005 mf. Mica
C3	.02 x .00 v.
C4	Ant. Trimmer Condenser
C5	.00025 Mica
C6	.05 x 200 v.
C7	.05 x 200 v.
C8	1001
C9	1295
C10	10011
C11	11962B
C12	12912
C13	10011
C14	11962B
C15	11962B
C16	10091
C17	10067
C18	10026
T1	11192B
T2	Oscillator Coil complete
T3	10817
T4	Input I.F.—470 kc. complete
T5	10895D
T6	10860
T7	Output I.F.—470 kc. complete
T8	5" Dynamic Speaker
T9	114116C
T10	10438
S1	Phono Motor
S2	Off-On Switch on Volume Control
P1	Phono. Radio Switch
P2	T4 Pilot Light

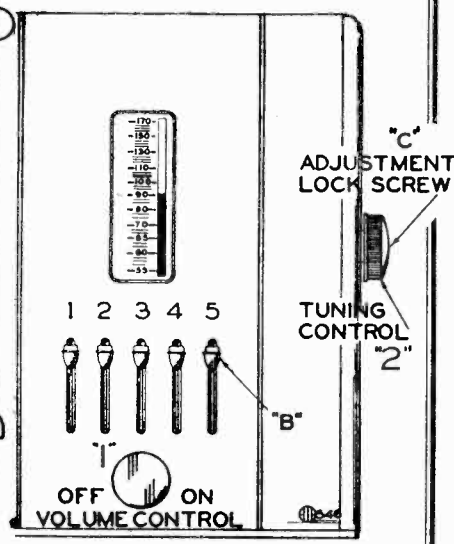


FIG. 2—FRONT VIEW

MODEL 632 Series A
Socket, Trimmers
Alignment, Notes

BELMONT RADIO CORP.

DESCRIPTION

TUBES:
DESCRIPTION:

The tube complement of this chassis consists of the following octal base glass tubes which are interchangeable with metal tubes.

The type and function of each tube is as follows:

- 1—Type 6A8G Pentagrid Mixer, First Detector-oscillator.
- 1—Type 6K7G Remote Cut-Off Pentode, I.F. Amplifier (470 K.C.).
- 1—Type 6Q7G Duplex-Diode Triode Second Detector, A.V.C. and First Audio.
- 1—Type 25L6G Beam Output Amplifier
- 1—Type 25Z6G High Vacuum Rectifier.
- 1—Type L49B Ballast Tube.

SERVICE NOTES:

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

All voltages are to be measured with 115 volts A.C. input to receiver.

Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagram.

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

Failure to operate, noisy or weak reception is usually due to defective tubes, the tubes making poor contact with sockets or grid clips making poor contact with the caps of the tubes. Tubes may be checked very easily by replacing with other tubes which are known to be good.

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

ALIGNING INSTRUCTIONS:

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

TO REMOVE CHASSIS FROM THE CABINET:

Remove the four bolts which are used to fasten the chassis to the cabinet shelf; pull the knobs off their shafts and pull off the five buttons on the automatic levers.

- Volume control—Maximum all adjustments.
- Connect B - of radio chassis to ground post of signal generator through .1 Mfd. condenser.
- 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.
- Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.
- Repeat the procedure as a final check.

The following equipment is required for aligning:

- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
- Output indicating meter.
- Non-metallic screwdriver.
- Dummy antennas—.1 mf., 100 mmf.

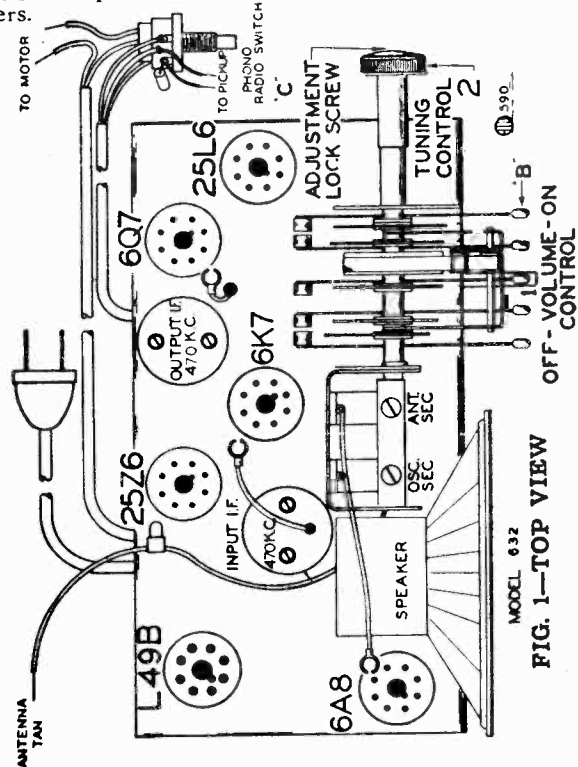
ALIGNMENT
PROCEDURE

CHASSIS MODEL 632

Series A

SIGNAL GENERATOR

BAND	Frequency Setting	Dummy Antenna	Connect to Radio	Variable Condenser Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	470 Kc.	.1 MFD.	Grid of 6K7G	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Output I.F.	Adjust to maximum output
	470 Kc.	.1 MFD.	Grid of 6A8G	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Input I.F.	Adjust to maximum output
BROAD CAST BAND	1720 Kc.	100 mmf.	Antenna Lead	Rotor full open (Plates out of mesh)	Trimmer—Top of rear section of gang (See Fig. 1)	Broadcast Oscillator	Adjust to maximum output
	1400 Kc.	100 mmf.	Antenna Lead	Set dial at 1400 Kc.	Trimmer—Top of front section of gang (See Fig. 1)	Broadcast Antenna	Adjust to maximum output



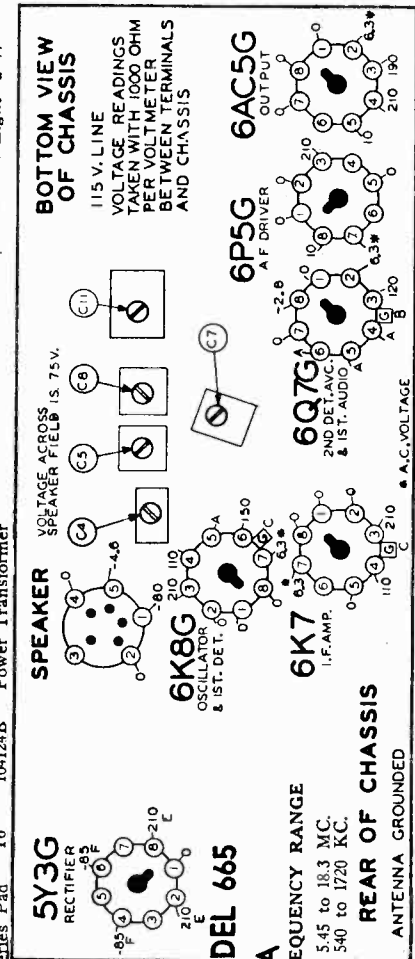
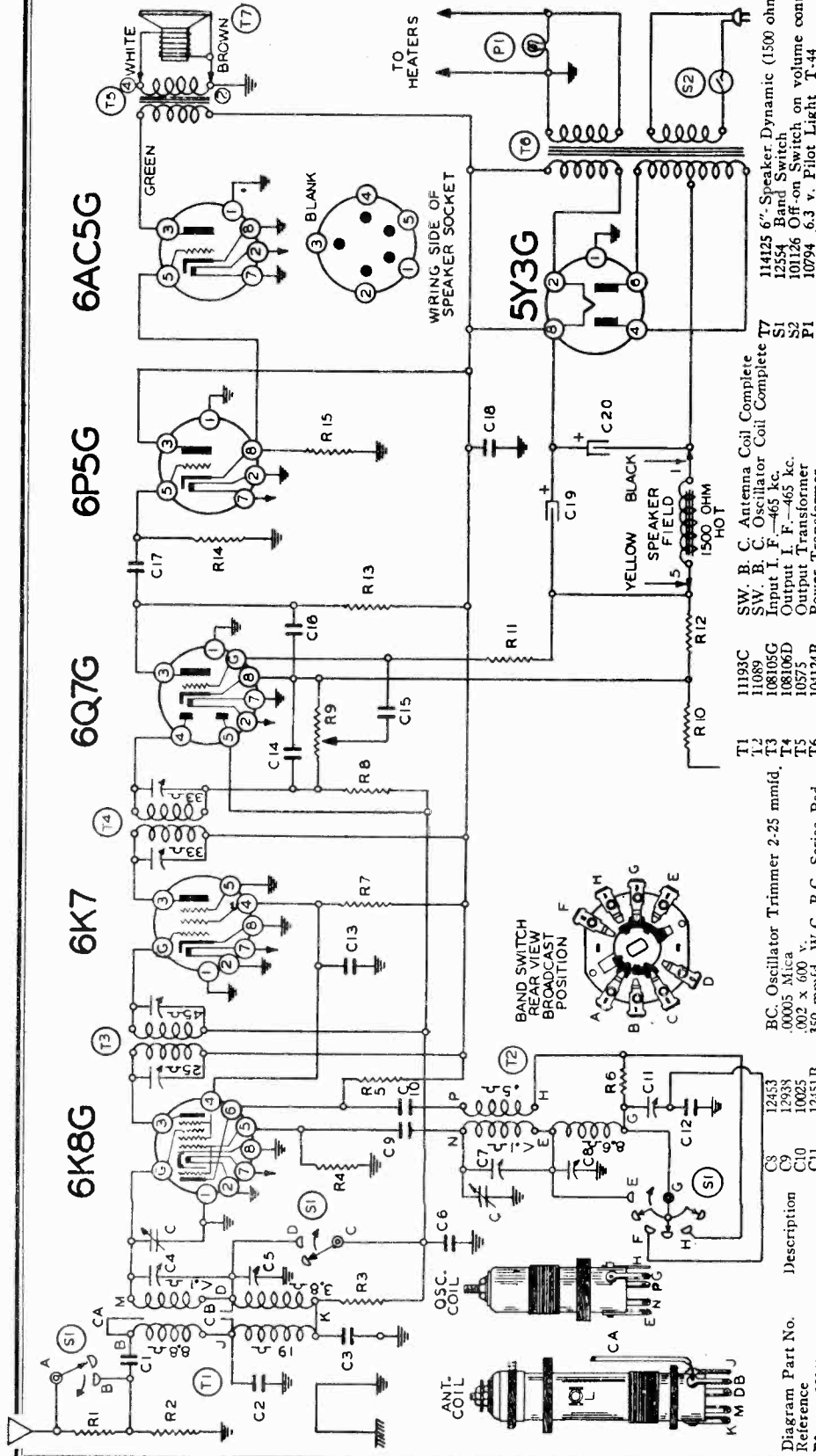
MODEL 632
FIG. 1—TOP VIEW

BELMONT RADIO CORP.

MODEL 665 Series A
Schematic, Voltage
Parts Trimmers

Power Consumption 55 Watts (at 115 Volts 60 Cycles)
Power Output 1.5 Watts Undistorted, 3.2 Watts Maximum
Intermediate Frequency 465 KC.

A - CANNOT BE MEASURED WITH
VOLT METER
B - BIAS OFF
C - 1.0 V. LINE
D - 2.0 V. LINE
E - 3.0 V. LINE
F - 4.0 V. LINE
G - 5.0 V. LINE
H - 6.0 V. LINE
I - 7.0 V. LINE
J - 8.0 V. LINE
K - 9.0 V. LINE
L - 10.0 V. LINE
M - 11.0 V. LINE
N - 12.0 V. LINE
O - 13.0 V. LINE
P - 14.0 V. LINE
Q - 15.0 V. LINE
R - 16.0 V. LINE
S - 17.0 V. LINE
T - 18.0 V. LINE
U - 19.0 V. LINE
V - 20.0 V. LINE
W - 21.0 V. LINE
X - 22.0 V. LINE
Y - 23.0 V. LINE
Z - 24.0 V. LINE
AA - 25.0 V. LINE
AB - 26.0 V. LINE
AC - 27.0 V. LINE
AD - 28.0 V. LINE
AE - 29.0 V. LINE
AF - 30.0 V. LINE
AG - 31.0 V. LINE
AH - 32.0 V. LINE
AI - 33.0 V. LINE
AJ - 34.0 V. LINE
AK - 35.0 V. LINE
AL - 36.0 V. LINE
AM - 37.0 V. LINE
AN - 38.0 V. LINE
AO - 39.0 V. LINE
AP - 40.0 V. LINE
AQ - 41.0 V. LINE
AR - 42.0 V. LINE
AS - 43.0 V. LINE
AT - 44.0 V. LINE
AU - 45.0 V. LINE
AV - 46.0 V. LINE
AW - 47.0 V. LINE
AX - 48.0 V. LINE
AY - 49.0 V. LINE
AZ - 50.0 V. LINE
BA - 51.0 V. LINE
BB - 52.0 V. LINE
BC - 53.0 V. LINE
BD - 54.0 V. LINE
BE - 55.0 V. LINE
BF - 56.0 V. LINE
BG - 57.0 V. LINE
BH - 58.0 V. LINE
BI - 59.0 V. LINE
BJ - 60.0 V. LINE
BK - 61.0 V. LINE
BL - 62.0 V. LINE
BM - 63.0 V. LINE
BN - 64.0 V. LINE
BO - 65.0 V. LINE
BP - 66.0 V. LINE
BQ - 67.0 V. LINE
BR - 68.0 V. LINE
BS - 69.0 V. LINE
BT - 70.0 V. LINE
BU - 71.0 V. LINE
BV - 72.0 V. LINE
BW - 73.0 V. LINE
BX - 74.0 V. LINE
BY - 75.0 V. LINE
C - 1.0 V. LINE
D - 2.0 V. LINE
E - 3.0 V. LINE
F - 4.0 V. LINE
G - 5.0 V. LINE
H - 6.0 V. LINE
I - 7.0 V. LINE
J - 8.0 V. LINE
K - 9.0 V. LINE
L - 10.0 V. LINE
M - 11.0 V. LINE
N - 12.0 V. LINE
O - 13.0 V. LINE
P - 14.0 V. LINE
Q - 15.0 V. LINE
R - 16.0 V. LINE
S - 17.0 V. LINE
T - 18.0 V. LINE
U - 19.0 V. LINE
V - 20.0 V. LINE
W - 21.0 V. LINE
X - 22.0 V. LINE
Y - 23.0 V. LINE
Z - 24.0 V. LINE
AA - 25.0 V. LINE
AB - 26.0 V. LINE
AC - 27.0 V. LINE
AD - 28.0 V. LINE
AE - 29.0 V. LINE
AF - 30.0 V. LINE
AG - 31.0 V. LINE
AH - 32.0 V. LINE
AI - 33.0 V. LINE
AJ - 34.0 V. LINE
AK - 35.0 V. LINE
AL - 36.0 V. LINE
AM - 37.0 V. LINE
AN - 38.0 V. LINE
AO - 39.0 V. LINE
AP - 40.0 V. LINE
AQ - 41.0 V. LINE
AR - 42.0 V. LINE
AS - 43.0 V. LINE
AT - 44.0 V. LINE
AU - 45.0 V. LINE
AV - 46.0 V. LINE
AW - 47.0 V. LINE
AX - 48.0 V. LINE
AY - 49.0 V. LINE
AZ - 50.0 V. LINE
BA - 51.0 V. LINE
BB - 52.0 V. LINE
BC - 53.0 V. LINE
BD - 54.0 V. LINE
BE - 55.0 V. LINE
BF - 56.0 V. LINE
BG - 57.0 V. LINE
BH - 58.0 V. LINE
BI - 59.0 V. LINE
BJ - 60.0 V. LINE
BK - 61.0 V. LINE
BL - 62.0 V. LINE
BM - 63.0 V. LINE
BN - 64.0 V. LINE
BO - 65.0 V. LINE
BP - 66.0 V. LINE
BQ - 67.0 V. LINE
BR - 68.0 V. LINE
BS - 69.0 V. LINE
BT - 70.0 V. LINE
BU - 71.0 V. LINE
BV - 72.0 V. LINE
BW - 73.0 V. LINE
BX - 74.0 V. LINE
BY - 75.0 V. LINE



CHASSIS MODEL 665
Series A

FREQUENCY RANGE
5.45 to 18.3 MC.
540 to 1720 KC.

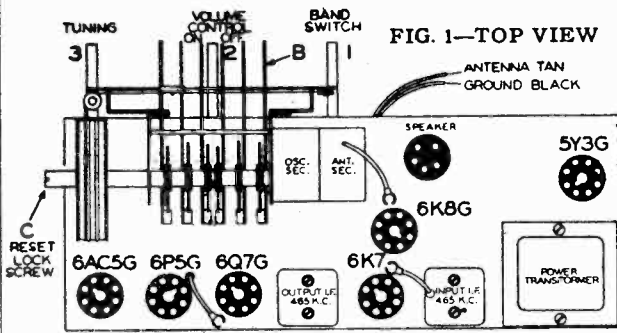
BAND SWITCH
Extreme Right Rotation
Extreme Left Rotation

REAR OF CHASSIS
ANTENNA GROUNDED

Diagram Part No.	Description
R1	800 ohm-1/2 w.
R2	100M ohm-1/2 w.
R3	100M ohm-1/2 w.
R4	50M ohm-1/2 w.
R5	10M ohm-1/2 w.
R6	10M ohm-1/2 w.
R7	1500 ohm-1/2 w.
R8	20M ohm-1/2 w.
R9	3 megohm-1/2 w.
R10	1 megohm control
R11	60 ohm-1/2 w.
R12	3 megohm-1/2 w.
R13	400 ohm-1/2 w.
R14	1 megohm-1/2 w.
R15	25M ohm-1/2 w.
CA	Adjustable Capacitor
CB	Adjustable Capacitor
C1	2 gang variable condenser
C2	.000105 Mica
C3	.0009 Mica
C4	.003 x 600 v.
C5	SW. Antenna Trimmer 2-25 mmfd.
C6	BC. Antenna Trimmer 1-10 mmfd.
C7	.05 x 400 v.
C8	SW. Oscillator Trimmer 2-25 mmfd.
C9	12453
C10	12938
C11	12451B
C12	129112
C13	10053
C14	12939
C15	10011
C16	1292
C17	10011
C18	10013
C19	11963B
C20	11963B
C5 and C8	in same unit.
C8 and C19	in same unit.
T1	1193C
T2	BC. Oscillator Trimmer 2-25 mmfd.
T3	.0005 Mica
T4	SW. B. C. Antenna Coil Complete
T5	108106D
T6	10575
T7	114125 6" Speaker Dynamic (1500 ohm field)
S1	12554 Band Switch
S2	101126 Off-on Switch on volume control
P1	10794 .63 v. Pilot Light T-44

MODEL 665 Series A
Alignment, Tuner
Trimmers, Notes

BELMONT RADIO CORP.



See also ALIGNMENT PROCEDURE
Model 611 Series A.

BAND	Frequency Setting	SIGNAL GENERATOR Dummy Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	465 Kc.	.1 MFD. Grid of 6K7	Broadcast (Extreme left rotation)	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD. Grid of 6K8	Broadcast (Extreme left rotation)	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Input I. F.	Adjust to maximum output
SHORT WAVE BAND	17 Mc.	400 ohms Antenna lead	Short wave (Extreme right rotation)	Set dial at 17 MC	Trimmer (C7) (See Fig. 3)	Short wave Oscillator	Adjust to maximum output
	17 Mc.	400 ohms Antenna lead	Short wave (Extreme right rotation)	Dial set at 17 MC	Trimmer (C4) (See Fig. 3)	Short wave Antenna	Adjust to maximum output
BROAD-CAST BAND	1720 Kc.	200 mmf. Antenna lead	Broadcast (Extreme left rotation)	Rotor full open (Plates out of mesh)	Trimmer (C8) (See Fig. 3)	Broadcast Oscillator	Adjust to maximum output
	1400 Kc.	200 mmf. Antenna lead	Broadcast (Extreme left rotation)	Set dial at 1400 Kc.	Trimmer (C5) (See Fig. 3)	Broadcast Antenna	Adjust to maximum output
	600 Kc.	200 mmf. Antenna lead	Broadcast (Extreme left rotation)	Set dial at 600 Kc.	Trimmer (C11) (See Fig. 3)	Broadcast oscillator series pad	Adjust to maximum rock dial. (See note "A.")
IMAGE REJECTION ADJUSTMENTS	2100 Kc.	200 mmf. Antenna lead	Broadcast (Extreme left rotation)	Pick up signal at 1170 Kc. on dial	Wire capacitor (CB) (See circuit diagram)	Image rejection	Adjust by twisting for minimum output. (See note "B.")
	2630 Kc.	200 mmf. Antenna lead	Broadcast (Extreme left rotation)	Pick up signal at 1700 Kc. on dial	Wire capacitor (CA) (See circuit diagram)	Image rejection	Adjust by moving for minimum output. (See note "C.")

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

NOTE "B": 2100Kc is the image frequency of 1170 Kc. Adjust wire capacity (CB) by twisting the wire until a minimum output is obtained.

NOTE "C": 2630Kc. is the image frequency of 1700Kc. Adjust wire capacity (CA) by moving the wire either toward or away from the antenna coil winding until a minimum output is obtained on the output meter.

SEE NOTES MARKED •, ALIGNMENT OF MODEL 611 SERIES A.

loose when radio is shipped from factory).

If you should desire to change any station you selected to another, loosen the reset locking screw "C", four or five complete turns; select the new station, as explained. (Note: If the dial mechanism works hard when setting up a new station for one of the automatic tuner levers, it is due to the locking screw being too tight. Loosen the reset locking screw "C", until the dial mechanism works freely with the tuner lever pressed down).

BE SURE TO RETIGHTEN THE RESET LOCK SCREW, otherwise the stations will not stay adjusted to the levers.

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

TUBES:

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

The type and function of each tube is as follows:

- 1—Type 6K8 Triode Hexode, First Detector-oscillator.
- 1—Type 6A5C5G Remote Cut-Off Pentode, I. F. Amplifier (465 K. C.)
- 1—Type 6Q7G Duplex Diode Triode Second Detector, A. V. C. and First Audio.
- 1—Type 6P5G Driver Stage.
- 1—Type 6AC5G Positive Grid Triode Output Amplifier.
- 1—Type 5Y3G High Vacuum Rectifier.

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

PROCEDURE FOR SETTING THE AUTOMATIC TUNER LEVERS:

There are six levers on the dial by means of which six stations may be selected. (See "B", Fig. 2).

Make up a list of local stations you tune in regularly; any number up to and including 6.

Punch out from the set of station call letter tabs supplied, the call letters of the stations you have selected.

Above each automatic tuner lever an opening in the escutcheon is provided for inserting the call letter tabs. (See "A" Fig. 2). Any order of grouping can be used, either by arranging the call letters alphabetically or grouping them to correspond with the calibration on the dial scale, namely starting with the lowest frequency station on the right and so on up in frequency to the highest frequency station on the left.

Insert the call letter tabs in the rectangular openings in the escutcheon above each of the automatic tuner levers. One of the small celluloid tabs supplied should be snapped into place over each of the station call letter tabs.

Press DOWN ALL THE WAY any one of the automatic tuner levers. Holding it down FIRMLY, tune in by means of the tuning knob (No. 3) the station indicated on the station call letter tab above this lever. Turn the tuning knob very slowly back and forth (while still holding lever in downward position) until the signal is clearest. The station will then be accurately tuned in. Release the lever.

Press down another automatic tuner lever. Holding it down FIRMLY, carefully tune in the station indicated on the call letter tab above this lever. Release this lever.

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

Rotate the tuning knob (No. 3) to the right (clockwise) as far as it will turn. Now remove from the right side of the cabinet the metal button, and with a screw driver inserted through the hole, tighten the reset locking adjustment screw "C" (See Fig. 1). It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT.

This screw will lock in place all the stations you have selected on the levers. (Note: Reset Lock Screw "C", is

FIG. 1—TOP VIEW

ANTENNA TAN GROUND BLACK

RESET LOCK SCREW

6A5C5G 6P5G 6Q7G 6K7 5Y3G 6K8G

OUTPUT I.F. 465 K.C. INPUT I.F. 465 K.C.

POWER TRANSFORMER

TUNING

VOLUME CONTROL

BAND SWITCH

FIG. 1—TOP VIEW

SERVICE NOTES:

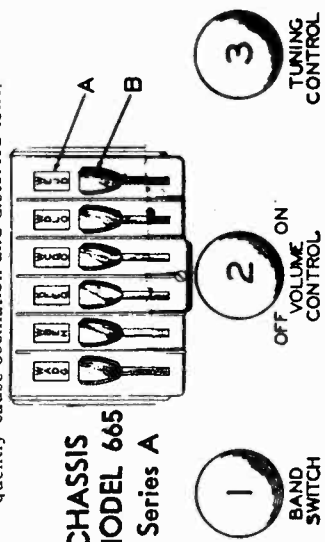
Voltage taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a voltmeter having a resistance of 1000 ohms per volt.

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

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

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

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



CHASSIS
MODEL 665
Series A



1—Type 6K8 Triode Hexode, First Detector-oscillator.

1—Type 6A5C5G Remote Cut-Off Pentode, I. F. Amplifier (465 K. C.)

1—Type 6Q7G Duplex Diode Triode Second Detector, A. V. C. and First Audio.

1—Type 6P5G Driver Stage.

1—Type 6AC5G Positive Grid Triode Output Amplifier.

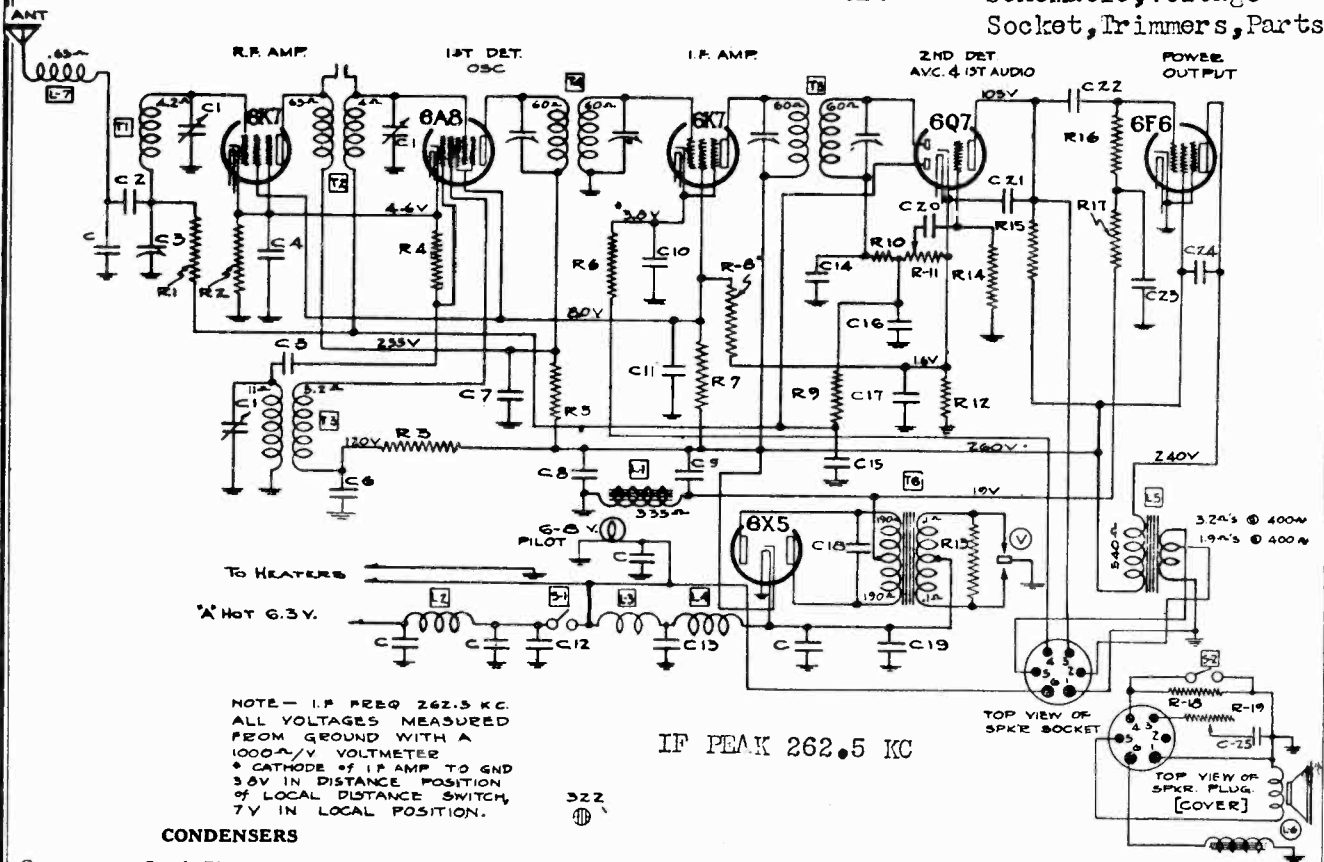
1—Type 5Y3G High Vacuum Rectifier.

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

BELMONT RADIO CORP.

MODEL 667

Schematic, Voltage Socket, Trimmers, Parts



CONDENSERS

C	Spark Plate
C1	102-45 3 Gang Condenser
C2	129-73 .002 Mica - MW-W - 10%
C3	124-36 Series Pad
C4	116-20 .1 x 200 v. - 20%
C5	129-12 .00025 Mica - MT - 20%
C6	116-19 .1 x 400 - 20%
C7	116-19 .1 x 400 - 20%
C8	119-34 8. mfd. - 350 W v.
C9	119-34 4 mfd. 350 W v.
C10	116-19 .05 x 200 v. - 20%
C11	116-20 .25 x 200 v. - 20%
C12	100-31 .5 x 120 v. - 10-50% - Braid leads
C13	100-31 .5 x 120 v. - 10-50%
C14	129-5 .0001 Ceramicon - 20%
C15	116-19 .05 x 200 v. - 20%
C16	129-5 .0001 Ceramicon - 20%
C17	116-20 .02 x 200 - 20%
C18	100-36 .01 x 1400 v. - 20% - 10% "A"
C19	100-31 .5 x 120 v. - 10% - 50%
C20	116-20 .02 x 200 - 20%
C21	129-5 .0001 Ceramicon - 20%
C22	100-55 .01 x 400 - 25%
C23	100-48 .25 x 200 - 20%
C24	100-54 .006 x 600 - 25%
C25	100-11 .01 x 400 - 25%

C4, C11, C17, C20 All in Block 116-20
C7, C6, C10, C15 All in Block 116-19

RESISTORS

R1	130-141	250M ohm - 1/3 w. Insulated
R2	130-54	500 ohm - 1/3 w.
R3	130-138	50M ohm - 1/2 w. Insulated
R4	130-52	50M ohm - 1/3 w.
R5	130-137	1500 ohm - 1/3 w. Insulated
R6	130-154	1000 ohm - 1/3 w. Insulated
R7	130-143	30M ohm - 1.2 w.
R8	130-139	40M ohm - 1/3 w. Insulated
R9	130-19	1 meg - 1/3 w.
R10	130-162	50M ohm - 1/3 w. Insulated
R11	101-73	250M ohm - Volume Control
R12	130-153	700 ohm - 1/3 w.
R13	130-84	200 ohm - 1/3 w.

R14	130-19	1 meg ohm - 1/3 w.
R15	130-11	250M ohm - 1/3 w.
R16	130-5	300M ohm - 1/3 w.
R17	130-11	250M ohm - 1/3 w.
R18	130-161	4000 ohm - 1/3 w. Insulated
R19	101-45	Tone Control 1 Meg ohm.

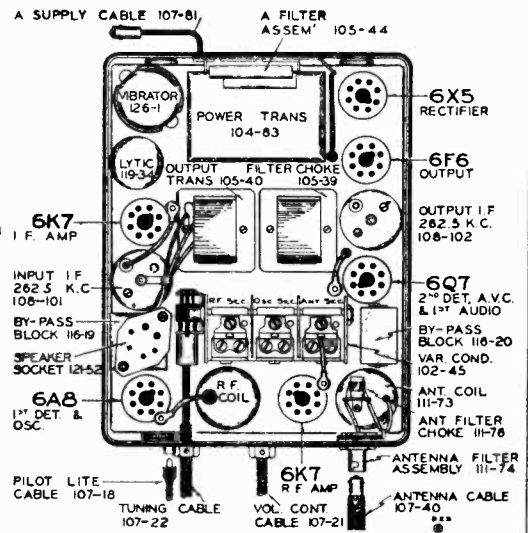
PARTS

L7	111-76	Antenna Filter Choke Assem
T1	111-73	Antenna Coil Complete
T2	109-36	R.F. Coil Complete
T3	110-59	Oscillator Coil Complete
T4	108-101	I.F. Input
T5	108-102	I.F. Output
T6	104-83	Power Transformer
L1	105-39	Filter Choke (335 ohms)
L2	105-26	"A" Choke
L3	105-24	"A" Choke
L4	105-19	"A" Choke
L5	105-40	Output transformer
L6	114-62	Speaker. Dynamic
S1		Switch on Volume Control
S2	125-28	Sensitivity switch.

CONNECTIONS TO BATTERY

The battery cable, number 107-82, (red wire with fuse receptacle at one end and terminal lug at other end) must be connected to battery terminal of ammeter. At the same time connect ammeter capacitor, number 148-3, to battery terminal of ammeter, other end of condenser to any convenient grounded screw on back of instrument panel. Make certain that insulating sleeve is slipped over fuse when fuse is placed in receptacle, before connecting to short battery cable from receiver.

When connected properly, the discharge due to current drawn by the receiver should not indicate on the ammeter. This is important, since if improperly connected, as shown by the deflection of ammeter, additional motor interference may be encountered.



MODEL 667

Alignment, Data
Wiring Data, Notes

BELMONT RADIO CORP.

SERVICE NOTES

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

In order to prevent signal from acting upon A.V.C. and affecting accuracy of voltage measurements, aerial and ground leads should be short circuited while making measurements.

All voltages are to be measured with 6.3 volts input to receiver. Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagram.

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

DESCRIPTION

Model No. 667 is a six-tube superheterodyne receiver having a tuning range of 530 K.C. to 1550 K.C., operates from a 6.0 volt storage battery and uses the automotive type 6.3 volt tubes. The "B" supply is obtained from a vibrator with a tube rectifier.

The I.F. frequency used is 262.5 K.C., the R.F. end of the receiver consisting of a high gain iron core antenna coil which gives high signal to noise ratio and an R.F. stage especially designed to give high image rejection and high I.F. attenuation. The I.F. transformers are designed to give high gain and selectivity and yet to have a broad nose for ease of tuning and hi-fidelity response. They are of the air core type and wound with solid wire to give minimum drift and variation of gain due to climatic changes.

This receiver has been carefully designed to facilitate servicing, the top and bottom covers are both removable and are fastened in place by spring clips, self tapping screws and trimount buttons.

DUMMY ANTENNAS

The dummy antennas referred to in the following instructions are:

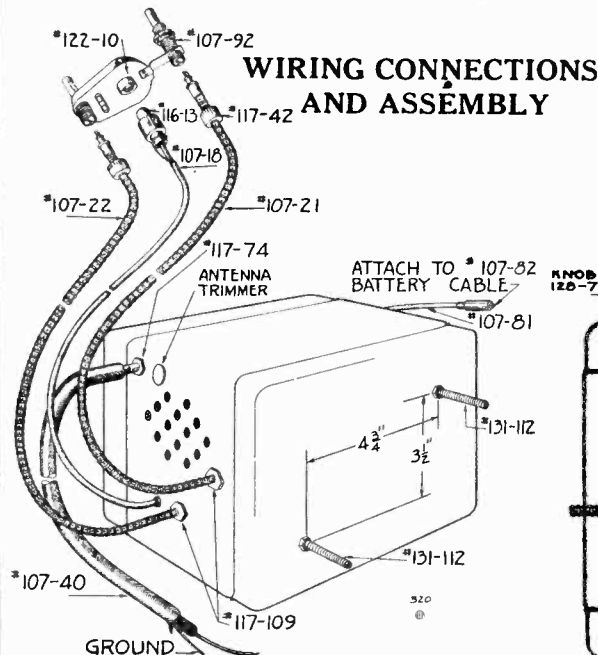
- "I.F. Dummy" —A .5 mfd. condenser connected in series with the test oscillator output lead.
- "Broadcast Dummy"—A 175 mmfd. condenser connected in series with the output lead of the test oscillator.

CITY-COUNTRY SWITCH

This switch is located on the chassis cover.

City—While driving in the city or close to broadcasting stations, it is best to turn the knob to the "city" position for least noise.

Country—When driving in the country, or when listening to distant stations, best results are obtained with the knob turned to the "country" position. In this position the sensitivity is at a maximum.



RESONANCE INDICATOR

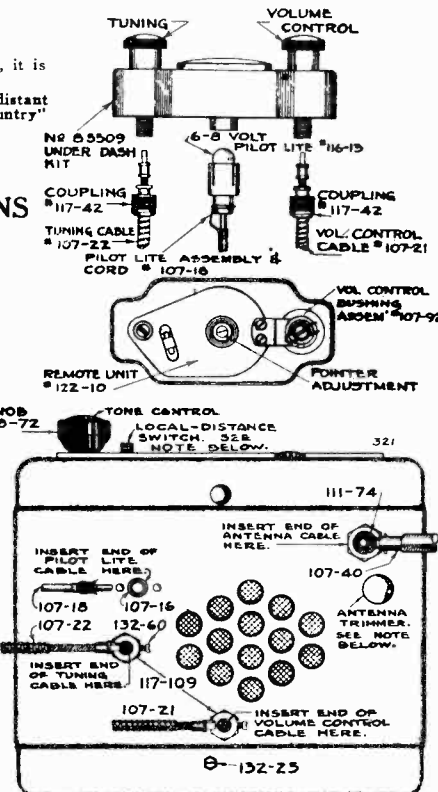
Use as a resonance indicator an output meter connected across the primary of the speaker input transformer, or by means of an adapter between the plate and screen terminals of the type 6F6 output tube. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range meter should be used.

I.F. ALIGNMENT: (262.5 K.C.)

1. With variable condenser in its minimum capacity position (plates entirely out of mesh) and with volume control full on, connect test oscillator set at 262.5 K.C. in series with I.F. dummy antenna, to grid of 6K7 I.F. tube.
2. Adjust trimmer condensers of output I.F. transformer No. 108-102 to resonance with oscillator.
3. Move test oscillator connection to grid of 6A8 tube and adjust trimmer condensers of input I.F. transformer No. 108-101 to resonance with oscillator. See top view for location of these transformers. There are two adjustments on each and they are accessible from the top of the transformer shield and should be adjusted with an insulated screw driver.

BROADCAST ALIGNMENT

1. With variable condenser in its minimum capacity position, connect test oscillator set at 1550 K.C. in series with broadcast dummy, to the antenna lead of receiver.
2. Adjust oscillator trimmer of variable condenser to resonance. (This adjustment is on the middle section of the three-gang condenser—see top view, Fig. 2).
3. Shift test oscillator to 1400 K.C. and pick up signal by rotating condenser and adjust R.F. and antenna trimmers to resonance (see top view, Fig. 2).
4. Re-set test oscillator to 600 K.C. and rotate variable condenser to 600 K.C. Adjust series pad in the antenna circuit, rocking gang condenser to and fro at the same time adjusting series pad for maximum gain. This pad is mounted on the side of the antenna can.
5. Go back and check 1400 K.C. If adjustment is made here, check 600 K.C. again.
6. Check for sensitivity at 1000 K.C. by setting test oscillator to this frequency and picking up the signal by rotating variable condenser. Under no circumstances bend plates of variable condenser sections to correct tracking.



ADJUSTING ANTENNA TRIMMER

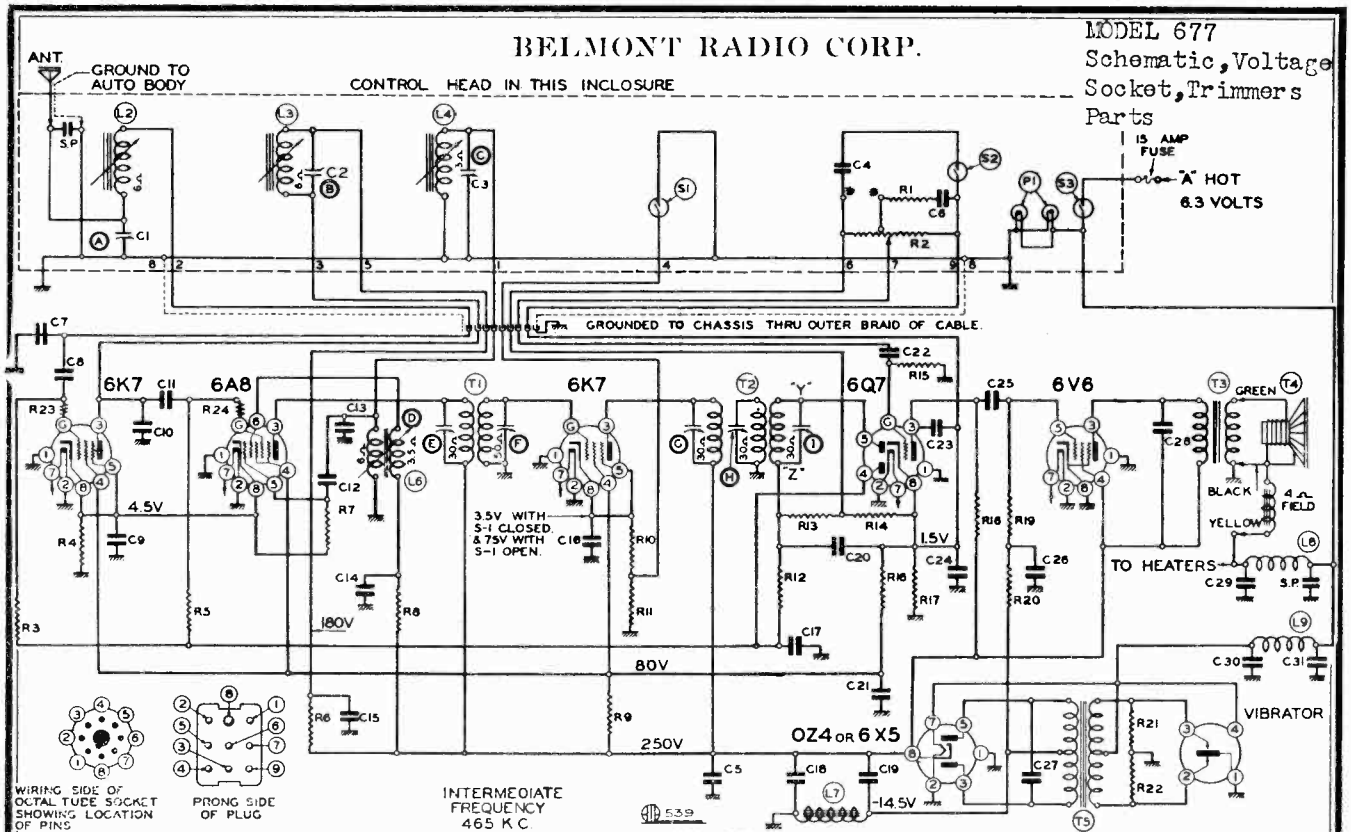
Tune in a weak signal at approximately 600 KC with the volume control about three-fourths on. Turn the adjusting screw of the antenna trimmer up or down until maximum output is obtained. See Fig. 1 for location of this trimmer.

DIAL ADJUSTMENT

Tune set to some station of a known frequency (between 800 and 1200 K.C.), hold selector knob, then remove pilot light assembly from back of remote head and with a screw driver adjust the slotted screw through this opening and in this way adjust the dial pointer to the correct frequency setting.

BELMONT RADIO CORP.

MODEL 677
Schematic, Voltage
Socket, Trimmers
Parts



Code	Part No.	Description
C1	124-45	Antenna trimmer 50 - 450 w. c. 350 mmf.
C2	127-82	R. F. Trimmer - 5-30 mmf.
C3	127-84	Oscillator Trimmer 5 - 30 mmf.
C4	100-25	.002 x 600 v. - 25%
C5	100-88	.1 x 400 v. 50 - 10%
C6	100-19	.006 x 600 v. - 25%
C7	129-95	.00015 Mica 2 1/2%
C8	129-39	.00005 Mica 20%
C9	100-22	.05 x 200 v. 25%
C10	129-96	.00035 Mica 5%
C11	129-2	.0005 Mica 20%
C12	129-12	.00025 Mica 20%
C13	129-101	.00007 Mica 5%
C14	100-13	.05 x 400 v. 25%
C15	116-24	By pass block .25 x 400 v. 20-10%
C16	100-9	.05 x 200 v. 25%
C17	100-22	.05 x 200 v. 25%
C18	119-51	12 mfd. 350 w.v. lytic
C19	119-51	12 mfd. 350 w.v. lytic
C20	129-5	.01 x 400 v. 20%
C21	100-11	.01 x 400 v. 25%
C22	116-24	.25 x 400 v. 20-10%
C23	129-5	.0001 Mica 20%
C24	100-26	.02 x 400 v. 25%
C25	100-11	.01 x 400 v. 25%
C26	116-24	.25 x 200 v. 20-10%
C27	100-36	.01 x 1400 v. 20-10%
C28	100-89	.008 x 800 v. 10%
C29	129-6	.002 Mica 20%
C30	100-31	.5 x 120 v. 50-10%
C31	100-31	.5 x 120 v. 50-10%
SP		Spark Plates (2)

C15, C21 and C26 in same unit
C18 and C19 in same unit

Code	Part No.	Description
R1	130-214	30M - 1/2 w. 20%
R2	101-109	1.2 meg. volume control
R3	130-19	1 megohm - 1/2 w. 20%
R4	130-79	400 ohm - 1/2 w. 10%
R5	130-19	1 megohm - 1/2 w. 20%
R6	130-21	20M ohm - 1/2 w. 20%
R7	130-12	50M ohm - 1/2 w. 20%
R8	130-12	50M ohm - 1/2 w. 20%
R9	130-65	30M ohm - 1 watt 20%
R10	130-39	700 ohm - 1/2 w. 20%
R11	130-85	3M ohm - 1/2 w. 20%
R12	130-19	1 megohm - 1/2 w. 20%
R13	130-20	100M ohm - 1/2 w. 20%
R14	130-118	600M ohm - 1/2 w. 20%
R15	130-19	1 megohm - 1/2 w. 20%
R16	130-208	40M ohm - 1/2 w. 20%
R17	130-101	600 ohm - 1/2 w. 10%
R18	130-11	250M ohm - 1/2 w. 20%
R19	130-5	300M ohm - 1/2 w. 20%
R20	130-11	250M ohm - 1/2 w. 20%
R21	130-56	100 ohm - 1/2 w. 20%
R22	130-56	100 ohm - 1/2 w. 20%
R23	130-54	500 ohm - 1/2 w. 20%
R24	130-54	500 ohm - 1/2 w. 20%

Code	Part No.	Description
L2	111-100	Antenna permeability coil complete
L3	109-40	R. F. Permeability coil complete
L4	110-84	Oscillator permeability coil complete
L6	110-75	Oscillator shunt coil Adj.
L7	105-62	Filter Choke - 250 ohms
L8	105-66	"A" Choke
L9	105-65	"A" Choke

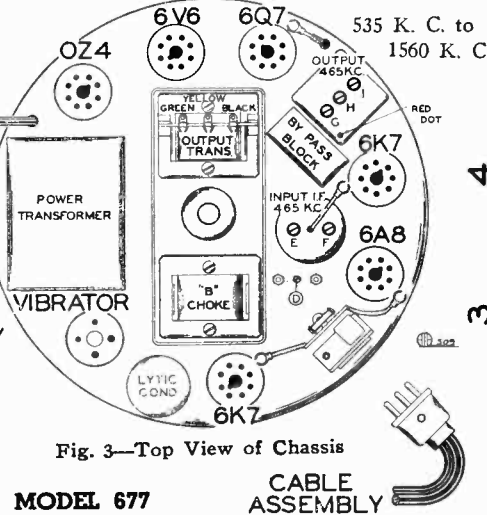


Fig. 3—Top View of Chassis

MODEL 677
AUTO RADIO

Mica condensers are coded with an additional dot indicating tolerance:
Tolerance Percent Color of Dot

2 1/2%	White
5%	Green
10%	Blue
15%	Yellow
20%	Red
More Than 20%	None.

108-96C Input I. F. Complete - 465 kc.
108-115 Output I. F. Complete - 465 kc.
105-61 8" Dynamic speaker
114-113 Power Transformer
104-132 Sensitivity switch
125-47 Tone control switch
125-47 Off on switch on volume control
107-97 6-8 v. pilot light (2)

ANT. GROUND TO AUTO BODY

ANT. GROUND TO AUTO BODY

ANT. GROUND TO AUTO BODY

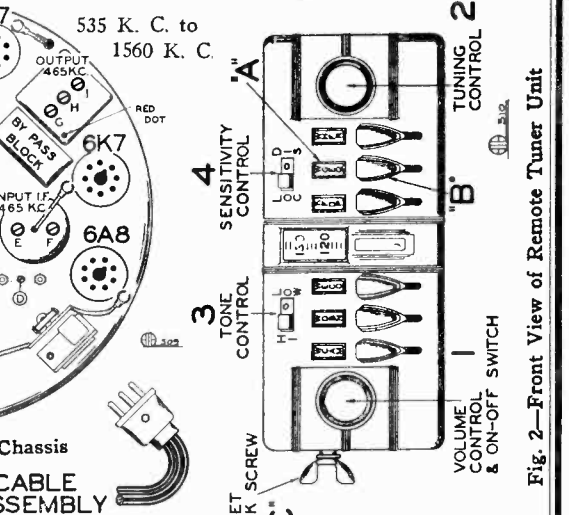


Fig. 2—Front View of Remote Tuner Unit

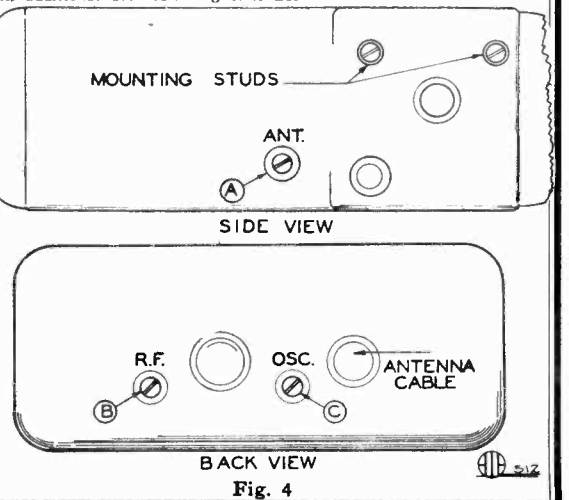


Fig. 4

MODEL 677

Installation
Alignment, Tuner

BELMONT RADIO CORP.

WIRING CONNECTIONS AND ASSEMBLY

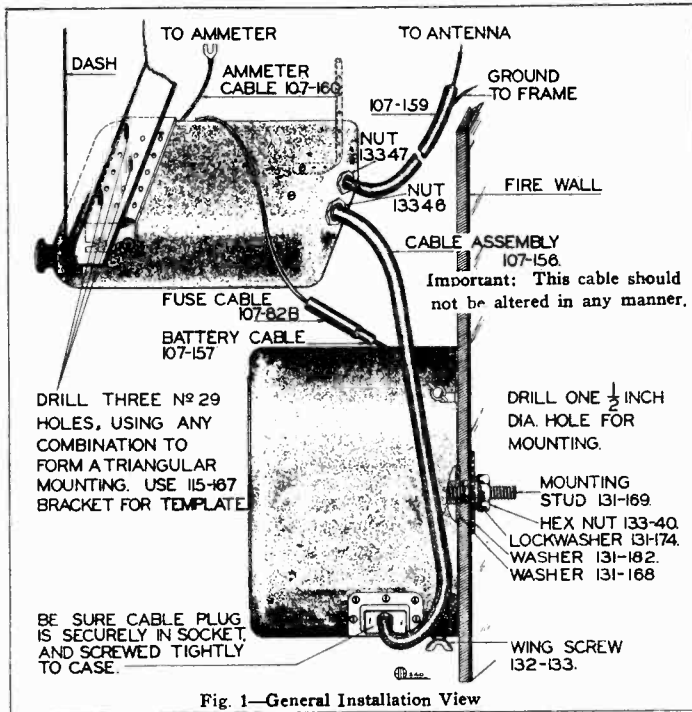


Fig. 1—General Installation View

Remote Tuner Units are matched to each radio unit at the factory; therefore it is important in such cases where another Remote Tuner Unit is required to replace the original one, that the entire Remote Unit be rebalanced to match the Radio Unit.

ADJUSTING ANTENNA TRIMMER (SET IN CAR)

Tune in a weak signal at approximately 1400 KC with the volume control about three-fourths on. Turn the adjusting screw of the antenna trimmer up or down until maximum output is obtained. See Fig. 4, adjustment "A" on side of remote tuner unit.

DUMMY ANTENNAS

The dummy antennas referred to in the following instructions are:

"I.F. Dummy" —A 5 mfd. condenser connected in series with the test oscillator output lead.

"Broadcast Dummy"—A 175 mmfd. condenser connected in series with the output lead of the test oscillator.

I.F. ALIGNMENT: (465 K.C.)

IMPORTANT:

To align the output I.F. transformer without using a cathode ray oscillograph a 10M ohm resistor must be shunted across the tertiary coil of this unit.

Connect the resistor as indicated by points "Y" and "Z" on the circuit diagram as follows.

Locate the wires coming from the bottom of the output I.F. coil assembly on the underside of the radio chassis.

The white lead with green tracer which is connected to diode plate terminal No. 5 on the 6Q7 tube socket is one point and the white lead with brown tracer which is connected to the end terminal of the terminal strip is the other point. Proceed as follows:

1. With the dial of the Remote Tuner Unit set at 1400 K.C. and with volume control full on, connect test oscillator set at 465 K.C. in series with I.F. dummy to grid of 6K7 I.F. tube.
2. Adjust trimmers "G" and "H" of output I.F. transformer for maximum gain, (See Fig. 3, top view).
3. Disconnect the 10M ohm resistor which has been shunted across the tertiary winding and adjust trimmer "I" for maximum gain.
 - (a) This transformer is now correctly tuned. Under no circumstances re-adjust trimmers "G" and "H" after the 10M ohm resistor has been removed.

MODEL 677

AUTO RADIO

(Serial No. 30,001 and up)

(Serial No. 42,000 and up)

PROCEDURE FOR SETTING THE AUTOMATIC LEVERS:

- There are six levers on the dial by means of which six stations may be selected. (See "B", Fig. 2). Press **DOWN** ALL THE WAY any one of the automatic tuner levers. Holding it down **FIRMLY**, tune in by means of the tuning knob (No. 2) the station indicated on the station call letter tab above this lever. Turn the tuning knob very slowly back and forth (while still holding lever in downward position) until the signal is clearest. The station will then be accurately tuned in. Release the lever. Press down another automatic tuner lever. Holding it down **FIRMLY**, carefully tune in the station indicated on the station call letter tab above this lever. Release this lever. Follow this procedure until you have selected all of your favorite stations.
- Now Rotate the turning knob (No. 2) to the left (counter-clockwise) as far as it will turn, and tighten the special reset lock screw ("C") located on left side of remote tuner unit. (See Fig. 2).
- (b) For alignment of the output I.F. transformer using a cathode ray oscillograph the 10M ohm resistor is not used and the procedure is similar to the alignment of any two circuit I.F. transformer; merely tune for a symmetrical curve of maximum amplitude.
 - (c) Output connections for the cathode ray oscillograph should be made to pin No. 8 on 6Q7 tube socket and to the end terminal on the terminal strip; at this point the diode load resistors terminate.

4. Move test oscillator connection to grid of 6A8 tube and adjust trimmer condensers "E" and "F" of input I.F. transformer for maximum gain.

NOTE: A red dot on top of output I.F. can designate location of trimmer "G"

BROADCAST ALIGNMENT:

1. With the dial on the Remote Tuner Unit set at 1560 K. C., connect test oscillator set at 1560 K. C. in series with broadcast dummy to the antenna lead of receiver.
2. Adjust oscillator trimmer (adjustment "C", on back of Remote Tuner Unit) to resonance. (See Fig. 4, back view).
3. Re-set test oscillator to 1400 K.C. and pick up signal by rotating dial on Remote Tuner Unit. Adjust R. F. trimmer (adjustment "B", on back of Remote Tuner Unit), and Antenna Trimmer (adjustment "A", on side of Remote Tuner Unit), to resonance.
4. Re-set test oscillator to 600 K.C. and rotate Remote Tuner Unit dial to 600 K. C. Adjust shunt oscillator adjustment "D", rotating dial to and fro at the same time adjusting shunt oscillator for maximum gain. This adjustment is accessible from the top of the radio chassis, (See Fig. 3, top view).
5. Go back and check 1400 K. C. If adjustment is made here, check 600 K. C. again.

It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT.

This screw will lock in place all the stations you have selected on the automatic tuner levers. (Note: Reset lock screw "C" is loose when radio is shipped from factory). If you should desire to change any station you selected to another, loosen the locking screw "C" one or two turns, select the station indicated on the station call letter tab above the screw, otherwise the stations you have selected will not stay adjusted to the levers.

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

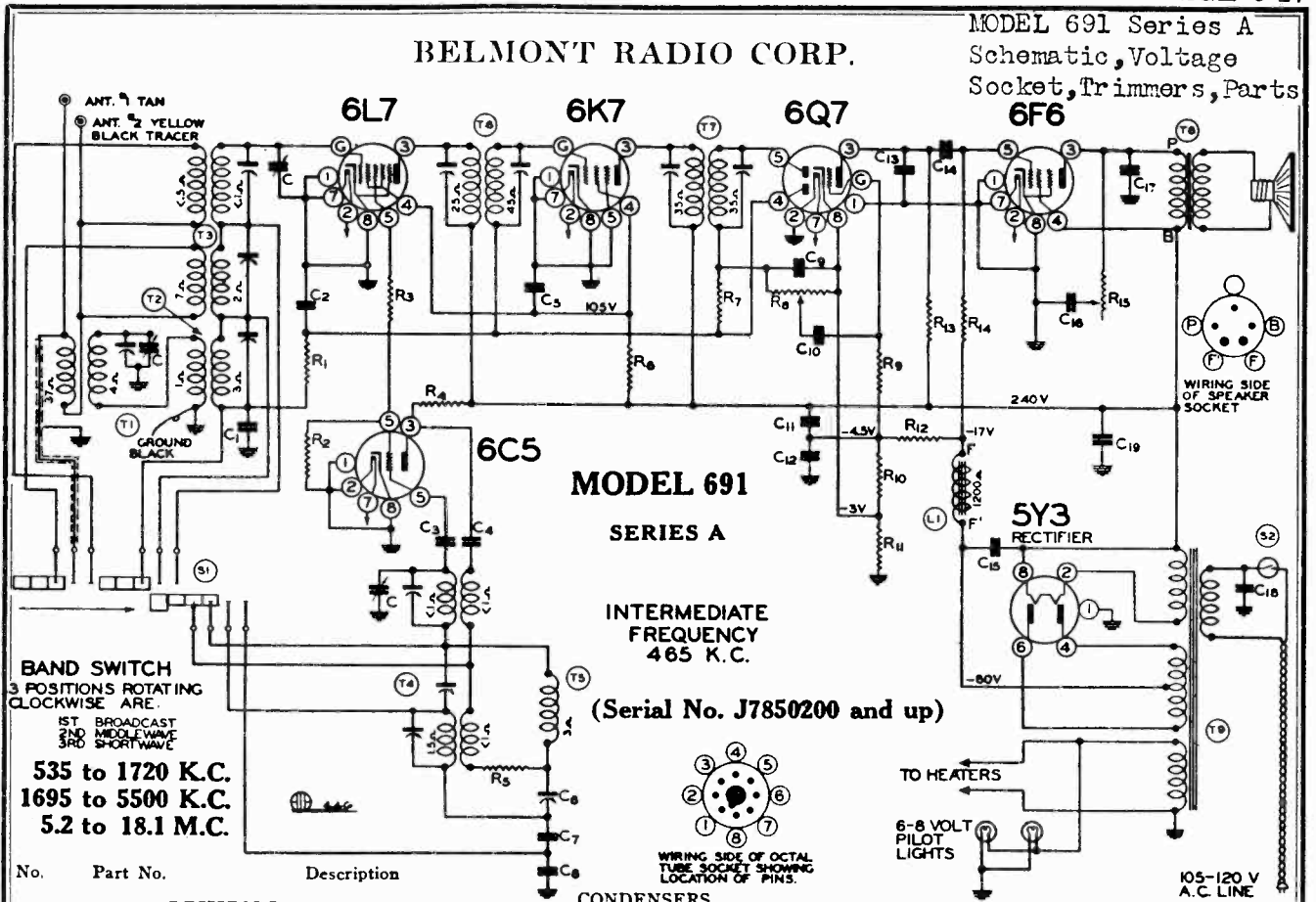
In order to prevent signal from acting upon A.V.C. and affecting accuracy of voltage measurements, aerial and ground leads should be short circuited while making measurements. All voltages are to be measured with 6.3 volts input to receiver.

These are shown on the schematic page with portions of the schematic.

Receivers bearing Serial Numbers from 30001 and up, had several Serial Numbers from 42000 and up. differences from those bearing Serial Numbers from 30001 and up, had several Serial Numbers from 42000 and up.

BELMONT RADIO CORP.

MODEL 691 Series A
Schematic, Voltage
Socket, Trimmers, Parts



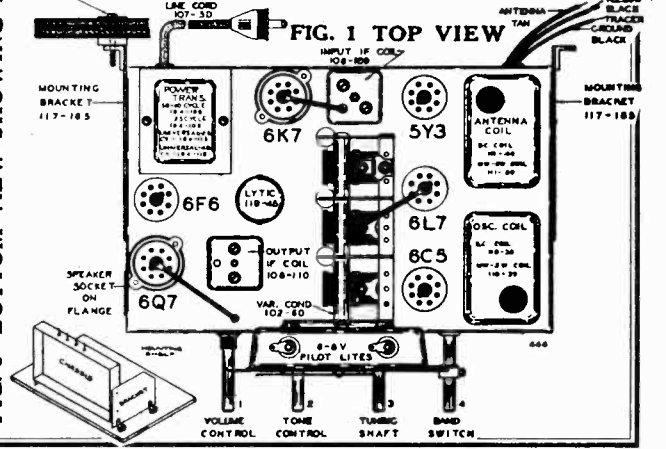
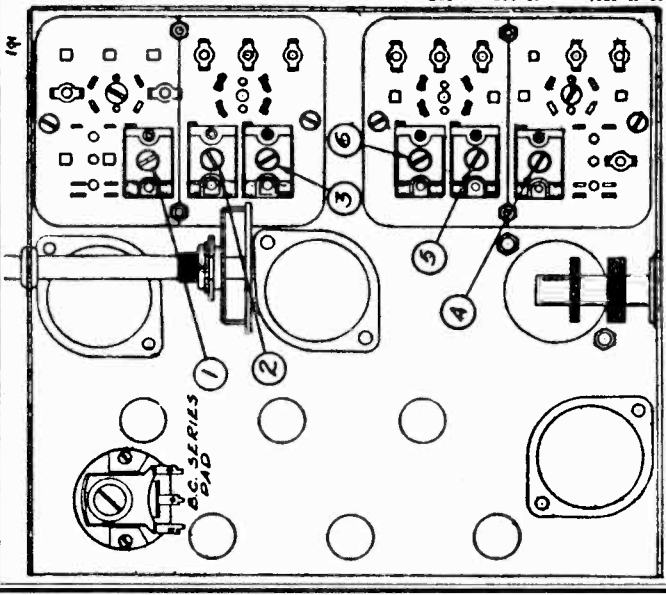
No.	Part No.	Description
RESISTORS		
R1	130-103	100M ohm - 1/3 w.
R2	130-12	50M ohm - 1/3 w.
R3	130-105	150 ohm - 1/3 w.
R4	130-77	10M ohm - 1 watt
R5	130-27	50 ohm - 1/3 w.
R6	130-34	19M ohm - 1 watt
R7	130-4	3 meg - 1/3 w.
R8	101-93	1 meg volume control
R9	130-4	3 meg - 1/3 w.
R10	106-26	32 ohm - resistor strip
R11	106-26	52 ohm - resistor strip
R12	106-26	220 ohm - resistor strip
R13	130-103	100M ohm - 1/3 w.
R14	130-102	500M ohm - 1/3 w.
R15	101-92	50M ohm - tone control
R10, R11 and R12 in same unit		

No.	Part No.	Description
CONDENSERS		
C1	100-22	.05 x 200
C2	100-26	.02 x 400
C3	129-39	.00005 Mica
C4	100-37	.003 x 600
C5	100-1	.1 x 400
C6	124-40	.000715 W.C. Series Pad
C7	129-55	.0034 Mica
C8	129-54	.003 Mica
C9	129-5	.0001 Mica
C10	100-26	.02 x 400
C11	119-45	8 mfd. - 400 w. v. lytic
C12	100-20	.1 x 200
C13	129-2	.0005 Mica
C14	100-11	.01 x 400
C15	119-45	8 mfd. 400 w. v. lytic
C16	100-65	.015 x 600
C17	100-37	.003 x 600
C18	100-61	.02 x 600
C19	100-11	.01 x 400
C11 and C15 in same unit		

No.	Part No.	Description
PARTS		
T1	111-51	Preselector Coil
T2	111-49	B. C. Antenna Coil Complete
T3	111-50	S.W. M.W. Antenna Coil complete
T4	110-39	S.W. M.W. Oscillator Coil complete
T5	110-38	B.C. Oscillator Coil complete
T6	108-109	Input I.F. Coil complete 465 kc.
T7	108-110	Output I.F. Coil complete 465 kc.
T8	114-85B	6" dynamic Speaker
T9	104-106	Power Transformer
L1		Speaker field 1200 ohm
S1	125-40	Wave band switch
S2		Off-On Switch on Volume Control

Mica condensers are coded with an additional dot indicating tolerance:
Tolerance percent Color of Dot
2 1/2 % White
5 % Green
10 % Blue
15 % Yellow
20 % Red
More Than 20 % None

The power consumption of this receiver is 75 watts.



MODEL 583 Export

MODEL 691

Alignments

BELMONT RADIO CORP.

CHASSIS MODEL 583 SERIES "A"

DUMMY ANTENNAS: (Serial No. 8A977900 and up)

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS: (465 K.C.):

Part No. 108-112B Output I.F. Transformer

Part No. 108-111B Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), and with variable condenser in its minimum capacity position, plates entirely out of mesh, make the following adjustments:

(a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1", to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-112B) to resonance.

(b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap of 6A8G and adjust input I.F. transformer (No. 108-111B) to resonance.

SHORT WAVE BAND ALIGNMENT:

5.45 to 18.3 Megacycles

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 16 megacycles and connected in series with "Dummy 3" to the antenna and ground leads, make the following adjustments:

(a) Move dial pointer to 16 megacycles and adjust short wave oscillator trimmer to resonance.

This adjustment is the trimmer mounted on the top of rear section of the variable gang condenser (see Fig. 1, top view, adjustment number 7).

(b) Adjust short wave antenna trimmer (Adjustment Number 3), to resonance (see Fig. 3, bottom view).

BROADCAST BAND ALIGNMENT:

535 to 1720 Kilocycles

1. With band changing switch in the broadcast position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to antenna and ground leads make following adjustments:

(a) Set external oscillator to 1720 K.C. and adjust broadcast oscillator trimmer to resonance. (Adjustment number 1, see bottom view of chassis, Fig. 3).

(b) Re-set external oscillator to 1400 K.C., rotate variable gang condenser and pick up signal. Adjust broadcast antenna trimmer (adjustment number 2), to resonance.

(c) Re-set external oscillator to 600 K.C., and adjust broadcast series pad (adjustment number 4), to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 3).

(d) Repeat adjustments "a" and "c" until sensitivity is at its maximum.

(e) Set external oscillator to 2100 K.C. (Image of 1170 K.C.) and tune in the signal at 1170 K.C. on the dial. Adjust the wire capacitor, (Adjustment number 6) by twisting the two wires until a **Minimum** output is obtained on output meter.

(f) Set external oscillator to 2630 K.C. (Image of 1700 K.C.) and tune in the signal at 1700 K.C. on the dial. Adjust the wire capacitor (Adjustment number 5), by moving the wire either toward or away from the coil winding until a **Minimum** output is obtained on output meter.

(g) Repeat adjustments (e) and (f) until the sensitivity is at a **Minimum**.

(h) Recheck the broadcast antenna trimmer (Adjustment number 2).

(i) Recheck the short wave antenna trimmer (Adjustment number 3).

MODEL 691 SERIES A (Serial No. J7850200 and up)

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

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

All voltages are to be measured with 115 volts on the primary of the power transformer.

DUMMY ANTENNAS:

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Middle and Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS: (465 K.C.):

Part No. 108-110 Output I.F. Transformer

Part No. 108-109 Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position (extreme left of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:

SHORT WAVE BAND ALIGNMENT:
5.2 to 18.1 Megacycles

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

(a) Move dial pointer to 17 megacycles, and adjust short wave oscillator (Adjustment number 3) and short wave antenna (Adjustment number 6) to resonance.

(b) Re-set external oscillator to 6 megacycles and pick up signal by rotating variable condenser and check sensitivity.

(c) Re-set external oscillator and check set at 18.1 megacycles and 5.2 megacycles for band coverage.

NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental. An example of this is an image of a fundamental 17 megacycle signal appears near 16.1 megacycles.

MIDDLE WAVE BAND ALIGNMENT:
1695 to 5500 Kilocycles

1. With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 5000 kilocycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

(a) Move dial pointer to 5000 kilocycles and adjust middle wave oscillator (Adjustment number 2) and middle wave antenna (Adjustment number 5) to resonance.

(b) Re-set external oscillator to 1800 kilocycles and pick up signal by rotating variable condenser and check sensitivity.

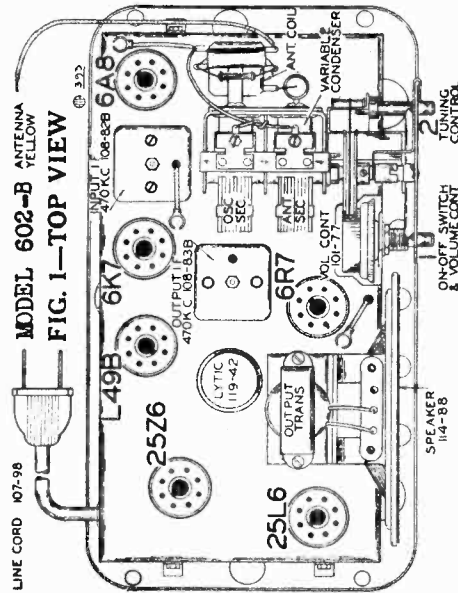
(c) Re-set external oscillator and check set at 5500 kilocycles and 1695 kilocycles for band coverage.

(d) Recheck broadcast band alignment.

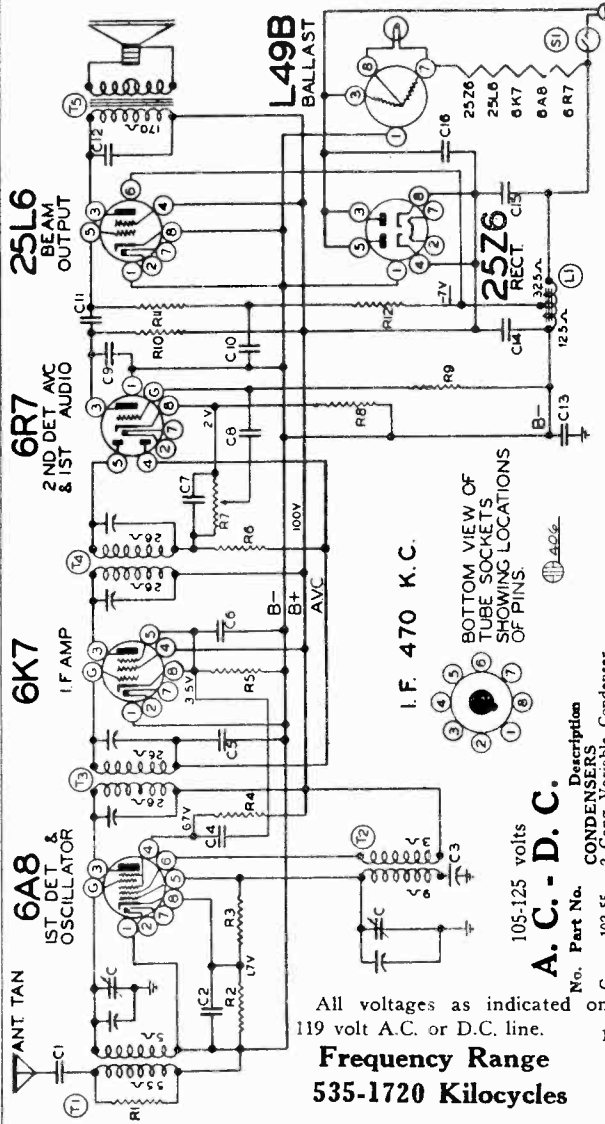
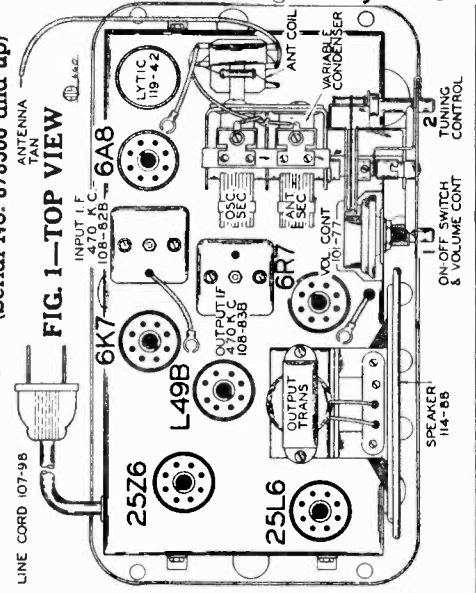
BELMONT RADIO CORP.

MODELS 602B, 602C
Schematic, Voltage
Socket, Trimmers
Alignment, Parts

- (a) With external oscillator set at 1720 kilocycles, adjust oscillator trimmer to resonance. This adjustment is on the top of rear section of variable gang condenser. (See Fig. 1).
- (b) Re-set external oscillator to 1400 kilocycles, rotate trimmer, pick up oscillator signal and adjust antenna condenser to resonance. (Top of front section of gang condenser).
- (c) Check sensitivity at 600 and 1000 kilocycles.



MODEL 602C (Serial No. 878500 and up)



ALIGNING I.F. TRANSFORMERS: (470 K.C.):

- Part No. 108-83B Output I.F. Transformer
- Part No. 108-82B Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see Fig. 1).

1. With volume control full on (the extreme right of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:
 - (a) Connect external oscillator set at 470 kilocycles, in series with .1 mid. condenser, to the control grid cap of the type 6K7G tube, and adjust the output I.F. transformer (No. 108-83B) to resonance.
 - (b) Move oscillator output clip from grid of 6K7G to grid of 6A8G and adjust input I.F. transformer (No. 108-82B) to resonance.
 - (c) With oscillator still connected to 6A8G, readjust output I.F. transformer (108-83B) if necessary.

R.F. ALIGNMENT: (535-1720 K.C.)

1. Unsolder the antenna wire from its terminal on the antenna coil and with gang condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator in series with a 50 mmf. condenser to the antenna terminal on the antenna coil and chassis ground and make the following adjustments:

A.C. - D.C.

No.	Part No.	Description	Tolerance	Color of Dot
C1	102-55	2 Gang Variable Condenser	25%	
C2	100-22	.002 x 600	25%	
C3	100-22	.05 x 200	25%	
C4	100-27	.000386 Compression Type	1%	
C5	100-27	.05 x 200	25%	
C6	100-20	.01 x 400	25%	
C7	128-21	.0002 Mica	25%	
C8	100-11	.01 x 400	25%	
C9	128-2	.0005 Mica	10%	
C10	100-75	.22 x 200	10%	
C11	100-10	.05 x 200	25%	
C12	100-67	.025 x 400	25%	
C13	100-53	.25 x 400	20%	
C14	119-42	5. mid. lytic 100 w. v.	20%	
C15	119-42	20. mid. lytic 100 w. v.	20%	
C16	100-39	.1 x 400	20%	
R1	130-17	10M ohm - 1/3 w.	20%	
R2	130-57	200 ohm - 1/3 w.	20%	
R3	130-12	50M ohm - 1/3 w.	20%	
R4	130-149	15M ohm - 1/3 w.	20%	
R5	130-34	500 ohm - 1/3 w.	20%	
R6	107-77	Volume Control (1 meg)	10%	
R7	130-193	3M ohm - 1/3 w.	10%	
R8	130-193	1 megohm - 1/3 w.	20%	
R9	130-94	50M ohm - 1/3 w.	10%	
R10	130-133	35M ohm - 1/3 w.	10%	
R11	130-194	35M ohm - 1/3 w.	10%	
R12	130-194	35M ohm - 1/3 w.	10%	
T1	111-79	Antenna Coil Complete		
T2	110-62	Oscillator Coil Complete		
T3	108-82B	Input I. F. Complete		
T4	108-83B	Output I. F. Complete		
T5	114-88	5" Dynamic Speaker		
L1	114-88	Speaker field 450 ohm - total tapped 125 ohm		
S1		Switch on volume control		

All voltages as indicated on diagram are measured with 119 volt A.C. or D.C. line.
Frequency Range 535-1720 Kilocycles

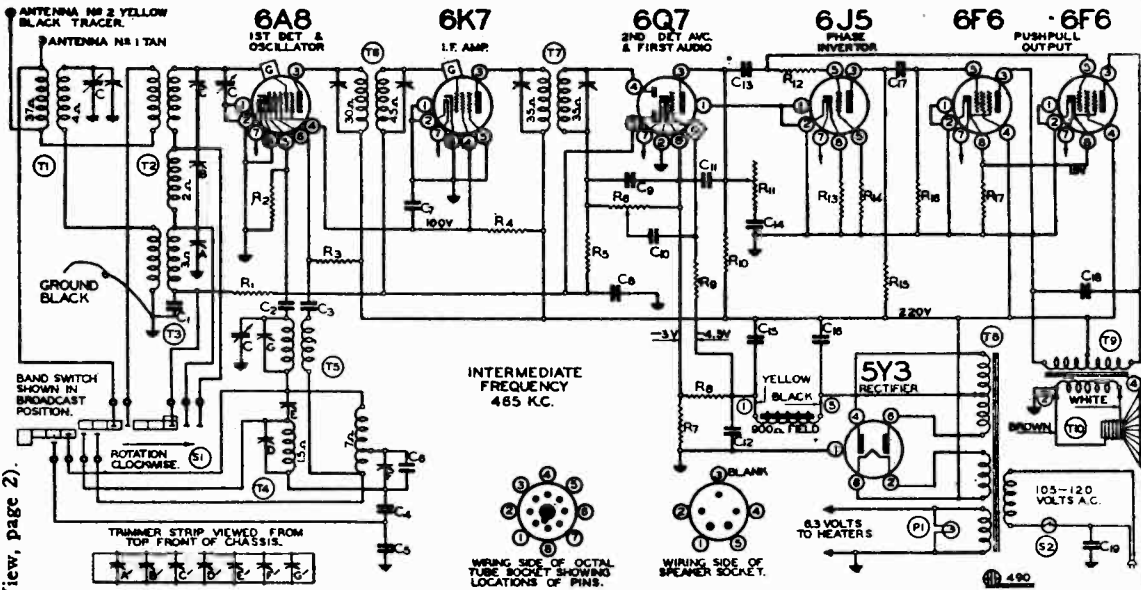
Mica condensers are coded with an additional dot indicating tolerance:
Tolerance percent
2% %
5% %
10% %
15% %
20% %
More Than 20% %
Color of Dot
White
Green
Blue
Yellow
Red
None

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

MODEL 761 Series A
Schematic, Voltage
Socket, Trimmers

BELMONT RADIO CORP.

Parts
For conventional types of antennas connect the tan wire with black tracer and the yellow with black tracer and the black wire together to the ground lead.
When a doublet antenna is used connect the tan wire and the yellow with black tracer wire to the doublet antenna and the solid black wire to the ground lead. (See Fig. 1—Top View, page 2).

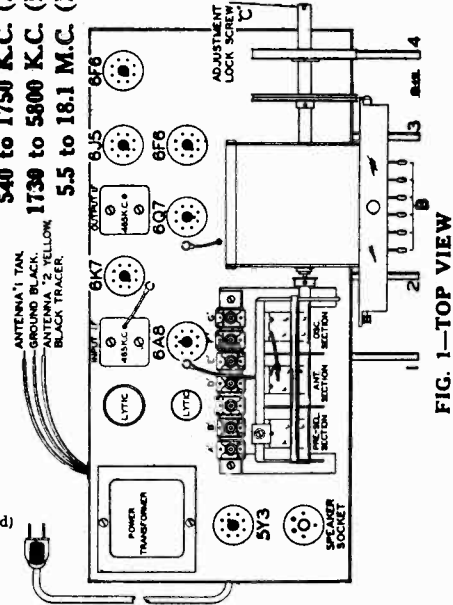


Mica condensers are coded with an additional dot indicating tolerance:

Code No.	Part No.	Description	Code No.	Part No.	Description
RESISTORS					
R1	130-103	100M ohm - 1/3 w. 10%	C7	100-39	.1 x 400 v. 20%
R2	130-12	50M ohm - 1/3 w. 20%	C8	100-26	.02 x 400 v. 25%
R3	130-123	15M ohm - 1/2 w. 10%	C9	129-5	.0001 Mica 20%
R4	130-196	30M ohm - 1 w. 10%	C10	100-26	.02 x 400 v. 25%
R5	130-4	3 megohm - 1/3 w. 20%	C11	129-2	.0005 Mica 20%
R6	101-104	1 megohm volume control	C12	100-20	.1 x 200 v. 25%
R7	130-198	40 ohm - 1/2 w. 10%	C13	100-26	.02 x 400 v. 25%
R8	130-197	20 ohm - 1/3 w. 10%	C14	100-57	.006 x 600 v. + 10 - 20%
R9	130-4	3 megohm - 1/3 w. 20%	C15	103-14	16 mfd. lytic 275 w.v. Reg.
R10	130-103	100M ohm - 1/3 w. 10%	C16	103-6	8 mfd. lytic 350 w.v.
R11	101-105	300M ohm - tone control	C17	100-26	.02 x 400 v. 25%
R12	130-163	400M ohm - 1/3 w. 10%	C18	100-37	.003 x 600 v. 10%
R13	130-22	5M ohm - 1/3 w. 20%	C19	100-61	.02 x 600 v. bakelite 20%
R14	130-103	100M ohm - 1/3 w. 10%	PARTS		
R15	130-12	50M ohm - 1/3 w. 20%	T1	111-88	B.C. Pre-Selector Coil complete
R16	130-102	500M ohm - 1/3 w. 10%	T2	111-87	S.W.M.W. Antenna Coil Complete
R17	130-195	250 ohm - 1.2 w. 10%	T3	111-86	B.C. Antenna Coil Complete
CONDENSERS					
C	102-62	3 gang variable	T4	110-69	M.W. Oscillator Coil Complete
C1	100-22	.05 x 200 v. 25%	T5	110-70	S.W. B.C. Oscillator Coil Complete
C2	129-67	.00004 Mica 10%	T6	108-105	Input I.F. 465 kc. Complete
C3	100-25	.002 x 600 v. 25%	T7	108-106E	Output I.F. 465 kc. Complete
C4	129-83	.0027 Mica 2-1/2%	T8	104-87C	Power Transformer
C5	129-84	.003 Mica 2-1/2%	T9	105-58	Output Transformer
C6	129-88	.0006 Mica 5%	T10	114-109	6" dynamic speaker (900 Ohm Field)
			S1	125-45	Wave change switch
			S2		Off-on switch on tone control
			P1	107-94	6-8 volt pilot light

FREQUENCY RANGE
540 to 1750 K.C. (Kilocycles)
1730 to 5800 K.C. (Kilocycles)
5.5 to 18.1 M.C. (Megacycles)

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



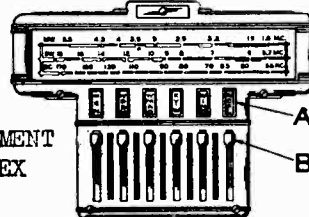
Voltagess taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt. These voltagess are clearly indicated on the circuit diagram.

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

All voltagess are to be measured with 115 volts on the primary of the power transformer.

Receivers of this model which are to be used on voltagess or frequencies other than 105-115 volts, 60 cycles are so marked. The power consumption of this receiver is 75 watts.

FOR ALIGNMENT
SEE INDEX



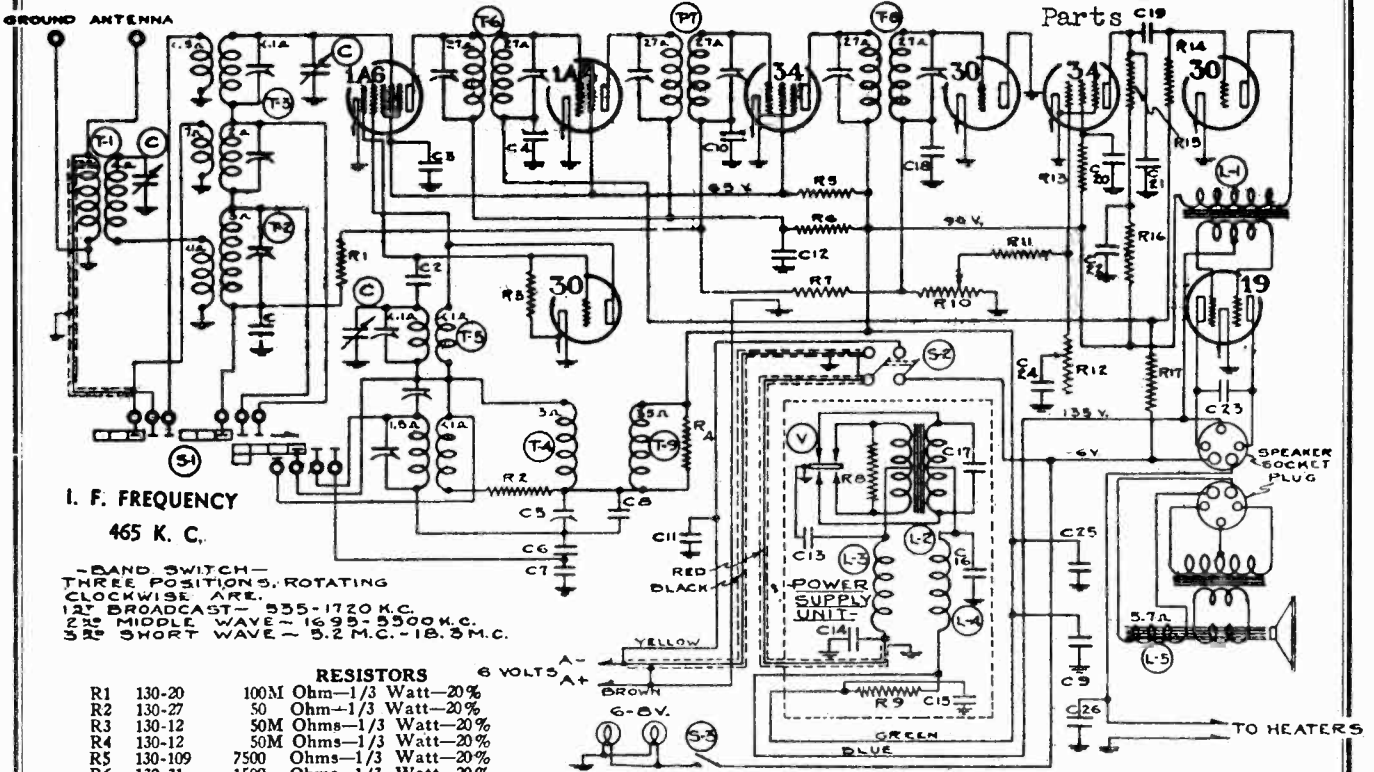
CHASSIS MODEL 761

SERIES A

3-Band All-Wave A.C. Superheterodyne Receiver (Serial No. 8A973750 and up)

BELMONT RADIO CORP.

MODEL 823
Schematic, Voltage
Socket, Trimmers
Parts



I. F. FREQUENCY
465 K. C.

BAND SWITCH -
THREE POSITIONS - ROTATING
CLOCKWISE ARE:
1ST BROADCAST - 535-1720 K.C.
2ND MIDDLE WAVE - 1695-5500 K.C.
3RD SHORT WAVE - 5.2 M.C. - 18.5 M.C.

- RESISTORS**
- R1 130-20 100M Ohm-1/3 Watt-20%
 - R2 130-27 50 Ohm-1/3 Watt-20%
 - R3 130-12 50M Ohms-1/3 Watt-20%
 - R4 130-12 50M Ohms-1/3 Watt-20%
 - R5 130-109 7500 Ohms-1/3 Watt-20%
 - R6 130-31 1500 Ohms-1/3 Watt-20%
 - R7 130-19 1 Meg Ohm-1/3 Watt-20%
 - R8 130-84 200 Ohms-1/3 Watt-20%
 - R9 130-115 3M Ohms-Volume Control
 - R10 101-50 250M Ohms-Tone Control
 - R11 130-12 50M Ohms-1/3 Watt-20%
 - R12 101-51 300M Ohms-Tone Control
 - R13 130-19 1 Meg Ohm-1/3 Watt-20%
 - R14 130-19 1 Meg Ohm-1/3 Watt-20%
 - R15 130-11 250M Ohms-1/3 Watt-20%
 - R16 130-20 100M Ohms-1/3 Watt-20%
 - R17 130-19 1 Meg Ohm-1/3 Watt-20%
- CONDENSERS**
- C1 100-22 .05 x 200 V.-20%
 - C2 129-50 .00004 Mica -30%
 - C3 100-6 .25 x 200 V.-20%
 - C4 100-6 .25 x 200 V.-20%
 - C5 124-28 130 mmf. Adjustable Pad
 - C6 129-55 .0034 Mica-2 1/4 %
 - C7 129-54 .003 Mica-2 1/4 %
 - C8 129-65 .00055 Mica-5 %
 - C9 103-11 8 mfd. x 200 V. Lytic
 - C10 100-22 .05 x 200 V.-20%
 - C11 100-20 .1 x 200 V.-25 %
 - C12 100-20 .1 x 200 V.-25 %
 - C13 100-35 .5 mfd. x 200 V.-10% -50 %
 - C14 100-35 .5 mfd. x 200 V.-10% -50 %
 - C15 100-20 .1 x 200 V.-25 %
 - C16 119-26 8 mfd. Lytic-200 V.
 - C17 100-38 .01 x 800 V.-10 %
 - C18 129-12 .00025 Mica-20 %
 - C19 100-11 .01 x 400 V.-25 %
 - C20 100-22 .05 x 200 V.-20 %
 - C21 129-5 .0001 Mica-20 %
 - C22 100-20 .1 x 200 V.-25 %
 - C23 100-25 .002-600 V.-25 %
 - C24 100-11 .01 x 400 V.-25 %
 - C25 100-6B .25 x 200 V.-20 %
 - C26 100-5B 1.0 x 120 V.-50 % -10 %

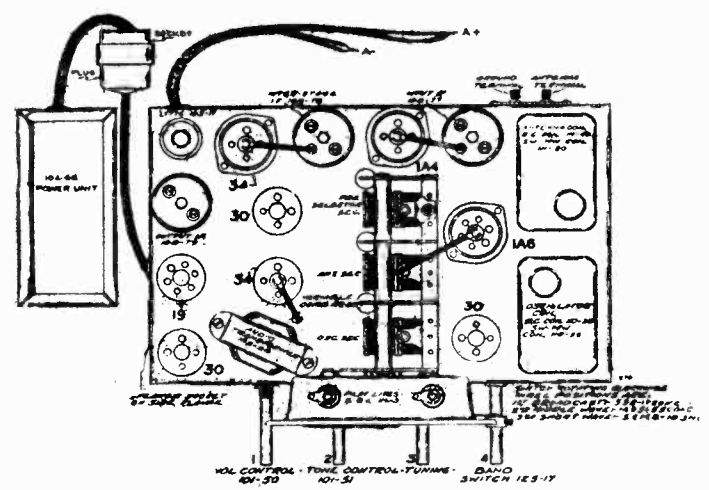
- PARTS**
- C 102-28 One Section of 3 Gang Condenser
 - T1 111-51 B. C. - Pre Selector Coil
 - T2 111-49 Broadcast Antenna Coil
 - T3 111-50 M. W. S. W. Antenna Coil
 - T4 110-38 B. C. Oscillator Coil
 - T5 110-39 M. W. S. W. Oscillator Coil
 - T6 108-77 Input I. F. - 465 Kc.
 - T7 108-78 Interstage I. F. - 465 Kc.
 - T8 108-79 Output I. F. - 465 Kc.
 - T9 123-3 R. F. Choke Coil
 - L1 105-28 Audio Input Transformer
 - L2 104-61 Power Transformer
 - L3 105-19 "A" Choke
 - L4 123-3 R. F. Choke Coil
 - L5 114-40 6" Speaker (Field Resistance 5.7 Ohms)
 - S1 125-17 Band Switch
 - S2 101-50 On Volume Control
 - S3 On Tuning Shaft
 - V 126-4 Vibrator

BATTERY CONNECTIONS:

Connect the yellow lead marked A negative (-) to the negative (-) post of the storage battery.
Connect the brown lead marked A positive (+) to the positive (+) post of the storage battery.

TUBES:

- The tube complement of this chassis is as follows:
- 1-Type 1A6 Pentagrid Mixer, First Detector.
 - 1-Type 1A4 Tetrode First I.F. Amplifier (465 K.C.)
 - 1-Type 34 Remote Cut-Off Pentode, 2nd I.F. Amplifier (465 K.C.)
 - 1-Type 30 Oscillator.
 - 1-Type 30 Second Detector and A. V. C.
 - 1-Type 34 A.F. Amplifier.
 - 1-Type 30 Driver Amplifier.
 - 1-Type 19 Class "B" Push-Pull Output Amplifier.



TOP VIEW

MODEL 823

Alignment, Trimmers

BELMONT RADIO CORP.

SERVICE NOTES:

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

In order to prevent signal from acting upon A. V. C. and affecting accuracy of voltage measurements, aerial and ground leads should be short circuited while making measurements.

All voltages are to be measured with 6.3 volts input to receiver. Resistances of coils and transformer windings are indicated in ohms on the schematic circuit diagram.

DUMMY ANTENNAS:

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Middle and Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

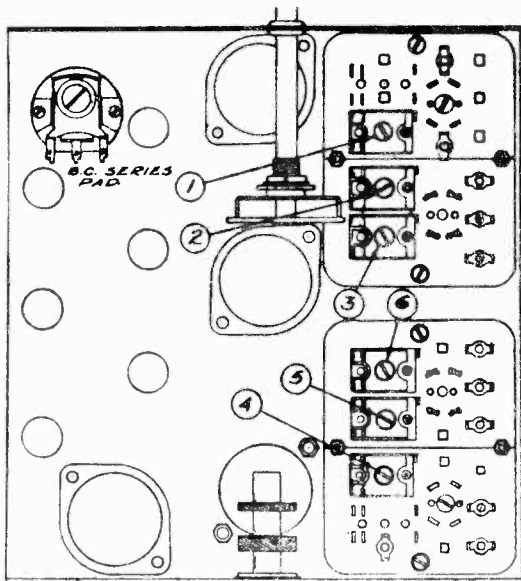
ALIGNING I.F. TRANSFORMERS: (465 K.C.):

Part No. 108-79 Output I.F. Transformer
Part No. 108-78 Interstage I.F. Transformer
Part No. 108-77 Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:

- (a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1", to the control grid cap of the type 34 tube, and adjust the output I.F. transformer (No. 108-79) to resonance.
- (b) With "Dummy 1" still connected, move oscillator output clip from grid of 34 to grid cap to 1A4 and adjust interstage I.F. transformer (No. 108-78) to resonance.



BOTTOM VIEW SHOWING TRIMMERS

- (c) Move oscillator to grid cap of 1A6 and adjust input I.F. transformer (No. 108-77).

BROADCAST BAND ALIGNMENT:

535 to 1720 Kilocycles

1. With band changing switch in the broadcast position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to antenna and ground posts, make following adjustments:

- (a) Set external oscillator to 1720 K.C. and adjust broadcast oscillator trimmer to resonance. (Adjustment number 1; see bottom view of coil assembly, Fig. 3).
- (b) Re-set external oscillator to 1550 K.C., rotate variable gang condenser and pick up signal. Adjust broadcast antenna trimmer (adjustment number 4) to resonance; also adjust preselector trimmer which is mounted on the top of the rear section of the three gang variable tuning condenser to resonance. (See top view of chassis, Fig. 1, for location of this adjustment).
- (c) Re-set external oscillator to 600 K.C., and adjust broadcast series pad to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 3).
- (d) Repeat adjustments "a" and "b" until sensitivity is at its maximum.
- (e) Check for tracking and sensitivity at 1000 kilocycles. Under no circumstances bend plates of variable condenser sections to correct tracking.

SHORT WAVE BAND ALIGNMENT:

5.2 to 18.3 Megacycles

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the antenna and ground posts, make the following adjustments:

- (a) Move dial pointer to 17 megacycles and adjust short wave oscillator (adjustment number 3) and short wave antenna (adjustment number 6) to resonance.
- (b) Re-set external oscillator to 6 megacycles and pick up signal by rotating variable condenser and check sensitivity.
- (c) Re-set external oscillator and check set at 18.1 megacycles and 5.3 megacycles for band coverage.

NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental on the receiver dial. As an example of this a fundamental 18.3 megacycle signal can be tuned in not only at 18.3 on the dial but also at approximately 17.4 megacycles.

MIDDLE WAVE BAND ALIGNMENT:

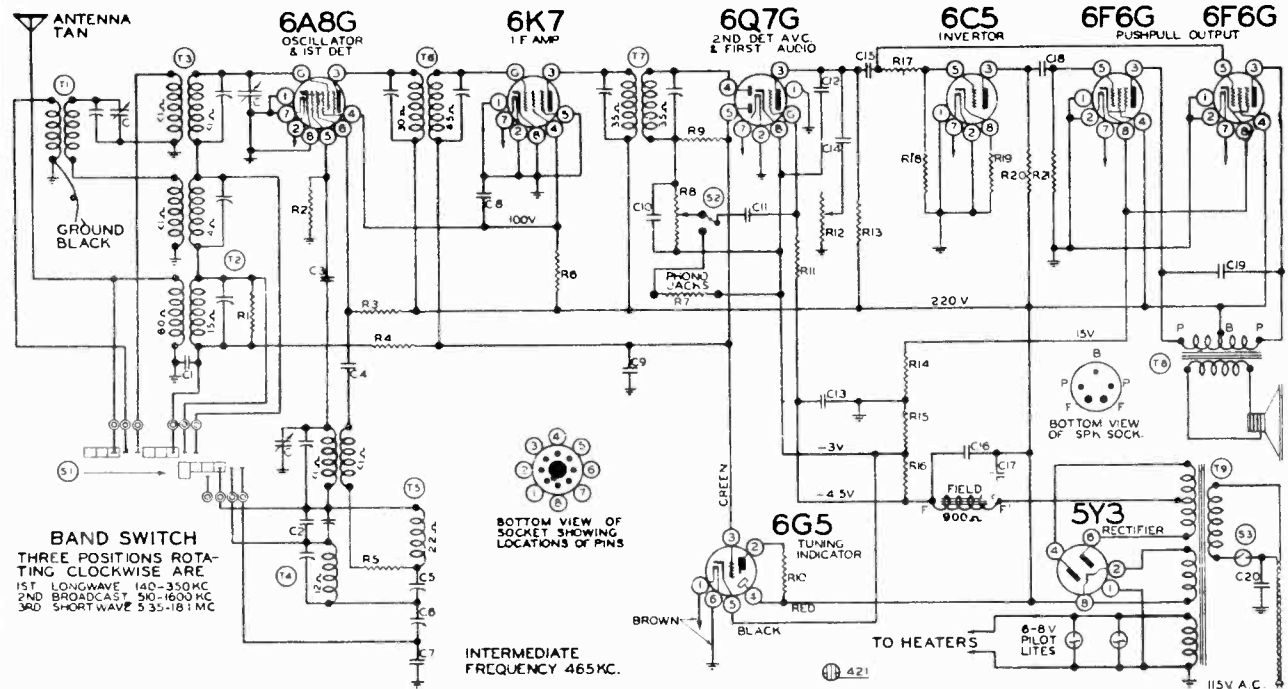
1695 to 5500 Kilocycles

1. With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 5000 kilocycles and connected in series with "Dummy 3" to the antenna and ground posts make the following adjustments:

- (a) Move dial pointer to 5000 kilocycles and adjust middle wave oscillator (adjustment number 2) and middle wave antenna (adjustment number 5) to resonance.
- (b) Re-set external oscillator to 1800 kilocycles and pick up signal by rotating variable condenser and check sensitivity.
- (c) Re-set external oscillator and check set at 5400 kilocycles and 1700 kilocycles for band coverage.

BELMONT RADIO CORP.

MODEL 842 Series A
Schematic, Voltage
Socket, Trimmers
Parts



R-1	130-3	500M Ohm
R-2	130-12	50M Ohm
R-3	130-48	15M Ohm
R-4	130-103	100M Ohm
R-5	130-27	50 Ohm
R-6	130-96	25M Ohm
R-7	130-103	100M Ohm
R-8	101-74	Volume Control
R-9	130-4	3 meg Ohm
R-10	130-110	In Tuning Indicator Socket
R-11	130-4	3 meg Ohm
R-12	101-75	Tone Control
R-13	130-103	300M Ohm
R-14	106-37	Resistor Strip
R-15	106-37	Resistor Strip
R-16	106-37	Resistor Strip
R-17	130-163	400M Ohm
R-18	130-103	100M Ohm
R-19	130-22	5M Ohm
R-20	130-12	50M Ohm
R-21	130-100	150M Ohm

MODEL 842
SERIES A
(Serial No. 7H830700 and up)

PARTS

T-1	111-62	B.C. Pre Selector
T-2	111-61	L.W. Ant. Coil Assembly
T-3	111-64	B.C. S.W. Ant. Coil Assembly
T-4	110-49	B.C. S.W. Osc. Coil Assembly
T-5	110-47	L.W. Osc. Coil Assembly
T-6	108-105	Input I.F. — 465 K.c.
T-7	108-106	Output I.F. — 465 K.c.
T-8	114-66	6" Dynamic Speaker (900 Ohm Field)
T-9	104-96	Power Transformer 40 Cycle—Universal
S-1	125-17	Band Switch
S-2	125-22	Phono Switch
S-3		On-Off Switch on Volume Control

NOTE—R-14, R-15, and R-16 in one unit, part 106-37

C	102-47	3 Gang Variable
C-1	100-22	.05
C-2	129-67	Mica .00004
C-3	129-39	Mica .00005
C-4	100-12	.003
C-5	124-31	Adj. Padder 300 mmf.
C-6	124-32	Adj. Padder 565 mmf.
C-7	129-54	Mica .003
C-8	100-39	.1
C-9	100-22	.05
C-10	129-5	Mica .0001
C-11	100-11	.01
C-12	129-2	Mica .0005
C-13	100-20	.1
C-14	100-57	.006
C-15	100-26	.02
C-16	103-14	Lytic Filter 16 mfd.
C-17	103-6	Lytic Filter 8 mfd.
C-18	100-26	.02
C-19	100-12	.003
C-20	100-61	(Bakelite Case, Type) .02

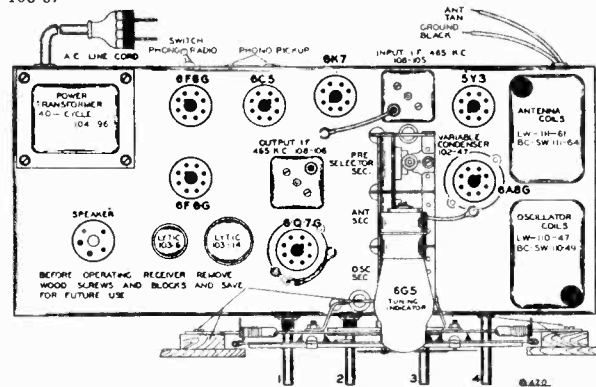


FIG. 1—TOP VIEW

BAND DIAL SCALE FREQUENCY RANGE

Long Wave... Outer Scale... 350 to 140 K.C. (Kilocycles) 860-2150 Meters

Medium Wave... Center Scale... 1600 to 510 K.C. (Kilocycles) 187-588 Meters

Short Wave... Inner Scale... 18.1 to 5.35 M.C. (Megacycles) 16.5-56.5 Meters

MODEL 842 Series A
Alignment, Trimmers

BELMONT RADIO CORP.

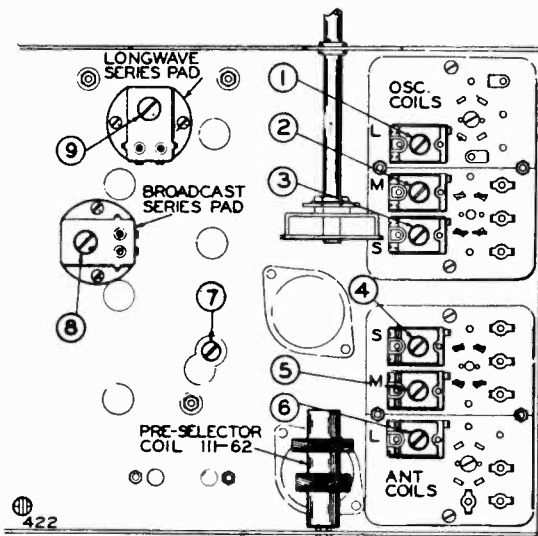


FIG. 3—BOTTOM VIEW SHOWING TRIMMERS

DUMMY ANTENNAS:

The following dummy antennas are used in aligning the receiver, and are referred to in the following alignment instructions as "Dummy 1," "Dummy 2," and "Dummy 3."

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Medium and long wave) — Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS: (465 K.C.) (645.1 METERS)

Part No. 108-106 Output I.F. Transformer
Part No. 108-105 Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the medium position, (center of its rotation), and with the variable condenser set to minimum capacity make the following adjustments:

- Connect external oscillator set at 465 kilocycles, in series with "Dummy 1", to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-106) to resonance.
- With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap of 6A8G and adjust input I.F. transformer (No. 108-105) to resonance.

SHORT WAVE BAND ALIGNMENT:

16.5 Meters (18.1 Mc) to 56.5 Meters (5.35 Mc).

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles (17.6 meters) and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

- Move dial pointer to 17 megacycles (17.6 meters) and adjust short wave oscillator (Adjustment number 3) and short wave antenna (Adjustment number 4) to resonance.

(b) Re-set external oscillator to 6 megacycles (50 meters) and pick up signal by rotating variable condenser and check sensitivity.

(c) Re-set external oscillator and check set at 18.1 megacycles (16.5 meters) and 5.3 megacycles (56.5 meters) for band coverage.

NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental. An example of this is an image of a fundamental 17 megacycle signal appears near 16.1 megacycles.

MEDIUM BAND ALIGNMENT:

588 Meters (510 K.C.) to 187 Meters (1600 K.C.)

1. With band changing switch in the medium wave position, center of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to tan antenna lead and black ground lead, make following adjustments.

(a) Set external oscillator to 187 meters (1600 K.C.) and adjust medium wave oscillator trimmer to resonance (adjustment number 2; see bottom view of coil assembly. Fig. 3.)

(b) Re-set external oscillator to 214 meters (1400 K.C.), rotate variable gang condenser and pick up signal. Adjust medium wave antenna trimmer (Adjustment number 5) to resonance; also adjust preselector trimmer condenser to resonance, (Adjustment number 7; see Bottom View, Fig. 3).

(c) Re-set external oscillator to 500 meters (600 K.C.), and adjust medium wave series pad to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 3, Adjustment 8).

(d) Repeat adjustments "a" and "b" until sensitivity is at its maximum.

(e) Check for tracking and sensitivity at 300 meters (1000 K.C.) **Under no circumstances bend plates of variable condenser sections to correct tracking.**

IMPORTANT: This band must be completely rechecked after the long wave band has been adjusted.

LONG WAVE BAND ALIGNMENT:

860 Meters (350 K.C.) to 2150 Meters (140 K.C.)

1. With band changing switch in the long wave position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to tan antenna lead and black ground lead, make following adjustments:

(a) Set external oscillator to 860 meters (350 K.C.), and adjust long wave oscillator trimmer to resonance (adjustment number 1; see bottom view of coil assembly. Fig. 3.)

(b) Re-set external oscillator to 925 meters (325 K.C.), rotate variable gang condenser and pick up signal. Adjust long wave antenna trimmer (Adjustment number 6) to resonance.

(c) Re-set external oscillator to 2000 meters (150 K.C.), and adjust long wave series pad to resonance by rotating condenser to approximately 2000 meters, rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 3, Adjustment 9).

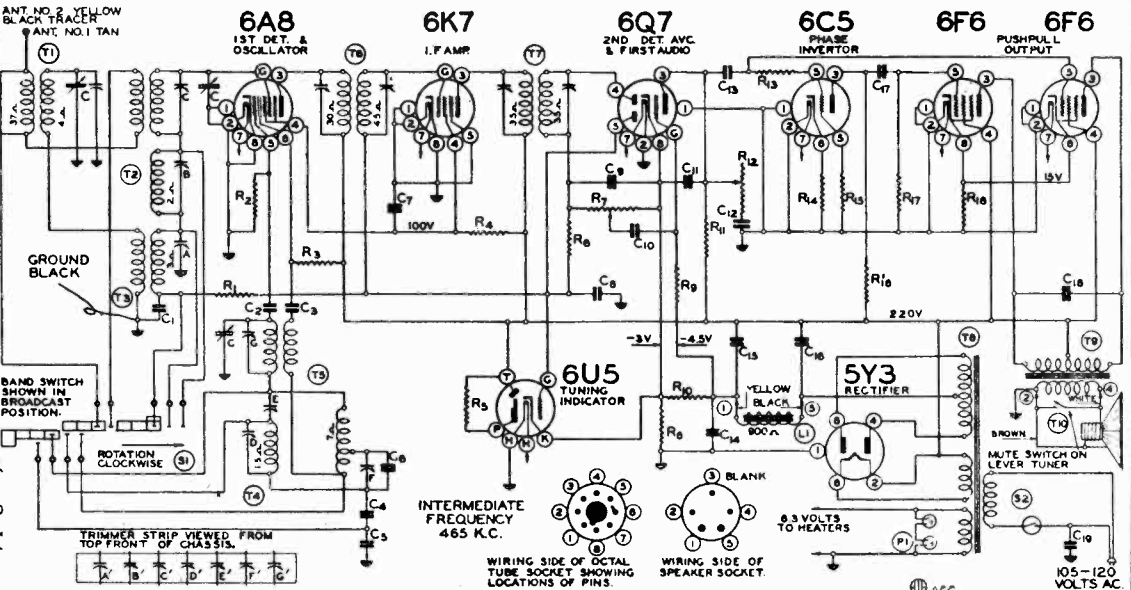
(d) Repeat adjustments "a" and "b" until sensitivity is at its maximum.

IMPORTANT: This band must be completely rechecked after the medium wave band has been rechecked.

BELMONT RADIO CORP.

MODEL 860 Series A
Schematic, Voltage
Socket, Trimmers
Parts

For conventional types of antennas connect the yellow wire to the antenna lead and the yellow with black tracer and the black wire together to the ground lead.
When a doublet antenna is used connect the yellow wire and the yellow with black tracer wire to the doublet antenna and the solid black wire to the ground lead. (See Fig. 1—Top View, page 2).



Code No.	Part No.	Description	Code	Part No.	Description
		RESISTORS	C5	129-84	.003 Mica 2-1/2%
			C6	129-88	.0006 Mica 5%
			C7	100-1	.1 x 400 v. - 50 - 10%
			C8	100-26	.02 x 400 v. 25%
			C9	129-5	.0001 Mica 20%
			C10	100-26	.02 x 400 v. 25%
			C11	129-2	.0005 Mica 20%
			C12	100-57	.006 x 600 v. - 10 - 20%
			C13	100-26	.02 x 400 v. 25%
			C14	100-20	.1 x 200 v. 25%
			C15	103-14	16 mfd. Regulating Lytic - 275 w.v.
			C16	103-6	8 mfd. Lytic - 350 w.v.
			C17	100-26	.02 x 400 v. 25%
			C18	100-37	.003 x 600 v. 10%
			C19	100-61	.02 x 600 v. 20% Bakelite
					CONDENSERS
			C	102-62	3 gang variable
			C1	100-22	.05 x 200 v. - 25%
			C2	129-67	.00004 Mica 10%
			C3	100-25	.002 x 600 v. 25%
			C4	129-83	.0027 Mica 2-1/2%
			T1	111-88	B.C. Pre-selector complete
			T2	111-87	S.W.M.W. Antenna Coil - complete
			T3	111-86	B.C. Antenna Coil Complete
			T4	110-69	M.W. Osc. Coil Complete
			T5	110-70	S.W.B.C. Osc. Coil Complete
			T6	108-105D	Input I.F. Coil - complete 465 kc.
			T7	108-106E	Output I.F. Coil - complete 465 kc.
			T8	104-87B	Power Transformer
			T9	105-54	Output Transformer
			T10	114-99	10" Dynamic speaker
			L1		900 ohm speaker field
			S1	125-42	Wave change switch
			S2		Off-on switch on tone control
			P1	107-94	6-8 volt pilot light

Mica condensers are coded with an additional dot indicating tolerance:

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

FREQUENCY RANGE
540 to 1750 K.C.
1730 to 5800 K.C.
5.5 to 18.1 M.C.

CHASSIS MODEL 860 Series A

(Serial No. 7L897400 and up)

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

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

All voltages are to be measured with 115 volts on the primary of the power transformer.

Receivers of this model which are to be used on voltages or frequencies other than 105-115 volts, 60 cycles are so marked. The power consumption of this receiver is 75 watts.

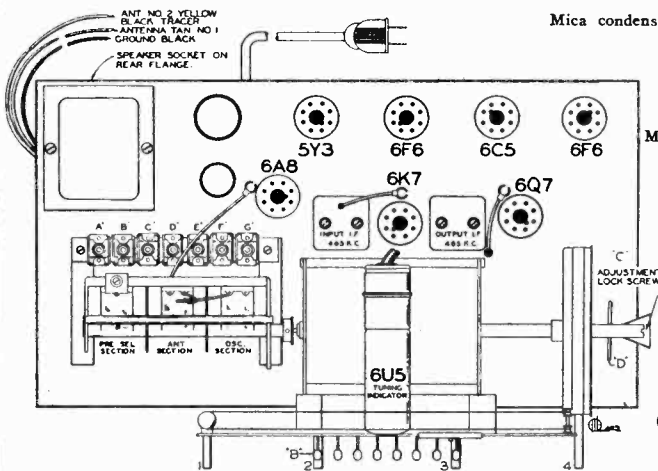
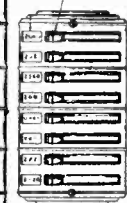
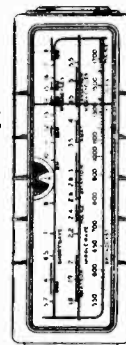


FIG. 1—TOP VIEW



4 TUNING CONTROL

3 VOLUME CONTROL

2 TONE CONTROL

1 SWITCH

FIG. 2—FRONT VIEW

3-Band All-Wave A.C. Superheterodyne Receiver

MODEL 761

MODEL 860

Alignment, Tuner

BELMONT RADIO CORP.

PROCEDURE FOR SETTING THE AUTOMATIC TUNER LEVERS:

There are six levers on the dial by means of which six stations may be selected, (See "B", Fig. 2).

Make a list of local stations you tune in regularly; any number up to and including 6.

Punch out from the set of station call letter tabs supplied, the call letters of the stations you have selected.

Above each automatic tuner lever an opening in the escutcheon is provided for inserting the call letter tabs, (See "A" Fig. 2). Any order of grouping may be used, however, it is recommended that the left hand four automatic levers be used for high frequency stations (1750 to 1000 K.C.) and the right hand four automatic levers for low frequency stations (1000 to 540 K.C.).

Insert the call letter tabs in the rectangular openings in the escutcheon above each of the automatic tuner levers. One of the small celluloid tabs supplied should be snapped into place over each of the station call letter tabs.

Press DOWN ALL THE WAY any one of the automatic tuner levers. Holding it down FIRMLY, tune in by means of the tuning knob (No. 4) the station indicated on the station call letter tab above this lever. Turn the tuning knob very slowly back and forth (while still holding lever in downward position) until the signal is clearest. The station will then be accurately tuned in. Release the lever.

Press down another automatic tuner lever. Holding it down FIRMLY, carefully tune in the station indicated on the call letter tab above this lever. Release this lever.

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

Rotate the tuning knob (No. 4) to the right (clockwise) as far as it will turn. Now remove from the right side of the cabinet the metal button, and, with a screw driver inserted through the hole, tighten the locking adjustment screw "C". It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT.

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

If you should desire to change any station you selected to another, loosen the locking screw "C" four or five complete turns; select the new station as explained. (Note: If the dial mechanism works hard when setting up a new station for one of the automatic tuner levers, it is due to the locking screw being too tight. Loosen the locking screw "C" until the dial mechanism works freely with the tuner lever pressed down.)

BE SURE TO RETIGHTEN THE LOCKING SCREW; otherwise the stations you have selected will not stay adjusted to the levers.

**MODEL 860
SERIES A**

(Serial No. 7L897400 and up)

PROCEDURE FOR SETTING THE AUTOMATIC TUNER LEVERS:

There are eight levers on the dial by means of which eight stations may be selected, (See "B", Fig. 2).

Make a list of local stations you tune in regularly; any number up to and including 8.

Punch out from the set of station call letter tabs supplied, the call letters of the stations you have selected.

Above each automatic tuner lever an opening in the escutcheon is provided for inserting the call letter tabs, (See "A" Fig. 2). Any order of grouping may be used, however, it is recommended that the left hand four automatic levers be used for high frequency stations (1750 to 1000 K.C.) and the right hand four automatic levers for low frequency stations (1000 to 540 K.C.).

Insert the call letter tabs in the rectangular openings in the escutcheon above each of the automatic tuner levers. One of the small celluloid tabs supplied should be snapped into place over each of the station call letter tabs.

Press DOWN ALL THE WAY any one of the automatic tuner levers. Holding it down FIRMLY, tune in by means of the tuning knob (No. 4) the station indicated on the station call letter tab above this lever. Turn the tuning knob very slowly back and forth (while still holding lever in downward position) noting the width of the shadow indicated on the screen of the cathode-ray tuning eye. Minimum width on the eye indicates the ideal tuning position (resonance). The station will then be clearest and accurately tuned in. Release the lever.

Press down another automatic tuner lever. Holding it down FIRMLY, carefully tune in the station indicated on the call letter tab above this lever. Release this lever.

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

Rotate the tuning knob (No. 4) to the right (clockwise) as far as it will turn. Now remove from the right side of the cabinet the metal button, and, with a screw driver inserted through the hole, tighten the locking adjustment screw "C". It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT. If a screw driver is not available, the locking screw can be tightened by reaching in from the back of the cabinet, and, by means of the pin "D"

(see Fig. 1), rotate the locking screw shaft to the right (clockwise) until thoroughly tight.

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

If you should desire to change any station you selected to another, loosen the locking screw "C" four or five complete turns; select the new station as explained. (Note: If the dial mechanism works hard when setting up a new station for one of the automatic tuner levers, it is due to the locking screw being too tight. Loosen the locking screw "C" until the dial mechanism works freely with the tuner lever pressed down.)

BE SURE TO RETIGHTEN THE LOCKING SCREW; otherwise the stations you have selected will not stay adjusted to the levers.

DUMMY ANTENNAS:

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a 1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Middle and Short Wave)—Consists of a 1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS: (465 K.C.):

Part No. 108-106E Output I.F. Transformer

Part No. 108-105D Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view, Fig. 1).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:

(a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1"; to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-106E) to resonance.

(b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap of 6A8 and adjust input I.F. transformer (No. 108-105D) to resonance.

**BROADCAST BAND ALIGNMENT:
540 to 1750 Kilocycles**

1. With band changing switch in the broadcast position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to tan antenna lead and black ground lead, make following adjustments:

(a) Set external oscillator to 1750 K.C. and adjust broadcast oscillator trimmer to resonance (adjustment E'; see top view, Fig. 1).

(b) Re-set external oscillator to 1400 K.C. rotate variable gang condenser and pick up signal. Adjust broadcast antenna trimmer (Adjustment A) to resonance; also adjust pres-selector trimmer which is mounted on the top of the rear section of the three gang variable tuning condenser to resonance. (See top view of chassis, Fig. 1, for location of this adjustment.)

(c) Re-set external oscillator to 600 K.C. and adjust broadcast series pad (Adjustment F') to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series pad maximum output is attained.

(d) Repeat adjustments "a" and "c" until sensitivity is at its maximum.

(e) Check for tracking and sensitivity at 1000 kilocycles. Under no circumstances bend plates of variable condenser sections to correct tracking.

**SHORT WAVE BAND ALIGNMENT:
5.5 to 18.1 Megacycles**

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

(a) Move dial pointer to 17 megacycles and adjust short wave oscillator (Adjustment G') and short wave antenna (Adjustment C) to resonance.

(b) Re-set external oscillator to 6 megacycles and pick up signal by rotating variable condenser and check sensitivity.

(c) Re-set external oscillator and check set at 18.1 megacycles and 5.5 megacycles for band coverage.

NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental. An example of this is an image of a fundamental 17 megacycle signal appears near 16.1 megacycles.

**MIDDLE WAVE BAND ALIGNMENT:
1750 to 5800 Kilocycles**

1. With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 5000 kilocycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

(a) Move dial pointer to 5000 kilocycles and adjust middle wave oscillator (Adjustment D') and middle wave antenna (Adjustment B) to resonance.

(b) Re-set external oscillator to 1900 kilocycles and pick up signal by rotating variable condenser and check sensitivity.

(c) Re-check broadcast band alignment.

TO REMOVE THE CHASSIS FROM THE CABINET:

Remove the four bolts which are used to fasten the chassis to the cabinet shell; pull the knobs off their shafts and pull off the six button lever keys on front of dial.

MODEL 761

(Serial No. 8A973750 and up)

Series A**DUMMY ANTENNAS:**

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a 1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Middle and Short Wave)—Consists of a 1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS: (465 K.C.):

Part No. 108-106E Output I.F. Transformer

Part No. 108-105 Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view, Fig. 1).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:

(a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1"; to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-106E) to resonance.

(b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap of 6A8 and adjust input I.F. transformer (No. 108-105) to resonance.

**BROADCAST BAND ALIGNMENT:
540 to 1750 Kilocycles**

1. With band changing switch in the broadcast position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to tan antenna lead and black ground lead, make following adjustments:

(a) Set external oscillator to 1750 K.C. and adjust broadcast oscillator trimmer to resonance (adjustment E'; see top view, Fig. 1).

(b) Re-set external oscillator to 1400 K.C. rotate variable gang condenser and pick up signal. Adjust broadcast antenna trimmer (Adjustment A) to resonance; also adjust pres-selector trimmer which is mounted on the top of the rear section of the three gang variable tuning condenser to resonance. (See top view of chassis, Fig. 1, for location of this adjustment.)

(c) Re-set external oscillator to 600 K.C. and adjust broadcast series pad (Adjustment F') to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series pad maximum output is attained.

(d) Repeat adjustments "a" and "c" until sensitivity is at its maximum.

(e) Check for tracking and sensitivity at 1000 kilocycles. Under no circumstances bend plates of variable condenser sections to correct tracking.

**SHORT WAVE BAND ALIGNMENT:
5.5 to 18.1 Megacycles**

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

(a) Move dial pointer to 17 megacycles and adjust short wave oscillator (Adjustment G') and short wave antenna (Adjustment C) to resonance.

(b) Re-set external oscillator to 6 megacycles and pick up signal by rotating variable condenser and check sensitivity.

(c) Re-set external oscillator and check set at 18.1 megacycles and 5.5 megacycles for band coverage.

NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental. An example of this is an image of a fundamental 17 megacycle signal appears near 16.1 megacycles.

**MIDDLE WAVE BAND ALIGNMENT:
1750 to 5800 Kilocycles**

1. With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 5000 kilocycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

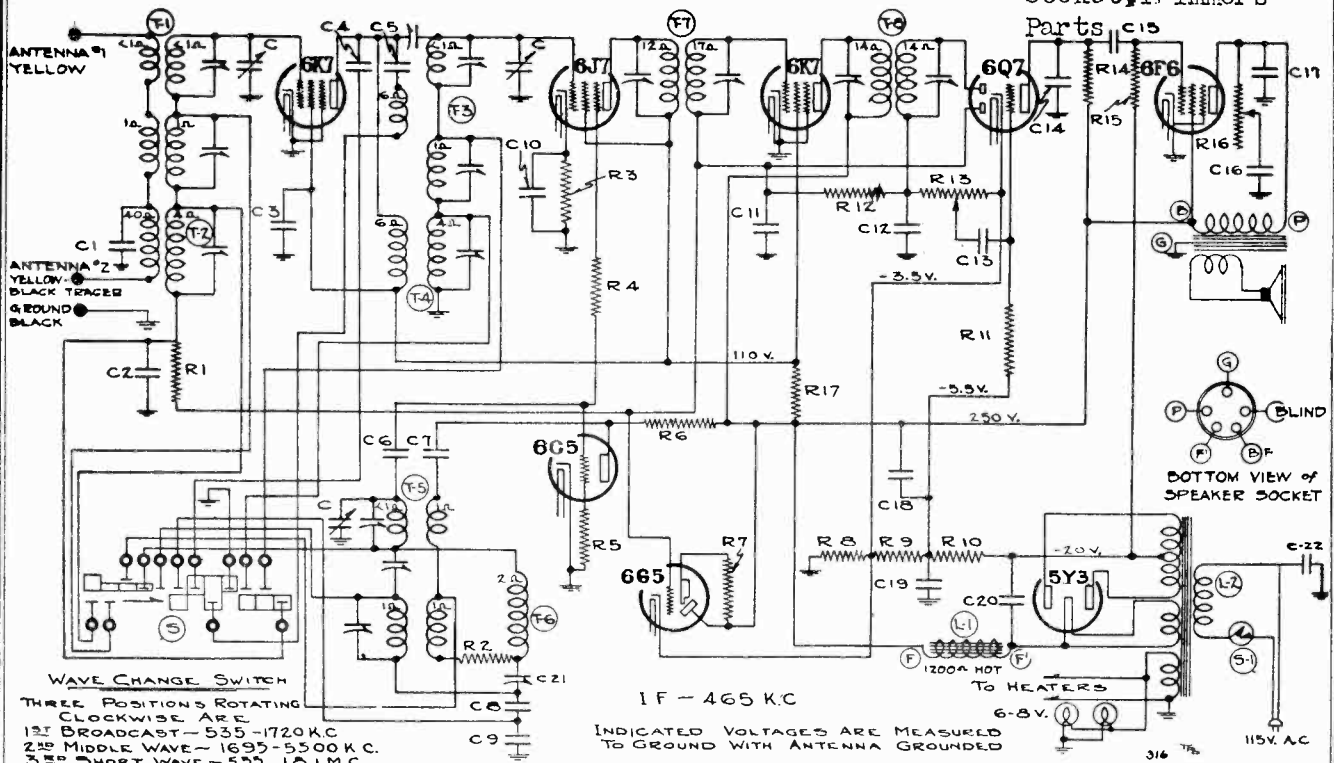
(a) Move dial pointer to 5000 kilocycles and adjust middle wave oscillator (Adjustment D') and middle wave antenna (Adjustment B) to resonance.

(b) Re-set external oscillator to 1900 kilocycles and pick up signal by rotating variable condenser and check sensitivity.

(c) Re-check broadcast band alignment.

BELMONT RADIO CORP

MODELS 888, 889
Schematic, Voltage
Socket, Trimmers
Parts, C15



RESISTORS

R1	130-103	100M ohm-1/3 w.-10%
R2	130-60	100 ohm-1/3 w.-20%
R3	130-159	2500 ohm-1/3 w.-10%
R4	130-60	100 ohm-1/3 w.-20%
R5	130-52	50M ohm-1/3 w.-20%
R6	130-77	10M ohm-1 w.-20%
R7	130-110	1 megohm-1/10 w.-10%
R8	106-33	55 ohm-Muter
R9	106-33	30 ohm-Muter
R10	106-33	240 ohm-Muter
R11	130-4	3 megohm-1/3 w.-20%
R12	130-38	2 megohm-1/3 w.-20%
R13	101-65	500M ohm-Volume Control
R14	130-103	100M ohm-1/3 w.-10%
R15	130-102	500M ohm-1/3 w.-10%
R16	101-53	50M ohm-Tone Control
R17	130-160	10M ohm-2 w.-Wire Wound 10%

NOTE: R8-R9-and R10 in one unit

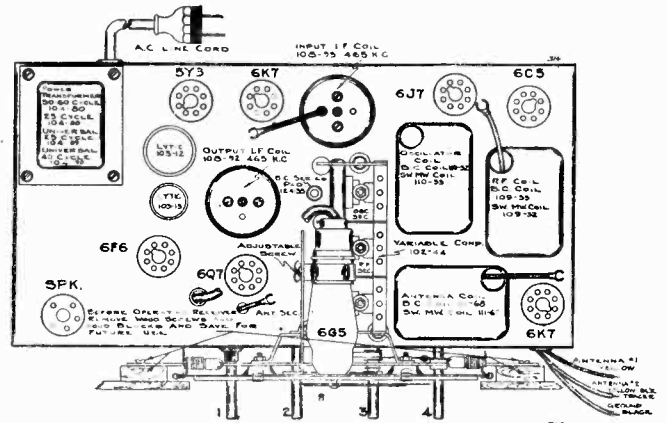
Part No. 106-33

CONDENSERS

C1	129-40	.0001 Mica-10%
C2	100-9	.05x200 v.-25%
C3	100-53	.25x400 v.-25%
C4	129-59	.0003 Mica-5%
C5	129-38	.00005 Mica-10%
C6	129-38	.00005 Mica-10%
C7	100-25	.002x600 v.-25%
C8	129-70	.004 Mica-2 1/2 %
C9	129-71	.002 Mica-2 1/2 %
C10	100-20	.1x200 v.-25%
C11	100-26	.02x400 v.-25%
C12	129-40	.0001 Mica-10%
C13	100-11	.01x400 v.-25%
C14	129-2	.0005 Mica-20%
C15	100-11	.01x400 v.-25%
C16	100-27	.025x600 v.-25%
C17	100-25	.002x600 v.-25%
C18	103-13	8.0x400 v.-Lytic
C19	100-20	.1x200 v.-25%
C20	103-12	8.0x275 v.-Lytic Regulating
C21	124-35	Series Pad
C22	100-61	.02x600 ±20%

PARTS

C	102-44	Section of three gang condenser
T1	111-67	MW-SW Antenna Coil Assembly
T2	111-68	Broadcast Antenna Coil Assembly
T3	109-32	MW-SW R. F. Coil Assembly
T4	109-33	B. C.-R. F. Coil Assembly
T5	110-53	M. W.-S. W. Oscillator Coil Assembly
T6	110-52	B. C. Osc. Coil Assembly
T7	108-93	Input I. F. Coil 465 kc.
T8	108-92	Output I. F. Coil 465 kc.
L1	114-56	Speaker 6"
L2	114-65	Speaker 10"-field Resistance-1200 ohm hot
L3	104-80	Power Transformer-50-60 cycles
S	125-25	Band Switch
S1	101-65	On-off switch on Volume Control



Vol. Control Tone Tuning Band
On-Off Switch Control Control Switch

MODELS 888,889

Alignment, Trimmers
Notes

BELMONT RADIO CORP.

- 1—Type 6K7 Remote cut-off pentode R.F. amplifier.
- 1—Type 6J7—pentode first detector.
- 1—Type 6C5 Oscillator.
- 1—Type 6K7 Remote cut-off pentode I.F. amplifier (465 K.C.)
- 1—Type 6Q7G duplex diode triode second detector, A.V.C. and audio.
- 1—Type 6F6G—pentode output amplifier.
- 1—Type 5Y3G or 5W4—high vacuum rectifier.
- 1—Type 6G5 Cathode ray tuning indicator.

SERVICE NOTES:

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

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

All voltages are to be measured with 115 volts on the primary of the power transformer.

Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagrams.

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

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

DUMMY ANTENNAS:

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the with the external oscillator.

Dummy 3: (Middle and Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS: (465 K.C.):

- Part No. 108-92 Output I.F. Transformer
- Part No. 108-93 Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:

- (a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1", to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-92) to resonance.
- (b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap of 6J7 and adjust input I.F. transformer (No. 108-93) to resonance.

BROADCAST BAND ALIGNMENT:

535 to 1720 Kilocycles

1. With band changing switch in the broadcast position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to antenna and ground leads make following adjustments:

- (a) Set external oscillator to 1720 K.C. and adjust broadcast oscillator trimmer to resonance. (Adjustment number 4; see bottom view of coil assembly, Fig. 3)
- (b) Re-set external oscillator to 1400 K.C., rotate variable gang condenser and pick up signal. Adjust broadcast R.F. trimmer (adjustment number 6) and broadcast antenna trimmer (adjustment number 7), to resonance.

- (c) Re-set external oscillator to 600 K.C., and adjust broadcast series pad (adjustment number 3), to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 3).
- (d) Repeat adjustments "a" and "b" until sensitivity is at its maximum.
- (e) Check for tracking and sensitivity at 1400, 1000, and 600 kilocycles. Under no circumstances bend plates of variable condenser sections to correct tracking.

SHORT WAVE BAND ALIGNMENT:

5.35 to 18.1 Megacycles

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the antenna and ground leads, make the following adjustments:

- (a) Move dial pointer to 17 megacycles and adjust short wave oscillator trimmer (adjustment number 1) to resonance.
- (b) Adjust short wave R.F. trimmer (adjustment number 8), and short wave antenna trimmer (adjustment number 9), to resonance.
- (c) Re-set external oscillator and check set at 18.1 megacycles and 6 megacycles for band coverage and sensitivity.

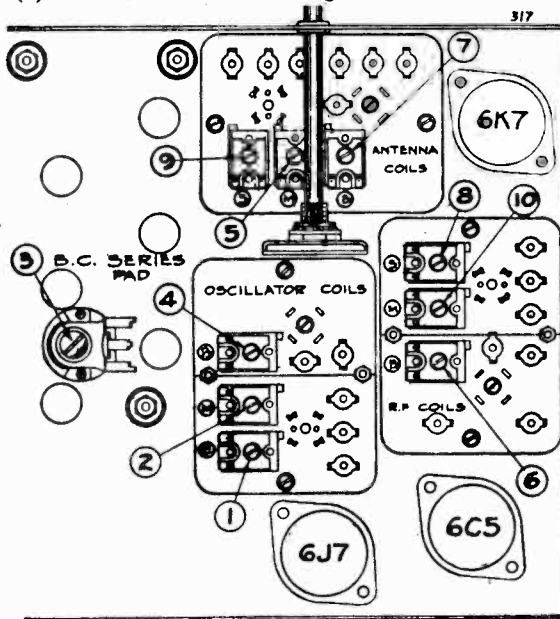
NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental on the receiver dial. As an example of this a fundamental 17 megacycle signal can be tuned in not only at 17 on the dial but also at approximately 16.1 megacycles.

MIDDLE WAVE BAND ALIGNMENT:

1695 to 5500 Kilocycles

1. With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 5 megacycles and connected in series with "Dummy 3" to the antenna and ground leads make the following adjustments:

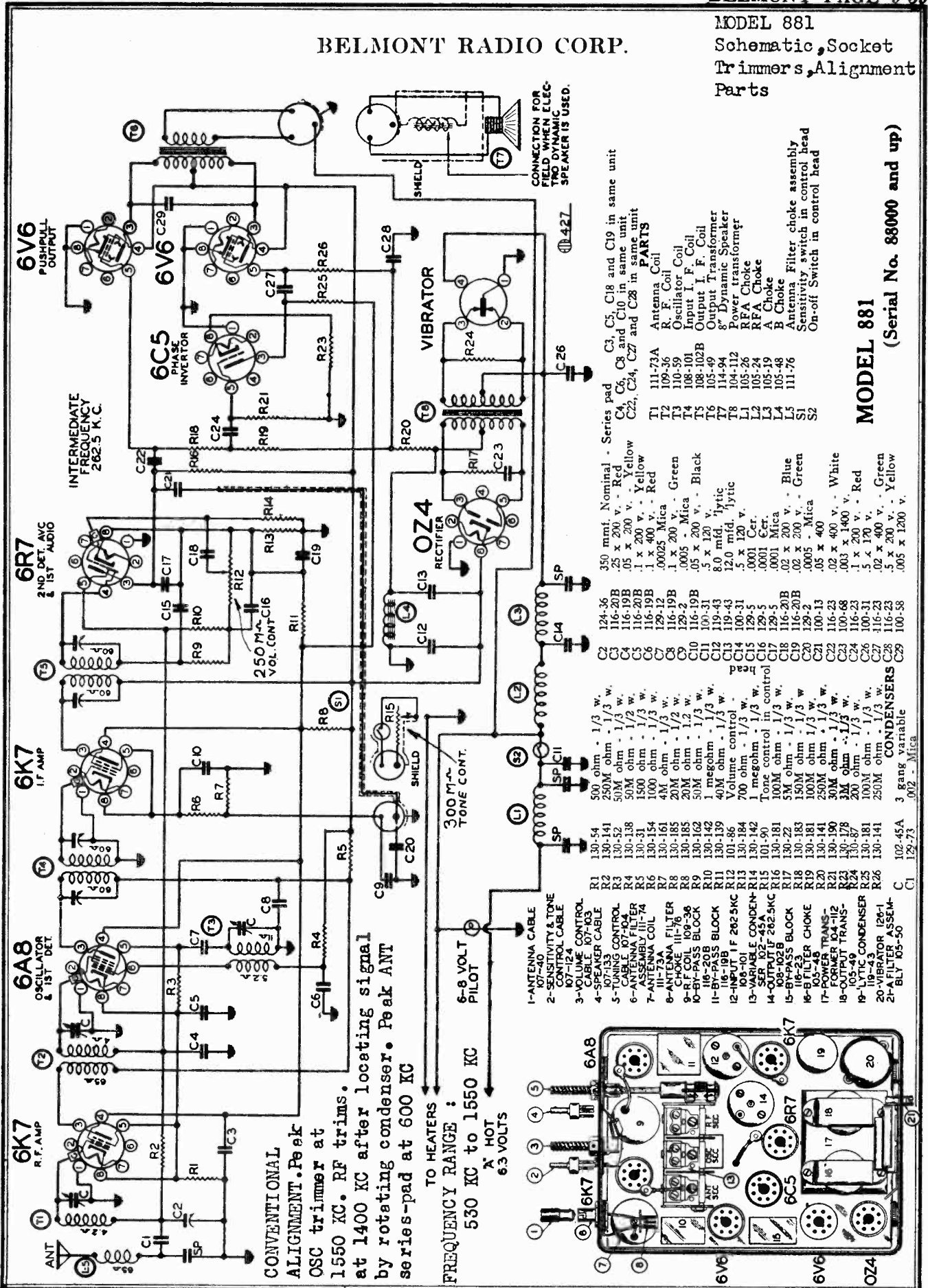
- (a) Move dial pointer to 5 megacycles and adjust middle wave oscillator trimmer (adjustment number 2) to resonance.
- (b) Adjust middle wave R.F. trimmer (adjustment number 10), and middle wave antenna trimmer (adjustment number 5), to resonance.
- (c) Re-set external oscillator and check sensitivity at 1800 kilocycles.
- (d) Recheck broadcast band alignment.



BOTTOM VIEW SHOWING TRIMMERS

BELMONT RADIO CORP.

MODEL 881
Schematic, Socket
Trimmers, Alignment
Parts



MODEL 910 Export
MODEL 1175
Alignment

BELMONT RADIO CORP.

DUMMY ANTENNAS: CHASSIS No. 910 Series A
The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1," "Dummy 2," and "Dummy 3."
Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.
Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.
Dummy 3: (Middle and Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS (465 K.C.)
Part No. 108119 Output I.F. Transformer
Part No. 108118 Input I.F. Transformer
These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (See Fig. 3).
1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), the tone control turned to treble position, the phono switch in number 1 position sharp, (counter clockwise), and with the variable condenser set to minimum capacity (plates entirely out of mesh), make the following adjustments:
(a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1," to the control grid cap of the type 6K7 I.F. tube and adjust the output I.F. transformer 108119 to resonance.
(b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap to 6A8 and adjust input I.F. transformer (108118) to resonance.

SHORT WAVE BAND ALIGNMENT:
8.0 to 24.0 Megacycles

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 22 Megacycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments: (See Fig. 3).
(a) Move dial pointer to 22 Megacycles and adjust short wave oscillator (adjustment C13), short wave R.F. (adjustment C7) and short wave antenna (adjustment C1) to resonance.
(b) Re-set external oscillator to 9 Megacycles and pick up signal by rotating variable condenser and check for sensitivity.
NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental. As an example of this a fundamental 22 megacycle signal can be tuned in not only at 22 on the dial, but also at approximately 21 megacycles.

MIDDLE WAVE ALIGNMENT:
2.35 to 7.0 Megacycles

1. With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 6 Megacycles connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments. (See Fig. 3).
(a) Rotate condenser, pick up signal and adjust middle wave oscillator (adjustment H), middle wave R.F. (adjustment E) middle wave antenna (adjustment B) to resonance.
(b) Re-check broadcast alignment and if it is found necessary; re-adjust either K.F. or antenna trimmers. Repeat the 17 megacycles short wave and 5 megacycles middle wave adjustments.

MIDDLE WAVE ALIGNMENT:
185 to 550 Kilocycles

1. With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 5 Megacycles connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:
(a) Rotate condenser, pick up signal and adjust middle wave oscillator (adjustment H), middle wave R.F. (adjustment E) middle wave antenna (adjustment B) to resonance.
(b) Re-check broadcast alignment and if it is found necessary; re-adjust either K.F. or antenna trimmers. Repeat the 17 megacycles short wave and 5 megacycles middle wave adjustments.

- (a) Rotate condenser, pick up signal and adjust middle wave oscillator (adjustment C14), middle wave R.F. (adjustment C8) middle wave antenna (adjustment C2) to resonance.
(b) Re-set external oscillator to 2.5 megacycles and pick up signal by rotating variable condenser and check sensitivity.

BROADCAST BAND ALIGNMENT:
540 to 1750 Kilocycles

1. With band changing switch in the broadcast position, extreme left of its rotation, and with external oscillator set at 1750 Kilocycles and connected in series with "Dummy 2" to the tan antenna and black ground lead, make the following adjustments. (See Fig. 3).
(a) Move dial pointer to 1750 Kilocycles and adjust broadcast oscillator trimmer (adjustment C15) to resonance.
(b) Re-set external oscillator to 1400 Kilocycles, move dial pointer to 1400 Kilocycles and adjust broadcast antenna trimmer, (adjustment C3) and broadcast R.F. trimmer (adjustment C9) to resonance.
(c) With external oscillator set at 600 K.C. adjust broadcast series pad (adjustment C21) to resonance with oscillator. Keep set in tune with oscillator by slowly rocking to and fro the variable condenser until maximum output is obtained.
(d) Repeat adjustments (a) and (c) until sensitivity is at its maximum.
(e) Check for tracking and sensitivity at 1000 Kilocycles.

UNDER NO CIRCUMSTANCES BEND PLATES OF VARIABLE CONDENSER TO CORRECT TRACKING.

MODEL 1175 SERIES A

DUMMY ANTENNAS:
The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1," "Dummy 2," and "Dummy 3."
Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.
Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with the external oscillator.
Dummy 3: (Middle and Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS (465 K.C.)
Part No. 108-114 Output I.F. Transformer
Part No. 108-113 Input I.F. Transformer
These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view Fig. 1).
1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), the tone control on "H", part of the sharp position (as much right rotation as possible without operating the Hi Fidelity switch), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:
(a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1," to the control grid cap of the

- (b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap to 6J7 and adjust input I.F. transformer (108-113) to resonance.
(c) With oscillator still connected to 6J7, re-adjust output I.F. transformer if necessary.

BROADCAST BAND ALIGNMENT:
535 to 1720 Kilocycles

1. With band changing switch in the broadcast position, extreme left of its rotation, and with external oscillator set at 1720 Kilocycles and connected in series with "Dummy 2" to the tan antenna and black ground lead, make the following adjustments:
(a) Move dial pointer to 1720 Kilocycles and adjust broadcast oscillator trimmer (adjustment I) to resonance. See bottom view, Fig. 3.
(b) Re-set external oscillator to 1400 Kilocycles, move dial pointer to 1400 Kilocycles and adjust broadcast antenna trimmer, (adjustment A) and broadcast R.F. trimmer (adjustment D) to resonance.
(c) With external oscillator set at 600 K.C. adjust broadcast series pad (adjustment J) to resonance with oscillator. Keep set in tune with oscillator by slowly rocking to and fro the variable condenser until maximum output is obtained.
(d) Repeat adjustments (a) and (c) until sensitivity is at its maximum.
(e) Check for tracking and sensitivity at 1000 Kilocycles.

UNDER NO CIRCUMSTANCES BEND PLATES OF VARIABLE CONDENSER TO CORRECT TRACKING.

SHORT WAVE BAND ALIGNMENT:
535 to 16.1 Megacycles

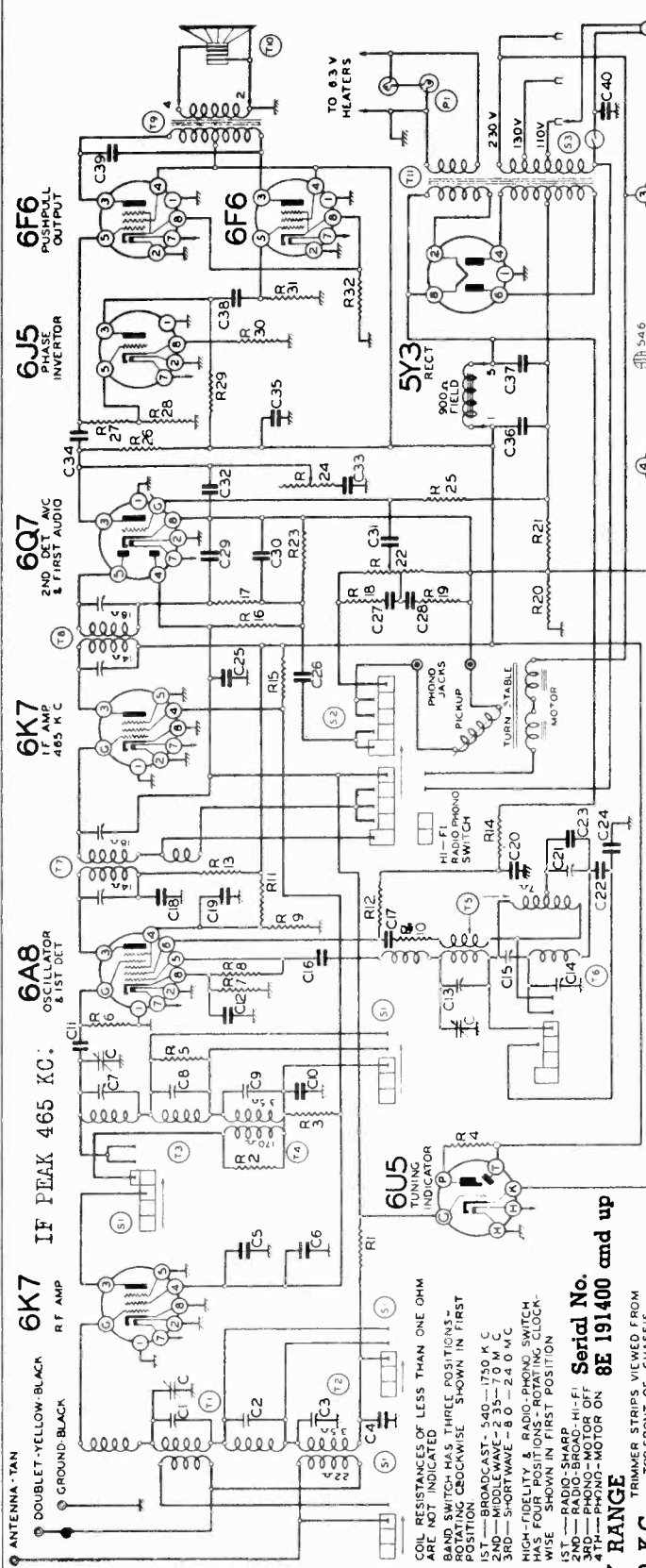
1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 Megacycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:
(a) Move dial pointer to 17 Megacycles and adjust short wave oscillator (adjustment G), short wave R.F. (adjustment F) and short wave antenna (adjustment C) to resonance.
(b) Re-set external oscillator to 6 Megacycles and pick up signal by rotating variable condenser and check for sensitivity.
NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental. As an example of this a fundamental 17 megacycle signal can be tuned in not only at 17 on the dial, but also at approximately 16.1 megacycles.

MIDDLE WAVE ALIGNMENT:
185 to 550 Kilocycles

1. With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 5 Megacycles connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:
(a) Rotate condenser, pick up signal and adjust middle wave oscillator (adjustment H), middle wave R.F. (adjustment E) middle wave antenna (adjustment B) to resonance.
(b) Re-check broadcast alignment and if it is found necessary; re-adjust either K.F. or antenna trimmers. Repeat the 17 megacycles short wave and 5 megacycles middle wave adjustments.

BELMONT RADIO CORP.

MODEL 910 Export
Schematic, Parts
Phono Notes



For conventional types of antennas connect the tan wire to the antenna lead and the yellow with black tracer and the black wire together to the ground lead.

When a doublet antenna is used connect the tan wire and the yellow with black tracer wire to the doublet antenna and the solid black wire to the ground lead. (See Fig. 1).

- FREQUENCY RANGE**
- 540 to 1750 K.C.
2.85 to 7.0 M.C.
8.0 to 24.0 M.C.
- CHASSIS No. 910 Series A**
- | Part No. | Diagram Reference | Description | Quantity |
|----------|-------------------------|---|----------|
| 10013 | C18 | .05x400 Volt Tubular Condenser | 1 |
| 10019 | C33 | .006x600 Volt Tubular Condenser | 1 |
| 10020 | C12 | 1x200 Volt Tubular Condenser | 1 |
| 10025 | C17, C39 | .002x600 Volt Tubular Condenser | 2 |
| 10026 | C25, C31, C34, C38 | .002x600 Volt Tubular Condenser | 4 |
| 10061 | C40 | .02x400 Volt (Bakelite Case Type) Condenser | 2 |
| 10074 | C3, C5 | .01x400 Volt Tubular Condenser (with Leads) | 2 |
| 10076 | C28 | .01x200 Volt Tubular Condenser | 1 |
| 10088 | C26 | .01x400 Volt Condenser (Braided Leads) | 2 |
| 11955 | C4, C6, C7, C8, C9, C10 | Dual 15 Mid Electrolytic Condenser, 450 w. v. | 1 |
| 11956 | C11 | Adjustable Trimmer Condenser, 3:30 w. v. | 1 |
| 12449 | C2, C3 | Adjustable Trimmer Strip (3 Gang) | 1 |
| 12450 | C7, C8, C9, C13 | Adjustable Trimmer Strip (7 Gang) | 1 |
| 1295 | C14, C15, C21 | .0001 Mica Type Condenser—20% | 3 |
| 12912 | C11 | .00025 Mica Type Condenser—20% | 1 |
| 12939 | C10 | .0005 Mica Type Condenser—20% | 1 |
| 12962 | C16 | .0003 Mica Type Condenser—10% | 1 |
| 129103 | C2 | .005 Mica Type Condenser—2 1/2% | 1 |
| 129104 | C23 | .005 Mica Type Condenser—5% | 1 |
| 129105 | C24 | .0035 Compression Type Condenser—2 1/2% | 1 |
| 129106 | C27 | .00155 Mica Type Condenser—20% | 1 |
| 1304 | R16, R25 | 3 Meg Ohm—1/2 Watt Resistor—20% | 1 |
| 13011 | R26 | 250 M Ohm—1/2 Watt Resistor—20% | 1 |
| 13021 | R19 | 20 M Ohm—1/2 Watt Resistor—20% | 1 |
| 13043 | R13 | 250 M Ohm—1/2 Watt Resistor—20% | 1 |
| 13048 | R1, R14 | 15 M Ohm—1/2 Watt Resistor—10% | 2 |

- COILS**
- Input I. F. Coil Assembly Complete with Can
Output I. F. Coil Assembly Complete with Can
Broad Wave R. F. Coil Assembly—Complete
Short Wave and Middle Wave R. F. Coil Assembly—Complete
Middle Wave Oscillator Coil Assembly, Complete
Broadcast and Short Wave Oscillator Coil Assembly, Complete
Broadcast Antenna Coil Assembly—Complete
Short Wave and Middle Wave Antenna Coil Assembly, Complete
- PHONOGRAM MOTOR:**
- On the underside of the chassis a terminal strip is provided for 220 volt phonograph motor connections.
- Connect the supply cord from the phonograph motor to the terminal strip through the hole on top of the chassis provided for this purpose. (See Fig. 1).
- Connections to the terminal strip are controlled by the radio-phonograph switch, knob no. 3 located on the front of the strip connections.
- Only a 220 volt motor can be operated from the terminal strip connections.

- CHASSIS No. 910 Series A**
- | No. Used in set | Color | Tolerance percent |
|-----------------|--------|-------------------|
| 1 | White | 5% |
| 1 | Green | 10% |
| 1 | Blue | 15% |
| 1 | Yellow | 20% |
| 1 | Red | 20% |
| 1 | None | More Than 20% |
- TRIMMER STRIPS VIEWED FROM TOP FRONT OF CHASSIS**
- | | | | | | | |
|-----|-----|-----|-----|----|----|----|
| C14 | C15 | C12 | C13 | C9 | C6 | C7 |
|-----|-----|-----|-----|----|----|----|

MODEL 910 Export
Socket Trimmers
Voltage Tuner

BELMONT RADIO CORP.

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

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

3-Band All-Wave A. C. High Fidelity Superheterodyne Receiver

CHASSIS No. 910
Series A

VOLTAGES AT SOCKETS

Antenna Shorted to Ground
Band Switch in B. C. Position

LINE VOLTAGE: 110 — Volume Control: Maximum
Readings taken with 1000 ohm-per-volt meter

TUBE	FUNCTION	Prong No. 1	Prong No. 2	Prong No. 3	Prong No. 4	Prong No. 5	Prong No. 6	Prong No. 7	Prong No. 8
6K7	R. F. Amplifier	0	6.3 (1)	85	95	0	220	6.3 (1)	0 (2)
6A8	Oscillator and First Detector	0	6.3 (1)	220	95	0	140	6.3 (1)	4
6K7	465 kc. I. F. Amplifier	0	6.3 (1)	220	95	0	220	6.3 (1)	0 (2)
6Q7	2nd detector, AVC and First Audio	0	6.3 (1)	90	0	0	0	6.3 (1)	(3)
6J5	Phase Inverter	0	6.3 (1)	135	220	0	0	6.3 (1)	6.9
6F6	Push pull Output	0	6.3 (1)	215	220	0	0	6.3 (1)	15
6F6	Push pull Output	0	6.3 (1)	215	220	0	0	6.3 (1)	15
5Y3	Rectifier	Plate to Ground	5 (4)	215	220	0	215	6.3 (1)	5 (4)
6Q5	Tuning Indicator	15	15	600 (5)	600 (5)	Target to Ground	Cathode to Ground	Across Heaters	6.3 AC

- (1) AC voltage as read across heater terminals 2 and 7
- (2) Bias (-3.0 volts) as read across Resistor R20
- (3) Bias (-1.5 volt) as read across Resistor R21
- (4) AC voltage as read across heater terminals 2 and 8
- (5) AC voltage as read across terminals 4 and 6

PROCEDURE FOR SETTING THE AUTOMATIC TUNER LEVERS:

IMPORTANT—READ CAREFULLY BEFORE SETTING THE AUTOMATIC LEVERS:

There are eight levers on the dial by means of which eight stations may be selected, (See "B", Fig. 2).

Make a list of local stations you tune in regularly; any number up to and including 8.

Punch out from the set of station call letter tabs supplied, the call letters of the stations you have selected.

Above each automatic tuner lever an opening in the escutcheon is provided for inserting the call letter tabs, (See "A", Fig. 2). Any order of grouping may be used, however, it is recommended that the right hand four automatic levers be used for high frequency stations (1750 to 1000 K.C.) and the left hand four automatic levers for low frequency stations (1000 to 540 K.C.).

Insert the call letter tabs in the rectangular openings in the escutcheon above each of the automatic tuner levers. One of the small celluloid tabs supplied should be snapped into place over each of the station call letter tabs.

Press DOWN ALL THE WAY any one of the automatic tuner levers. Holding it down FIRMLY, tune in by means of the tuning knob No. 5 the station indicated on the station call letter tab above this lever. Turn the tuning knob very slowly back and forth (while still holding lever in downward position), noting the width of the shadow indicated on the screen of the cathode-ray tuning eye. Minimum width on the eye indicates the ideal tuning position (resonance). The station will then be clearest and accurately tuned in. Release the lever.

Press down another automatic tuner lever. Holding it down FIRMLY, carefully tune in the station indicated on the call letter tab above this lever. Release this lever.

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

Rotate the tuning knob No. 5 to the right (clockwise) as far as it will turn. Now remove from the right side of the cabinet the metal button, and, with a screw driver inserted through the hole, tighten the locking adjustment screw "C". It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT. If a screw driver is not available, the locking screw can be tightened by reaching in from the back of the cabinet, rotate the locking screw shaft to the right (clockwise) until thoroughly tight.

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

If you should desire to change any station you have selected to another, loosen the locking screw "C" four or five complete turns; select the new station as explained. (Note: If the dial mechanism works hard when setting up a new station for one of the automatic tuner levers, it is due to the locking screw being too tight. Loosen the locking screw "C" until the dial mechanism works freely with the tuner lever pressed down.)

BE SURE TO RETIGHTEN THE LOCKING SCREW; otherwise the stations you have selected will not stay adjusted to the levers.

Three taps are provided, marked 110, 130 and 230. Set the tap on the transformer for various line voltages to conform with the following table:

- 110 tap: for line voltages of 100 to 125 volts.
- 130 tap: for line voltages of 125 to 145 volts.
- 230 tap: for line voltages of 210 to 250 volts.

Receivers of this model which are to be used on voltages or frequencies other than 110-130-230 volts, 40-60 cycles are so marked. The power consumption if this receiver is 110 watts. (See taps on top of power transformer.)

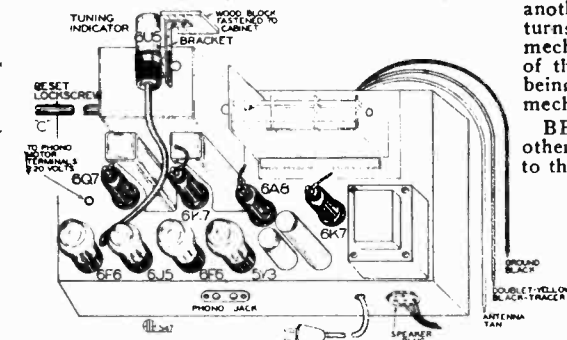


FIG. 1—TOP VIEW

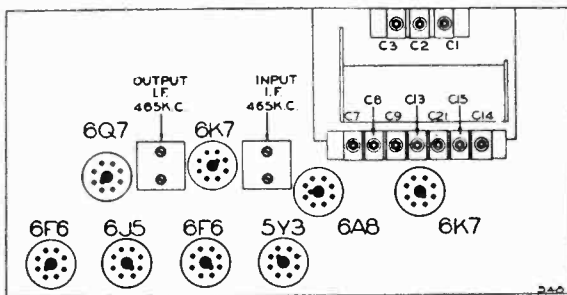


FIG. 3—VIEW SHOWING TRIMMERS

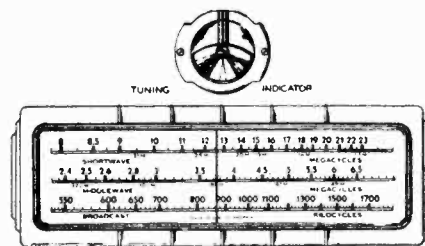
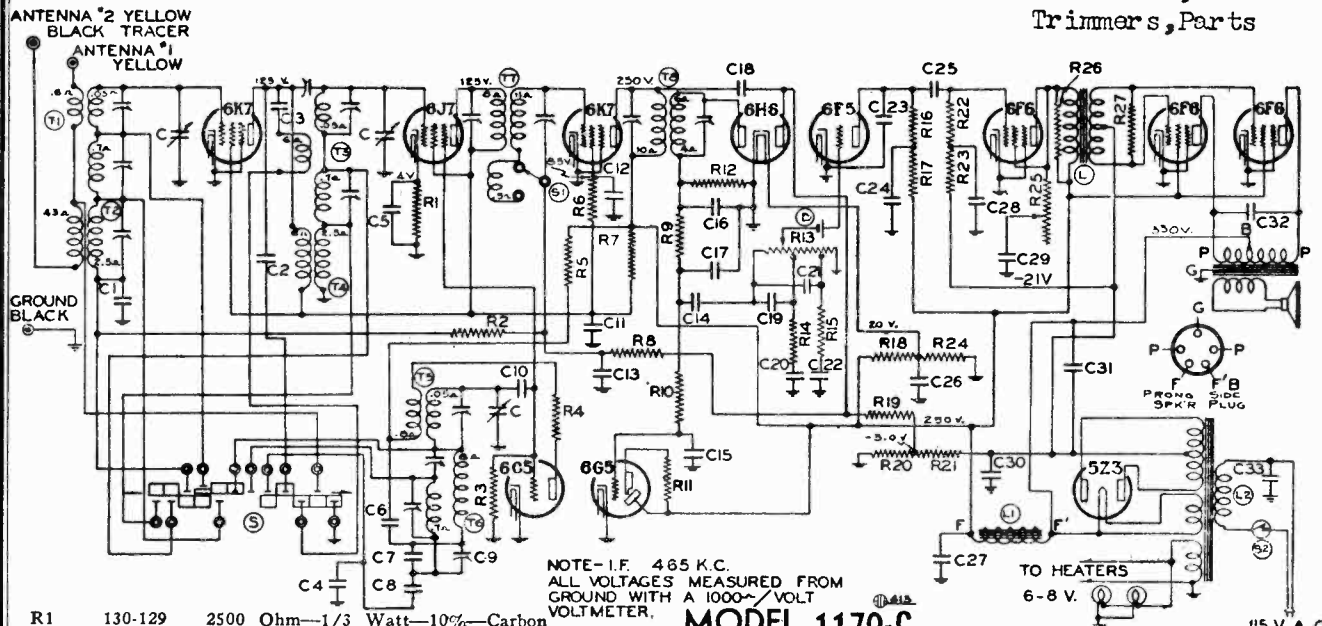


FIG. 2—FRONT VIEW

BELMONT RADIO CORP.

MODEL 1170C
Serial 7C561750 up
Schematic, Socket
Trimmers, Parts



NOTE—I.F. 465 K.C.
ALL VOLTAGES MEASURED FROM
GROUND WITH A 1000-Ω VOLT
VOLTMETER.

MODEL 1170-C

(Serial No. 7C561750 and up)

R1	130-129	2500 Ohm—1/3 Watt—10%—Carbon
R2	130-20	100M Ohm—1/3 Watt—20%—Carbon
R3	130-12	50M Ohm—1/3 Watt—20%—Carbon
R4	130-60	100 Ohm—1/3 Watt—20%—Carbon
R5	130-77	10M Ohm—1 Watt—20%—Carbon
R6	130-76	30M Ohm—1/3 Watt—20%—Carbon
R7	130-88	10M Ohm—2 Watt—20%—Wire Wound
R8	130-19	1 Megohm—1/3 Watt—20%—Carbon
R9	130-111	100M Ohm—1/3 Watt—20%—Carbon
R10	130-4	3 Megohm—1/3 Watt—20%—Carbon
R11	130-110	1 Megohm—1/10 Watt—10%—Carbon
R12	130-186	250M Ohm—1/10 Watt—20%—Carbon
R13	101-36	1 Megohm—Volume Control
R14	130-22	5M Ohm—1/3 Watt—20%—Carbon
R15	130-85	3M Ohm—1/3 Watt—20%—Carbon
R16	130-20	100M Ohm—1/3 Watt—20%—Carbon
R17	130-20	100M Ohm—1/3 Watt—20%—Carbon
R18	130-130	100M Ohm—1/2 Watt—10%—Carbon
R19	130-3	500M Ohm—1/3 Watt—20%—Carbon
R20	106-31	30 Ohm—Muter
R21	106-31	175 Ohm—Muter
R22	130-45	250M Ohm—1/3 Watt—20%—Carbon
R23	130-45	250M Ohm—1/3 Watt—20%—Carbon
R24	130-82	10M Ohm—1/3 Watt—10%—Carbon
R25	101-40	5000 Ohm—Tone Control
R26	130-131	20M Ohm—1/2 Watt—10%—Carbon
R27	130-21	20M Ohm—1/3 Watt—20%—Carbon

Note—R-20 and R-21 in one unit No. 106-31.
R-9 and R-12 in Output I. F. Can

C1	100-9	.05x200 Volt—25%
C2	129-59	.0003 Mica—5%—MT-O
C3	129-39	.00005 Mica—20%—MT-O
C4	129-69	.0023 Mica—2 1/2%—MT-O
C5	100-9	.05x200 Volt—25%
C6	100-13	.05x400 Volt—25%
C7	129-57	.0005 Mica—5%—MT-O
C8	129-55	.0034 Mica—2 1/2%—MT-O
C9	124-34	200 Mmf. Working Cap. Adjustable
C10	129-31	.000025 Mica—15%—MT-O Pad.
C11	100-41	.25x400 Volt—20%
C12	100-11	.01x400 Volt—25%
C13	100-9	.05x200 Volt—25%
C14	100-22	.05x200 Volt—25%
C15	100-11	.01x400 Volt—25%
C16	129-39	.00005 Ceramic—20%
C17	129-60	.00015 Mica—20%—MT-O
C18	129-3	.00002 Mica—20%—MT-O
C19	129-2	.0005 Mica—20%—MT-O
C20	100-22	.05x200 Volt—25%
C21	129-60	.00015 Mica—20%—MT-O
C22	100-22	.05x200 Volt—25%
C23	129-5	.0001 Mica—20%—MT-O
C24	100-1	.1x400 Volt—25%
C25	100-13	.05x400 Volt—25%
C26	100-19	.006x600 Volt—25%
C27	103-8	14 Mfd.—400 Volt—Electrolytic
C28	100-20	.1x200 Volt—25%
C29	100-45	.1x600 Volt—25%
C30	100-20	.1x200 Volt—25%
C31	103-10	30 Mfd.—450 Volt—Electrolytic
C32	100-32	.0005x1000 Volt—20%
C33	100-61	.02x600 Volt—Bakelite Micamold

Note—C16 in Output I. F. Can.

B1	116-22	Bias Cell
C	102-35	One Section of Three Gang Condenser
T1	111-54	MW and SW Antenna Coil Assem.
T2	111-55	Broadcast Antenna Coil Assem.
T3	109-29	MW and SW R.F. Coil Assem.
T4	109-30	Broadcast R.F. Coil
T5	110-42	MW and SW Osc. Coil Assem.
T6	110-43	Broadcast Osc. Coil Assem.
T7	108-64B	Input I. F. Coil—465 KC.
T8	108-63B	Output I. F. Coil—465 KC.
L	105-33	Audio Transformer
L1	114-47	Speaker (Field Resistance 1225 Ohm)
L2	104-72	Power Transformer (50-60 Cycle)
S	125-18	Band Switch
S1		Fidelity Switch on Tone Control
S2		On-Off Switch on Volume Control

FREQUENCY RANGE

535 to 1720 K.C. (Kilocycles)
1690 to 5300 K.C. (Kilocycles)
5.3 to 18.1 M.C. (Megacycles)

DIAL SCALE

Outer Scale
Center Scale
Inner Scale

BAND

Broadcast
Middle Wave
Short Wave

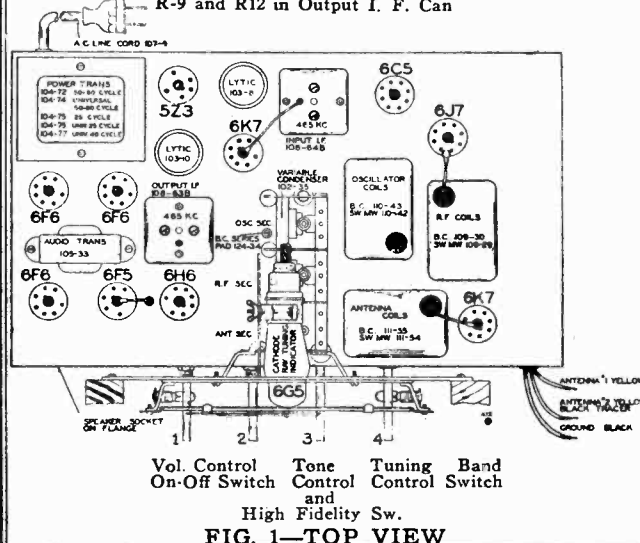


FIG. 1—TOP VIEW

MODEL 1170C

Trimmers Alignment

BELMONT RADIO CORP.

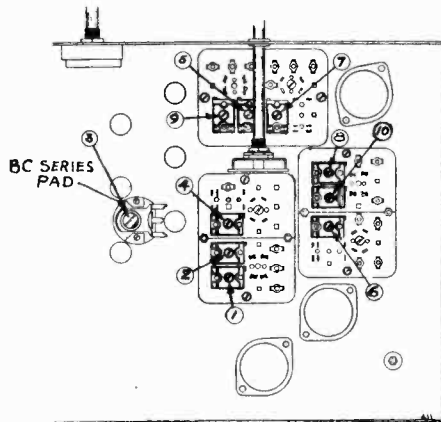


FIG. 3.—BOTTOM VIEW SHOWING TRIMMERS

ALIGNING INSTRUCTIONS:**CAUTION:**

No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltages, defective tubes, condensers and resistors. In order to properly align this chassis, an oscillator (generator) is absolutely necessary. No aligning adjustments should be attempted with the chassis in the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the four bolts by which it is fastened.

RESONANCE INDICATOR:

Use as a resonance indicator an output meter connected across the primary of the speaker input transformer or by means of an adapter between the plate and cathode terminals of the 5 prong speaker socket. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of the multi-range meter should be used.

DUMMY ANTENNAS:

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1," "Dummy 2," and "Dummy 3."

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Middle and Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

ALIGNING I.F. TRANSFORMERS (465 K.C.)

Part No. 108-63B Output I. F. Transformer
Part No. 108-64B Input I. F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view Fig. 1).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), the tone control on "Hi" part of the sharp position (as much right rotation as possible without operating the Hi Fidelity switch), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:

- (a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1," to the control grid cap of the

type 6K7 tube, located between the two I.F. transformers, and adjust the output I.F. transformer 108-63B to resonance.

- (b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap to 6J7 and adjust input I.F. transformer (108-64B) to resonance.
- (c) With oscillator still connected to 6J7, re-adjust output I.F. transformer if necessary.

BROADCAST BAND ALIGNMENT:

535 to 1720 Kilocycles

1. With band changing switch in the broadcast position, extreme left of its rotation, and with external oscillator set at 600 kilocycles and connected in series with "Dummy 2" to the tan antenna and black ground lead, make the following adjustments:

- (a) Adjust broadcast series pad (adjustment number 3) to resonance with oscillator. Keep set in tune with oscillator by slowly rocking to and fro the variable condenser until maximum output is obtained. Note: This adjustment is accessible from the top of the chassis and is located between the variable condenser and the 108-63 output I.F. transformer. See top view, Fig. 1.
- (b) Re-set external oscillator to 1400 K.C., move dial pointer to 1400 K.C. and adjust oscillator (adjustment number 4), R.F. (adjustment number 6) and antenna (adjustment number 7) to resonance. See bottom view for location of these adjustments, Fig. 3.
- (c) Repeat adjustments "a" and "b" until sensitivity is at its maximum.
- (d) Check for tracking and sensitivity at 1000 kilocycles. Under no circumstances bend plates of variable condenser to correct tracking.

SHORT WAVE BAND ALIGNMENT:

5.3 to 18.1 Megacycles

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

- (a) Move dial pointer to 17 megacycles and adjust short wave oscillator (adjustment number 1), short wave R.F. (adjustment number 8) and short wave antenna (adjustment number 9) to resonance.
- (b) Re-set external oscillator to 6 megacycles and pick up signal by rotating variable condenser and check for sensitivity.

NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental on the receiver dial. As an example of this a fundamental 18.3 megacycle can be tuned in not only at 18.3 on the dial, but also at approximately 17.4 megacycles.

MIDDLE WAVE BAND ALIGNMENT:

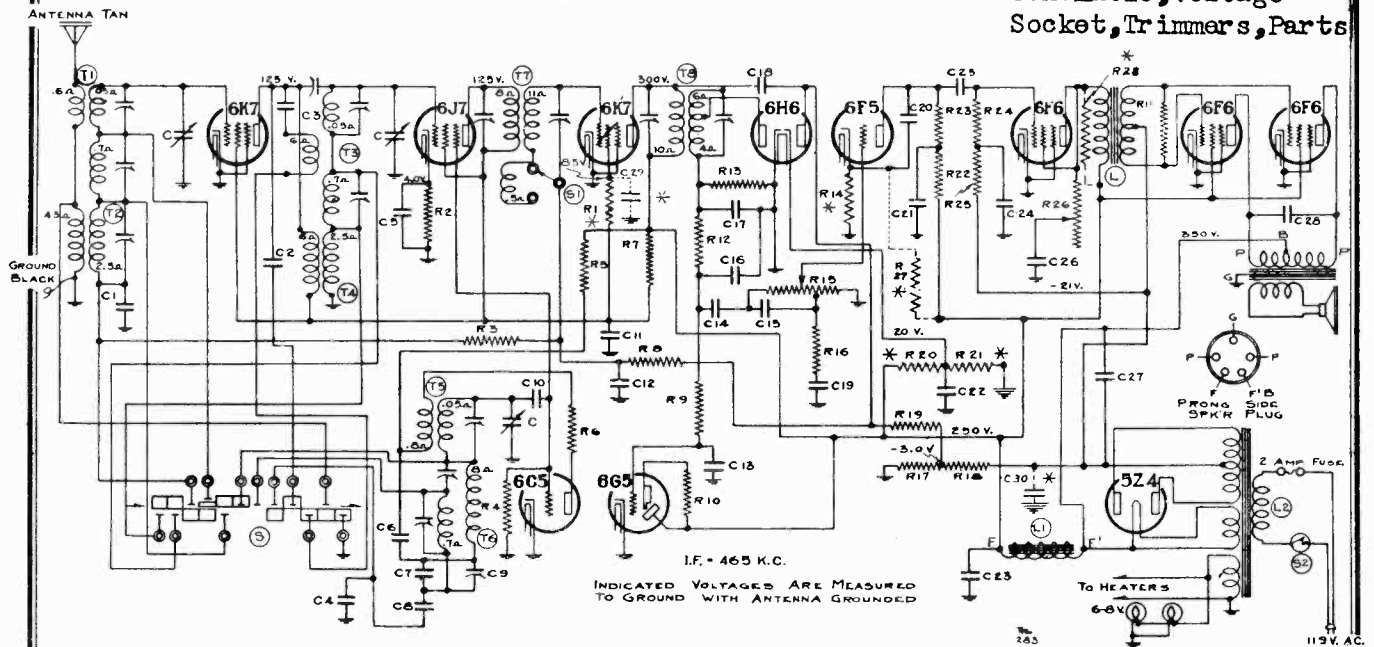
1690 to 5300 Kilocycles

1. With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 5 M.C. and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

- (a) Rotate condenser, pick up signal and adjust middle wave R.F. (adjustment number 10), middle wave antenna (adjustment number 5) and middle wave oscillator (adjustment number 2) to resonance.
- (b) Re-check broadcast alignment and if it is found necessary to re-adjust either R.F. or antenna trimmers, repeat the 17 M.C. short wave and 5 M.C. middle wave adjustments.

BELMONT RADIO CORP.

MODEL 1171 Series A
Schematic, Voltage
Socket, Trimmers, Parts



BAND CHANGE SWITCH
THREE POSITIONS. ROTATING
CLOCKWISE ARE:
1st BROADCAST: 535-1720 K.C.
2nd MIDDLE WAVE: 1690-5300 K.C.
3rd SHORT WAVE: 5.2-18.1 M.C.

I.F. - 465 K.C.
INDICATED VOLTAGES ARE MEASURED
TO GROUND WITH ANTENNA GROUNDING

TUNING RANGE—
Standard Broadcast Band
535-1720 Kilocycles.

Middle Wave Band
1690-5300 Kilocycles
Short Wave Band
5.2-18.1 Megacycles.

Part No.	Description
RESISTORS	
*R1 130-76	30M Ohm—1/2 Watt—20%—Carbon
R2 130-129	2500 Ohm—1/2 Watt—10%—Carbon
R3 130-20	100M Ohm—1/2 Watt—20%—Carbon
R4 130-12	50M Ohm—1/2 Watt—20%—Carbon
R5 130-77	10M Ohm—1 Watt—20%—Carbon
R6 130-60	100 Ohm—1/2 Watt—20%—Carbon
R7 130-88	10M Ohm—2 Watt—20%—Wire Wound
R8 130-19	1 meg Ohm—1/2 Watt—20%—Carbon
R9 130-4	3 meg Ohm—1/2 Watt—20%—Carbon
R10 130-110	1 meg Ohm—1/10 Watt—10%—Carbon
R11 130-21	20M Ohm—1/2 Watt—20%—Carbon
R12 130-20	100M Ohm—1/2 Watt—20%—Carbon
R13 130-20	100M Ohm—1/2 Watt—20%—Carbon
*R14 130-70	500 Ohm—1/2 Watt—10%—Carbon
R15 101-60	1 meg Ohm—Volume Control
R16 130-22	5M Ohm—1/2 Watt—20%—Carbon
R17 106-31	30 Ohm—Muter
R18 106-31	175 Ohm—Muter
R19 130-3	500M Ohm—1/2 Watt—20%—Carbon
*R20 130-130	100M Ohm—1/2 Watt—10%—Carbon
*R21 130-82	10M Ohm—1/2 Watt—10%—Carbon
R22 130-20	100M Ohm—1/2 Watt—20%—Carbon
R23 130-20	100M Ohm—1/2 Watt—20%—Carbon
R24 130-45	250M Ohm—1/2 Watt—20%—Carbon
R25 130-45	250M Ohm—1/2 Watt—20%—Carbon
R26 101-62	5000 Ohm Tone Control
*R27 130-130	100M Ohm—1/2 Watt—10%—Carbon
*R28 130-131	20M Ohm—1/2 Watt—10%—Carbon

NOTE: R17 and R18 in one Unit—No. 106-31.

CONDENSERS	
C1 100-9	.05 x 200 Volt—25%
C2 129-59	.0003 Mica—5%—MT—0
C3 129-39	.00005 Mica—20%—MT—0
C4 129-69	.0023 Mica—2 1/2%—MT—0
C5 100-9	.05 x 200 Volt—25%
C6 100-13	.05 x 400 Volt—25%
C7 129-57	.0005 Mica—5%—MT—0
C8 129-55	.0034 Mica—2 1/2%—MT—0
C9 124-34	200 mfd. Working cap. adjustable Pad
C10 129-31	.000025 Mica—15%—MT—0
C11 100-41	.25 x 400 Volt—20%
C12 100-9	.05 x 200 Volt—25%
C13 100-11	.01 x 400 Volt—25%
C14 100-22	.05 x 200 Volt—25%
C15 129-12	.00025 Mica—20%—MT—0
C16 129-60	.00015 Mica—20%—MT—0
C17 129-60	.00015 Mica—20%—MT—0
C18 129-3	.00002 Mica—20%—MT—0
C19 100-9	.05 x 200 Volt—25%
C20 129-5	.0001 Mica—20%—MT—0
C21 100-20	.1 x 200 Volt—25%
C22 100-19	.006 x 600 Volt—25%
C23 103-8	14 mid.—400 Volt—Electrolytic
C24 100-20	.1 x 200 Volt—25%
C25 100-13	.05 x 400 Volt—25%
C26 100-45	.1 x 600 Volt—25%
C27 103-10	30 mfd. x 450 Volt—Electrolytic
C28 100-32	.0005 x 1000 Volts—20%
*C29 100-11	.01 x 400 Volts—25%
*C30 100-20	.1 x 200 Volt—25%

PARTS	
C	102-37 One section of three gang condenser
TI	111-54 MW and SW Antenna Coil Assem.
T2	111-55 Broadcast Antenna Coil Assem.
T3	109-29 MW and SW R.F. Coil Assem.
T4	109-30 Broadcast R.F. Coil
T5	110-42 MW and SW Osc. Coil Assem.
T6	110-43 Broadcast Osc. Coil Assem.
T7	108-64 Input I.F. Coil—465 Kc.
T8	108-63 Output I.F. Coil—465 Kc.
L	105-33 Audio Transformer
L1	114-47C Speaker (Field Resist. 1225 ohm) Hot
L2	104-72 Power Transformer (50-60 Cycle)
S	125-18 Band Switch
S1	101-40 Fidelity Switch on Tone Control
S2	101-47 On-Off Switch on Volume Control

NOTE: Resistors and Condensers which are prefixed with an asterisk (*) on the circuit diagram and parts list were added or the values changed during production to meet certain conditions. Resistors R1, R27, R28, and Condensers C29, C30 were added to correct certain variances of tube characteristics. Resistors R14, R20, R21 the values were changed. In some chassis the values of these resistors are as follows:
R14—2500 Ohm—1/2 Watt
R20—200M Ohm—1/2 Watt
R21—20M Ohm—1/2 Watt
Present values of these resistors are:
R14—500 Ohm—1/2 Watt
R20—100M Ohm—1/2 Watt
R21—10M Ohm—1/2 Watt

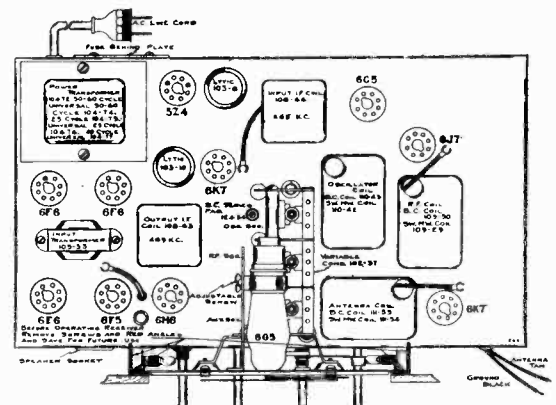
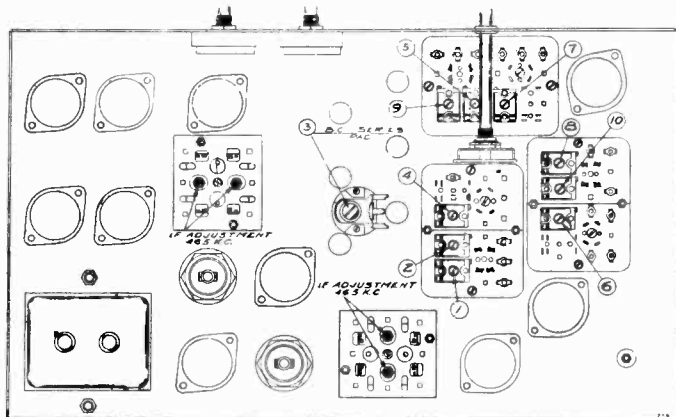


FIG. 1—BOTTOM VIEW SHOWING TRIMMERS

MODEL 1171 Series A
Alignment Notes

BELMONT RADIO CORP.

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 25, 40 and 60 cycles and with primary taps for 108, 127, 150, 225, and 260 volts, (see instructions) and also sometimes equipped with 25 cycle transformers with 105-115 volt or 220 volt primaries, not universals.

SERVICE NOTES

NOTE:

Attention is called to the circuit diagram contained in this manual. Several minor changes were made during production of this model to correct certain conditions. These changes are shown on the circuit diagram in dotted lines and explained in detail. Some of the chassis were equipped with 5Z3 rectifier tubes in place of the 5Z4 and do not have a fuse assembly in the power line.

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

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

All voltages are to be measured with 115 volts on the primary of the power transformer.

Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagrams.

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

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

This chassis is protected against damage from faulty tubes or abnormal line conditions by a fuse in the primary circuit.

If when set is turned on pilot lights do not light, look for a blown fuse.

This fuse is made accessible for replacement by removing fuse cover located on back flange of chassis, replace only with a 2 ampere fuse. If replacement fuse blows out, check tubes, (particularly 5Z4 rectifier) circuit, repair or replace defective tubes or parts.

NEVER ATTEMPT TO REPLACE FUSE WITHOUT FIRST DISCONNECTING POWER.

NEVER REPLACE WITH FUSE OTHER THAN 2 AMPERE RATING.

ALIGNING INSTRUCTIONS
Dummy Antennas

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Intermediate and Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

Resonance Indicator:

Use as a resonance indicator an output meter connected across the primary of the speaker input transformer or by means of an adapter between the plate and cathode terminals of the 5 prong speaker socket. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range meter should be used.

CAUTION:

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

with the chassis in the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the four bolts by which it is fastened.

ALIGNING I.F. TRANSFORMERS (465 K.C.)

Part No. 108-63 Output I.F. Transformer
Part No. 108-64 Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the underside of chassis (see bottom view Fig. 1).

1. With volume control full on, (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), the tone control on "Hi" part of the sharp position (as much right rotation as possible without operating the Hi Fidelity switch), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:
 - (a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1", to the control grid cap of the type 6K7 tube, located between the two I.F. transformers, and adjust the output I.F. transformer 108-63 to resonance.
 - (b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap to 6J7 and adjust input I.F. transformer (108-64) to resonance.
 - (c) With oscillator still connected to 6J7, re-adjust output I.F. transformer if necessary.

ALIGNMENT PROCEDURE

The following adjustments to be made after the I.F.'s have been aligned as explained above.

BROADCAST BAND ALIGNMENT:

1. With band changing switch in the broadcast position, extreme left of its rotation, and with external oscillator set at 600 kilocycles and connected in series with "Dummy 2" to the tan antenna and black ground lead, make the following adjustments:
 - (a) Adjust broadcast series pad (adjustment number 3) to resonance with oscillator. Keep set in tune with oscillator by slowly rocking to and fro the variable condenser until maximum output is obtained. Note: This adjustment is accessible from the top of the chassis and is located between the variable condenser and the 108-63 output I.F. transformer. See top view, Fig. 3.
 - (b) Re-set external oscillator to 1400 K.C., move dial pointer to 1400 K.C. and adjust oscillator (adjustment number 4), R.F. (adjustment number 6) and antenna (adjustment number 7) to resonance. See bottom view for location of these adjustments, Fig. 1.
 - (c) Repeat adjustments "a" and "b" until sensitivity is at its maximum.

NOTE: IT IS EXTREMELY NECESSARY IN MAKING ALL OF THESE ADJUSTMENTS THAT THE FUNDAMENTAL OSCILLATOR SIGNAL BE TUNED IN AND NOT THE IMAGE FREQUENCY WHICH WILL FALL BELOW THE FUNDAMENTAL.

SHORT WAVE BAND ALIGNMENT:

1. With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:
 - (a) Move dial pointer to 17 megacycles and adjust short wave oscillator (adjustment number 1), short wave R.F. (adjustment number 8) and short wave antenna (adjustment number 9) to resonance.
 - (b) Re-set external oscillator to 6 megacycles and pick up signal by rotating variable condenser and check for sensitivity.

MIDDLE WAVE BAND ALIGNMENT:

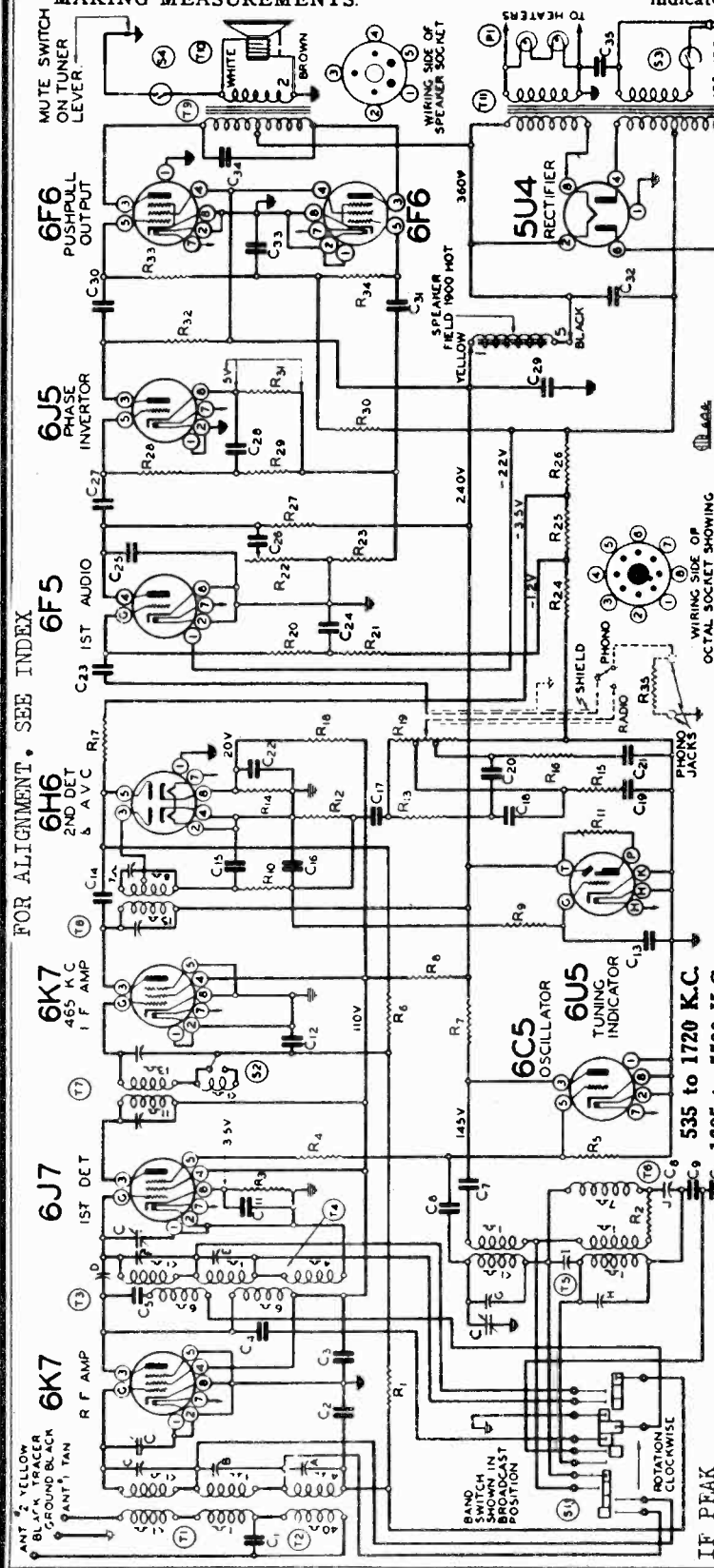
1. With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 5 M.C. and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:
 - (a) Rotate condenser, pick up signal and adjust middle wave R.F. (adjustment number 10), middle wave antenna (adjustment number 5) and middle wave oscillator (adjustment number 2) to resonance.
 - (b) Re-check broadcast alignment and if it is found necessary to re-adjust either R.F. or antenna trimmers, repeat the 17 M.C. short wave and 5 M.C. middle wave adjustments.

BELMONT RADIO CORP.

MODEL 1175 Series A Schematic, Voltage Parts

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

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



FOR ALIGNMENT, SEE INDEX

Table listing parts for Series A (Serial No. 7M920500 and up), including resistors (R1-R35), capacitors (C1-C35), and transformers (T1-T11) with their respective values and tolerances.

Table listing parts for Chassis Model 1175, including resistors (R1-R35), capacitors (C1-C35), and transformers (T1-T11) with their respective values and tolerances.

Table listing parts for the IF Peak section, including resistors (R1-R35), capacitors (C1-C35), and transformers (T1-T11) with their respective values and tolerances.

Receivers of this model which are to be used on voltages or frequencies other than 105-115 volts, 60 cycles are so marked. The power consumption of this receiver is 125 watts.

All voltages are to be measured with 115 volts on the primary of the power transformer.

For conventional types of antennas connect the tan wire to the antenna lead and the yellow with black tracer and the black wire together to the ground lead. (See Fig. 1—Top View).

MODEL 1175 Series A
Trimmers, Tuner

BELMONT RADIO CORP.

PROCEDURE FOR SETTING THE AUTOMATIC TUNER LEVERS:

IMPORTANT—READ CAREFULLY BEFORE SETTING THE AUTOMATIC LEVERS:

A mute feature has been incorporated in the automatic tuning mechanism of the Model 1175. The function of this feature is to permit SILENT TUNING from one station to another by means of the automatic tuning levers. When any one of the levers are pressed down, the speaker is automatically disconnected from the radio and NO SIGNAL is heard until the lever is RELEASED.

To facilitate an accurate adjustment of the levers it is desirable to hear the station being tuned in while the lever is being adjusted; therefore a MUTE SWITCH is provided to manually connect or disconnect the silent tuning feature.

Referring to the top view of the radio (Fig. 1 in this manual), THE POSITION OF THE SWITCH (located on the top of the radio chassis alongside the power transformer), IS IMPORTANT.

Set the switch as follows:

WHILE SETTING THE AUTOMATIC LEVERS:

Switch should be snapped to the right (white dot not visible).

AFTER AUTOMATIC LEVERS HAVE BEEN SET:

Switch should be snapped to the left (white dot showing).

There are eight levers on the dial by means of which eight stations may be selected, (See "B", Fig. 2).

Make a list of local stations you tune in regularly; any number up to and including 8.

Punch out from the set of station call letter tabs supplied, the call letters of the stations you have selected.

Above each automatic tuner lever an opening in the escutcheon is provided for inserting the call letter tabs, (See "A" Fig. 2). Any order of grouping may be used, however, it is recommended that the left hand four automatic levers be used for high frequency stations (1750 to 1000 K.C.) and the right hand four automatic levers for low frequency stations (1000 to 540 K.C.).

Insert the call letter tabs in the rectangular openings in the escutcheon above each of the automatic tuner levers. One of the small celluloid tabs supplied should be snapped into place over each of the station call letter tabs.

Press DOWN ALL THE WAY any one of the automatic tuner levers. Holding it down FIRMLY, tune in by means of the tuning knob No. 4 the station indicated on the station call letter tab above this lever. Turn the tuning knob very slowly back and forth (while still holding lever in downward position), noting the width of the shadow indicated on the screen of the cathode-ray tuning eye. Minimum width on the eye indicates the ideal tuning position (resonance). The station will then be clearest and accurately tuned in. Release the lever.

Press down another automatic tuner lever. Holding it down FIRMLY, carefully tune in the station indicated on the call letter tab above this lever. Release this lever.

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

Rotate the tuning knob No. 4 to the right (clockwise) as far as it will turn. Now remove from the right side of the cabinet the metal button, and, with a screw driver inserted through the hole, tighten the locking adjustment screw "C". It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT. If a screw driver is not available, the locking screw can be tightened by reaching in from the back of the cabinet, and, by means of the pin "D" (see Fig. 1), rotate the locking screw shaft to the right (clockwise) until thoroughly tight.

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

If you should desire to change any station you selected to another, loosen the locking screw "C" four or five complete turns; select the new station as explained. (Note: If the dial mechanism works hard when setting up a new station for one of the automatic tuner levers, it is due to the locking screw being too tight. Loosen the locking screw "C" until the dial mechanism works freely with the tuner lever pressed down.)

BE SURE TO RETIGHTEN THE LOCKING SCREW; otherwise the stations you have selected will not stay adjusted to the levers.

Snap mute switch to silent tuning position (white dot showing)

- 1—Type 6K7 Remote cut-off pentode I.F. amplifier
- 1—Type 6H6 Duplex diode second detector and A.V.C.
- 1—Type 6F5 First audio amplifier
- 1—Type 6J5 Phase Inverter stage
- 2—Type 6F6 Output pentodes in push-pull
- 1—Type 5U4 High vacuum rectifier
- 1—Type 6U5 Cathode-Ray Tuning Indicator.

- The tube complement of this chassis consists of the following metal and octal base glass tubes which are interchangeable with metal tubes:
- 1—Type 6K7 Remote cut-off pentode R.F. amplifier
 - 1—Type 6I7 Pentode first detector
 - 1—Type 6C5 Oscillator

MODEL 1175 SERIES A
(Serial No. 7M920500 and up)

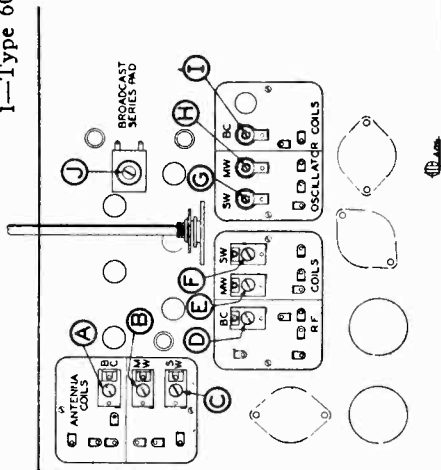


FIG. 3.—BOTTOM VIEW SHOWING TRIMMERS

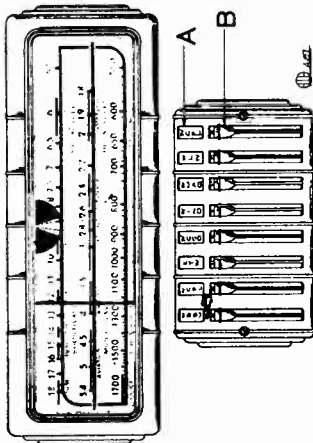


FIG. 2.—FRONT VIEW

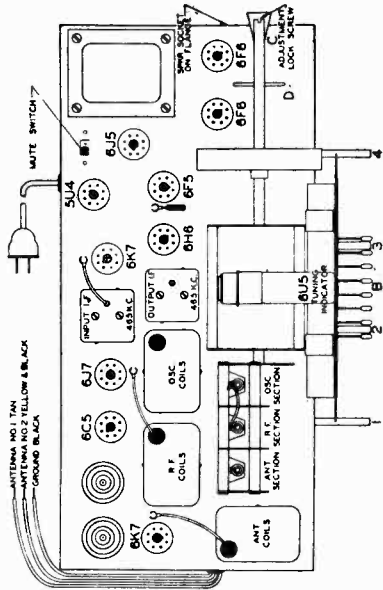
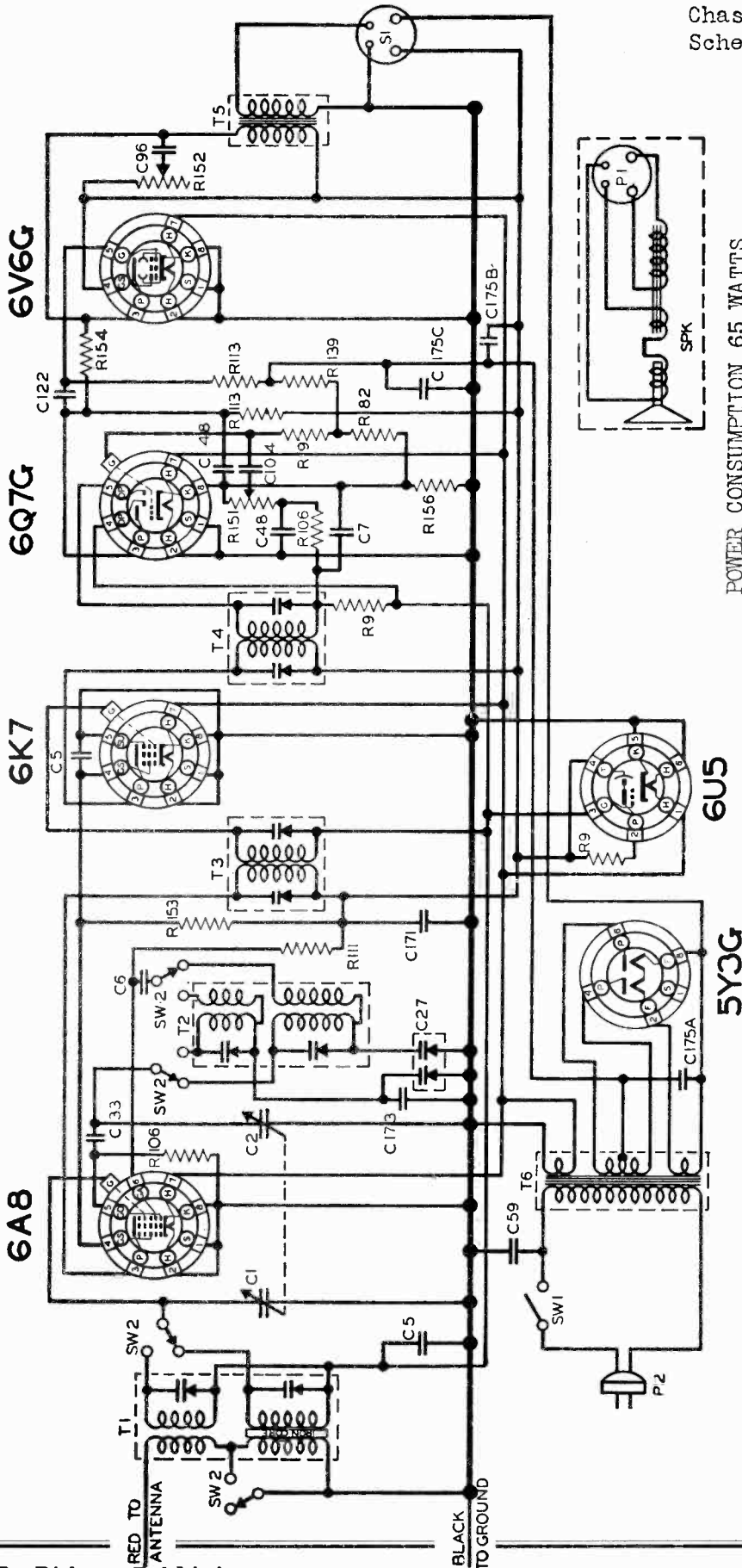


FIG. 1.—TOP VIEW

BRUNSWICK DIV. MERSMAN BROS. CORP. 3689, 4689, 5689

MODELS 1669, 1689, 2669, 2689
Chassis M27
Schematic, Alignment, Parts

SCHEMATIC CIRCUIT DIAGRAM
BRUNSWICK RADIO CHASSIS M27*



POWER CONSUMPTION 65 WATTS

RESISTORS		CONDENSERS		TRANSFORMERS		MISCELLANEOUS UNITS	
R	OHMS	C	CAPACITY	T	TYPE	SYMBOL	DESCRIPTION
9	1M	1	TWO-GANG	1	ANTENNA COIL	L	DIAL LIGHT BLB
82	30	2	VARIABLE	2	OSCILLATOR COIL	PI	SPEAKER PLUG
106	50K	5	.05	3	FIRST I.F. COIL	P2	AC LINE CORD & PLUG ASSEMBLY
111	20K	6	.002	4	SECOND I.F. COIL	SPK	SPEAKER SOCKET
113	250K	7	.0001	5	OUTPUT TRANS.	SW1	SPEAKER (SEE MODEL)
139	100	27	DOUBLE PAD.	6	POWER TRANS.	SW2	AC LINE SWITCH
151	.5M	48	.00025				BAND SWITCH
152	100K	VC	17-16008				
153	30K	TC	17-14615				
154	1.5M	VC	17-14244				
156	35	VC	17-14246				
		33	.00005				

MODEL NO.	SPEAKER PART NO.
M27-6	17-10044
M27-6	17-10047
M27-10	17-10048

I. F. PEAK 455 K. C.
BALANCE AT 1500K. C.
SHORTWAVE BALANCE AT 600K. C.
SHORTWAVE BALANCE AT 15M. C.
CHECK AT 7M. C.

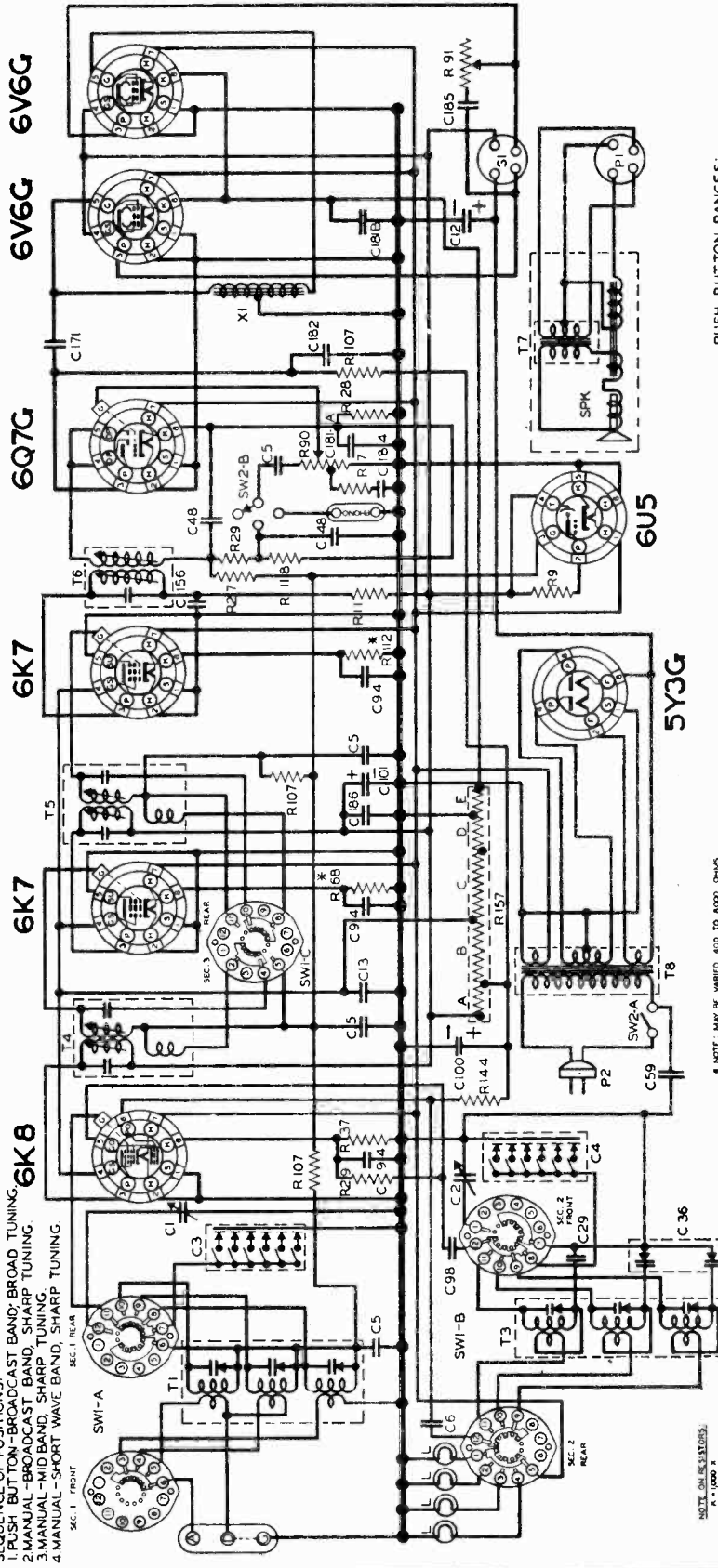
THE MERSMAN BROS. CORPORATION, INC.
206 LEXINGTON AVE., NEW YORK, N.Y.

MODEL 8109
Chassis M31
Schematic, Alignment
Parts

BRUNSWICK DIV. MERSMAN BROS. CORP.

SCHEMATIC CIRCUIT DIAGRAM
BRUNSWICK RADIO CHASSIS M31

SWITCH SHOWN IN PUSH-BUTTON TUNING POSITION.
SEQUENCE OF POSITIONS:
1. PUSH-BUTTON-BROADCAST BAND; BROAD TUNING.
2. MANUAL-BROADCAST BAND; SHARP TUNING.
3. MANUAL-MID BAND; SHARP TUNING.
4. MANUAL-SHORT WAVE BAND; SHARP TUNING.



PUSH BUTTON RANGES:
READING FROM LEFT TO RIGHT.
1. 540 TO 1000 K.C.
2. 550 TO 1050 K.C.
3. 565 TO 1050 K.C.
4. 725 TO 1360 K.C.
5. 750 TO 1440 K.C.
6. 1000 TO 1600 K.C.
I.F. PEAK 455 K.C.
BALANCE 1.4MC. PAD .60MC.
BALANCE 5.0MC. CHECK 2.0 MC.
BALANCE 15.0MC. CHECK 60MC.

THE MERSMAN BROS. CORPORATION, INC.
206 LEXINGTON AVE., NEW YORK, N.Y.

RESISTORS		CONDENSERS		TRANSFORMERS & CHOKES		MISCELLANEOUS UNITS	
TYPE	VALUE	TYPE	VALUE	TYPE	DESCRIPTION	TYPE	DESCRIPTION
1	100K	1	500P	1	ANTENNA COIL	1	VAL. LIGHT BULB - MADA * 17-13024
2	500K	2	1000P	2	OSCILLATOR COIL	2	SPEAKER PLUG PI
3	1M	3	5000P	3	FIRST I.F. COIL	3	SPEAKER SOCKET S1
4	5M	4	10000P	4	SECOND I.F. COIL	4	SW1 BROADCAST BAND PUSH-BUTTON A
5	10M	5	50000P	5	THIRD I.F. COIL	5	SW2 MANUAL TUNING SWITCH
6	50M	6	100000P	6	POWER TRANS.	6	SW2 A.C. PHONO SWITCH 17-10014
7	100M	7	500000P	7	CHOKES		
8	500M	8	1000000P	8	INPUT CHOKE		
9	1000M	9	5000000P				
10	5000M	10	10000000P				
11	10000M	11	50000000P				
12	50000M	12	100000000P				
13	100000M	13	500000000P				
14	500000M	14	1000000000P				
15	1000000M	15	5000000000P				
16	5000000M	16	10000000000P				
17	10000000M	17	50000000000P				
18	50000000M	18	100000000000P				
19	100000000M	19	500000000000P				
20	500000000M	20	1000000000000P				
21	1000000000M	21	5000000000000P				
22	5000000000M	22	10000000000000P				
23	10000000000M	23	50000000000000P				
24	50000000000M	24	100000000000000P				
25	100000000000M	25	500000000000000P				
26	500000000000M	26	1000000000000000P				
27	1000000000000M	27	5000000000000000P				
28	5000000000000M	28	10000000000000000P				
29	10000000000000M	29	50000000000000000P				
30	50000000000000M	30	100000000000000000P				
31	100000000000000M	31	500000000000000000P				
32	500000000000000M	32	1000000000000000000P				
33	1000000000000000M	33	5000000000000000000P				
34	5000000000000000M	34	10000000000000000000P				
35	10000000000000000M	35	50000000000000000000P				
36	50000000000000000M	36	100000000000000000000P				
37	100000000000000000M	37	500000000000000000000P				
38	500000000000000000M	38	1000000000000000000000P				
39	1000000000000000000M	39	5000000000000000000000P				
40	5000000000000000000M	40	10000000000000000000000P				
41	10000000000000000000M	41	50000000000000000000000P				
42	50000000000000000000M	42	100000000000000000000000P				
43	100000000000000000000M	43	500000000000000000000000P				
44	500000000000000000000M	44	1000000000000000000000000P				
45	1000000000000000000000M	45	5000000000000000000000000P				
46	5000000000000000000000M	46	10000000000000000000000000P				
47	10000000000000000000000M	47	50000000000000000000000000P				
48	50000000000000000000000M	48	100000000000000000000000000P				
49	100000000000000000000000M	49	500000000000000000000000000P				
50	500000000000000000000000M	50	1000000000000000000000000000P				

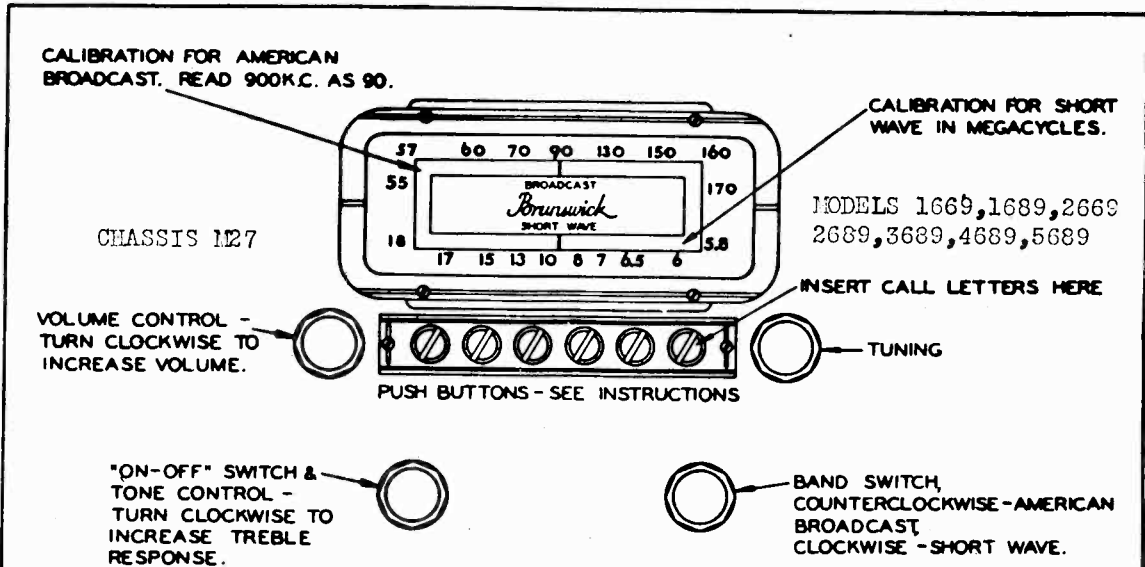
NOTE: ON RESISTORS:
A = 1000 X
M = 100000 X

NOTE R157:
A = 450 OHMS
B = 150 OHMS
C = 45 OHMS
D = 15 OHMS
E = 4.5 OHMS

POWER CONSUMPTION 110 WATTS

BRUNSWICK DIV. MERSMAN BROS. CORP.

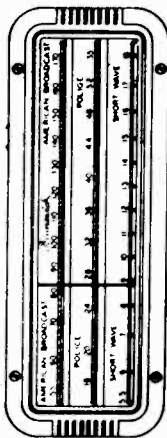
MODELS 1669, 1689, 2669, 2689
3689, 4689, 5689
MODEL 8109
Tuner Data



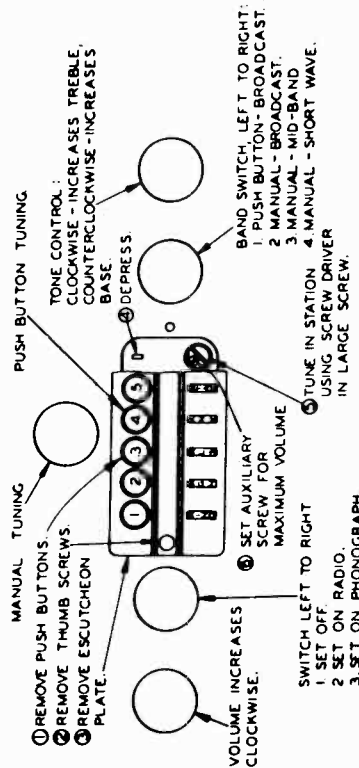
Push Button Set-up:

Any button may be set up for any station desired. First, tune in the station it is desired to set up on one of the buttons by means of the manual tuning control. Second, turn the push button counter-clockwise two full turns. Then depress this button the full length of its stroke, and while depressed, tighten the button again by turning it clockwise. The button may now be released. To check the correct setting for this button, turn the manual control to some other point and depress the

push button. This will return the tuning mechanism to the station just set up. If it does not, repeat the foregoing sequence of operations more carefully. Each of the remaining buttons may be set to other stations in a like manner.



MODEL 8109
CHASSIS 127



Push Button Set-up:

The overall frequency range covered by the push buttons on this Brunswick receiver is from 540 kc to 1,600 kc. This range is broken down into sections covered by each button (reading from left to right—see diagram) in the following manner:

Button No. 1	540 to 1000 kc
Button No. 2	550 to 1050 kc
Button No. 3	565 to 1050 kc
Button No. 4	725 to 1360 kc
Button No. 5	750 to 1440 kc
Button No. 6	1000 to 1600 kc

From the above, it will be apparent that all six buttons are adjustable to cleared channel stations, and also that the sixth or highest frequency button also embraces the extended broadcast spectrum to 1600 kc.

Make up a suitable list of six local stations, assigning one to each button within the ranges tabulated above. Follow the order of operation indicated by the circled figures 1 to 6 in the accompanying illustration. When operation 5 has been reached for each button, it will be found helpful to momentarily switch back to manual tuning and, thereby, identify the program to be tuned in on that particular button. Again, switch back to push button tuning on the band switch and proceed with operation 5 and 6. When the proper station has been heard, the final adjustment should be made while watch-

ing the tuning indicator. The shadow may seem to hold at a minimum angle for an appreciable time while making this adjustment. Turn the screw driver each side of what seems to be "center," until the shadow angle starts to become greater. Half the distance the screw driver has been turned is then the correct setting. Apply this procedure first to operation 5 and then 6.

In order to facilitate setting each button to the desired station, this receiver leaves the factory with the buttons set to the following frequencies:

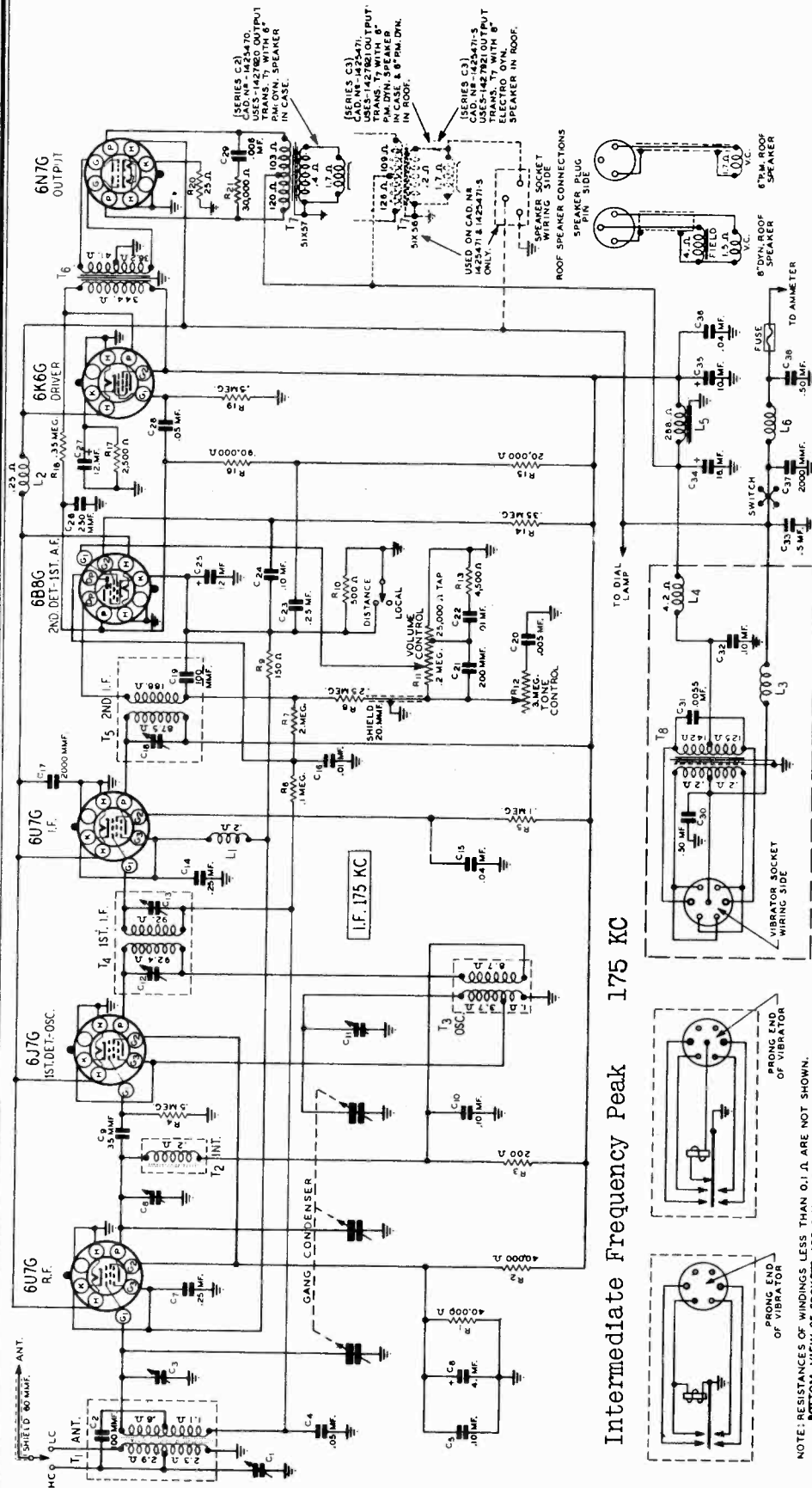
Button No. 1	600 kc
Button No. 2	700 kc
Button No. 3	800 kc
Button No. 4	1000 kc
Button No. 5	1200 kc
Button No. 6	1400 kc

These frequencies should be used as reference points. If the desired station is on a higher frequency, turn the screw indicated as operation 5 in a counter-clockwise direction; if on a lower frequency, clockwise.

After the desired stations have been set up on the push buttons, replace the escutcheon and push buttons, then remove the proper station call letters from the call letter sheet and place them in the correct order in the windows below each button. Care should be taken that the call letters are inserted in the proper order and that they are right side up.

CADILLAC MOTOR CAR CO.

MODELS 1425470, 1425471
Schematic



CADILLAC 1938 MASTER AND FLEETWOOD RADIOS PART NOS. 1425470 AND 1425471

SPECIFICATIONS

Power Output	14 Watts	Undistorted	Quantity	1	Type	6U7G	Function	R. F. Amplifier
Power Consumption at 6.3 Volts	8.0 Amperes			1		6J7G		1st Detector - Oscillator
Sensitivity at 1 Watt Output	.4 Microvolt			1		6U7G		I. F. Amplifier
Selectivity at 1000 times signal	43 KC			1		6B8G		2nd Detector, A.V.C., 1st Audio
Range	528 to 1581 KC			1		6K6G		Driver
Speaker Master	6" PM Dynamic			1		6N7G		Power Amplifier
Fleetwood - 6"	6" PM Dynamic or 8" Electro Dynamic in roof			1				

TUBE COMPLEMENT

Quantity	Type	Function
1	6U7G	R. F. Amplifier
1	6J7G	1st Detector - Oscillator
1	6U7G	I. F. Amplifier
1	6B8G	2nd Detector, A.V.C., 1st Audio
1	6K6G	Driver
1	6N7G	Power Amplifier

Intermediate Frequency Peak 175 KC

NOTE: RESISTANCES OF WINDINGS LESS THAN 0.1 Ω. ARE NOT SHOWN.
BOTTOM VIEW OF SOCKETS ARE SHOWN.

MODELS 1425470, 1425471
 Socket, Trimmers, Layout
 Voltage, Alignment

CADILLAC MOTOR CAR CO.

FIG. 4 VOLTAGE CHART
 CADILLAC 1936 MASTER & TELEWOOD RADIO
 SOCKET POSITION
 ANTENNA-ROUNDED
 VOLUME CONTROL-MAXIMUM
 500 OHM PER VOLT METER
 500 VOLT SCALE

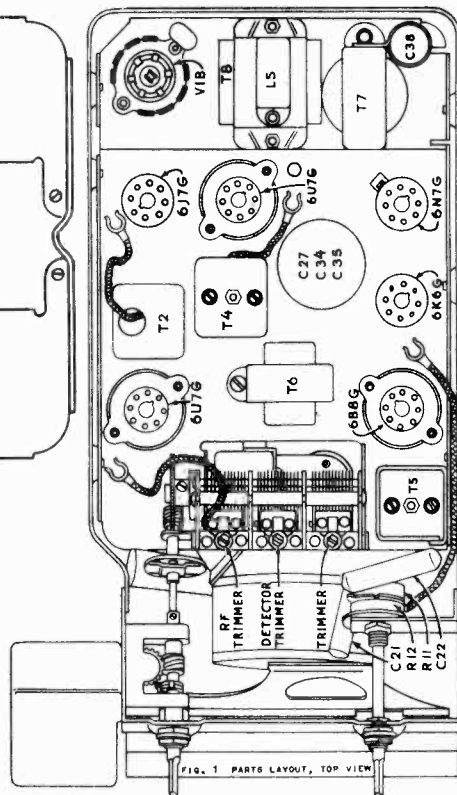
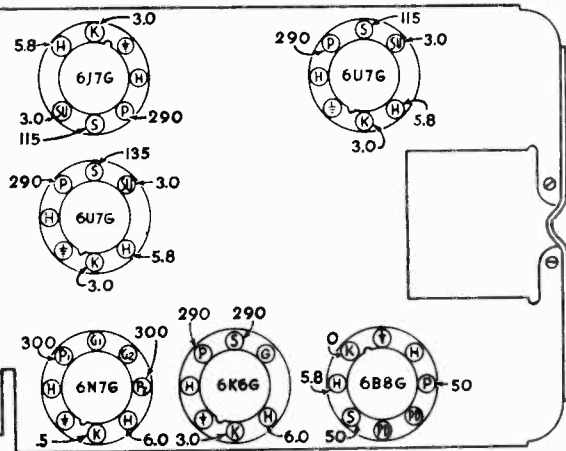


FIG. 1 PARTS LAYOUT, TOP VIEW

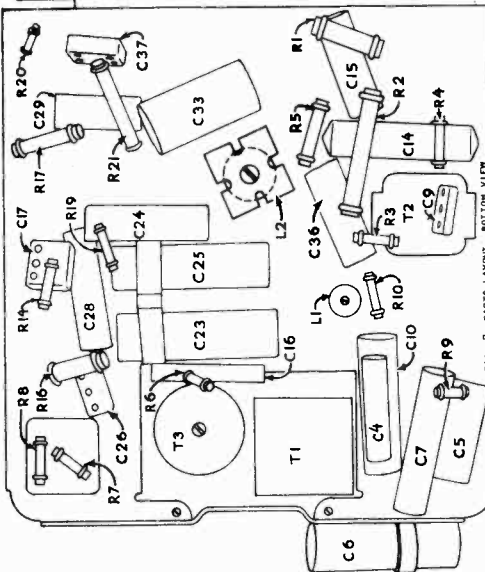
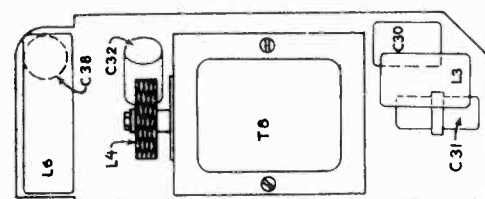


FIG. 2 PARTS LAYOUT, BOTTOM VIEW

Connect the shielded antenna lead from the chassis through a 200 mmf. condenser to the antenna post of the signal generator.

Turn the tuning condenser to full open position, then adjust the trimmer of the oscillator section of the three gang condenser until maximum output is obtained - See Fig. 1 for location of this trimmer.

1400 KILOCYCLE ADJUSTMENT

Set the signal generator for 1400 KC.

Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the 1st detector and R. F. trimmers on the tuning condenser for maximum output.

Do not change the setting of the oscillator trimmer.

600 KILOCYCLE ADJUSTMENT

Set the signal generator for 600 KC.

Turn the tuning condenser rotor until maximum output is obtained.

Adjust the antenna 600 KC trimmer to maximum. This trimmer is reached from the outside of the case.

ADJUSTING ANTENNA 600 KILOCYCLE TRIMMER

After the radio is installed and the car antenna is connected, it will be necessary to readjust the antenna 600 KC trimmer.

Tune in a weak signal at approximately 600 KC with the volume control about 1/2 way down. Then, by turning the adjusting screw of the antenna 600 KC trimmer up or down until maximum output is obtained.

CALIBRATING THE RADIO

Tune in a signal of known frequency at about the center of the dial.

Choose a station with a frequency which corresponds to one of the numbers on the dial drum. For example, WLW, with a frequency of 700 KC, corresponds to 70 on the dial.

Holding the tuning knob, using a clean eraser on the end of a lead pencil, turn the dial drum until the frequency of the station tuned in is at the center of the dial opening.

ALIGNMENT AND CALIBRATION PROCEDURE

The following equipment is required for aligning:

A signal generator which will provide an accurately calibrated signal at the test frequencies as listed.

Output indicating meter.

Non-metallic screwdriver.

Dummy antennas - .05 mf., and 200 mmf.

Controls should be in the following positions:

Volume Control - Maximum all adjustments.

Local-Distance Switch - Distance position - all adjustments.

Connect radio chassis to ground lead of signal generator with a short heavy lead. The chassis should be in the case.

Allow chassis and signal generator to "heat up" for several minutes.

Attenuate the signal from the signal generator to prevent the levelling off action of the AVC.

After the alignment is completed, repeat the procedure as a final check

I. F. ADJUSTMENT

Set the signal generator for a signal of 1.75 KC.

Connect the output of the signal generator through an .05 mf. condenser to the stator of the first detector section of the tuning condenser.

Then adjust the I.F. trimmers until maximum output is obtained. The location of these trimmers is shown in parts layout illustration, Fig. 1.

1581 KILOCYCLE ADJUSTMENT

Set the signal generator for 1581 KC.

Turn the rotor of the tuning condenser to the full open position.

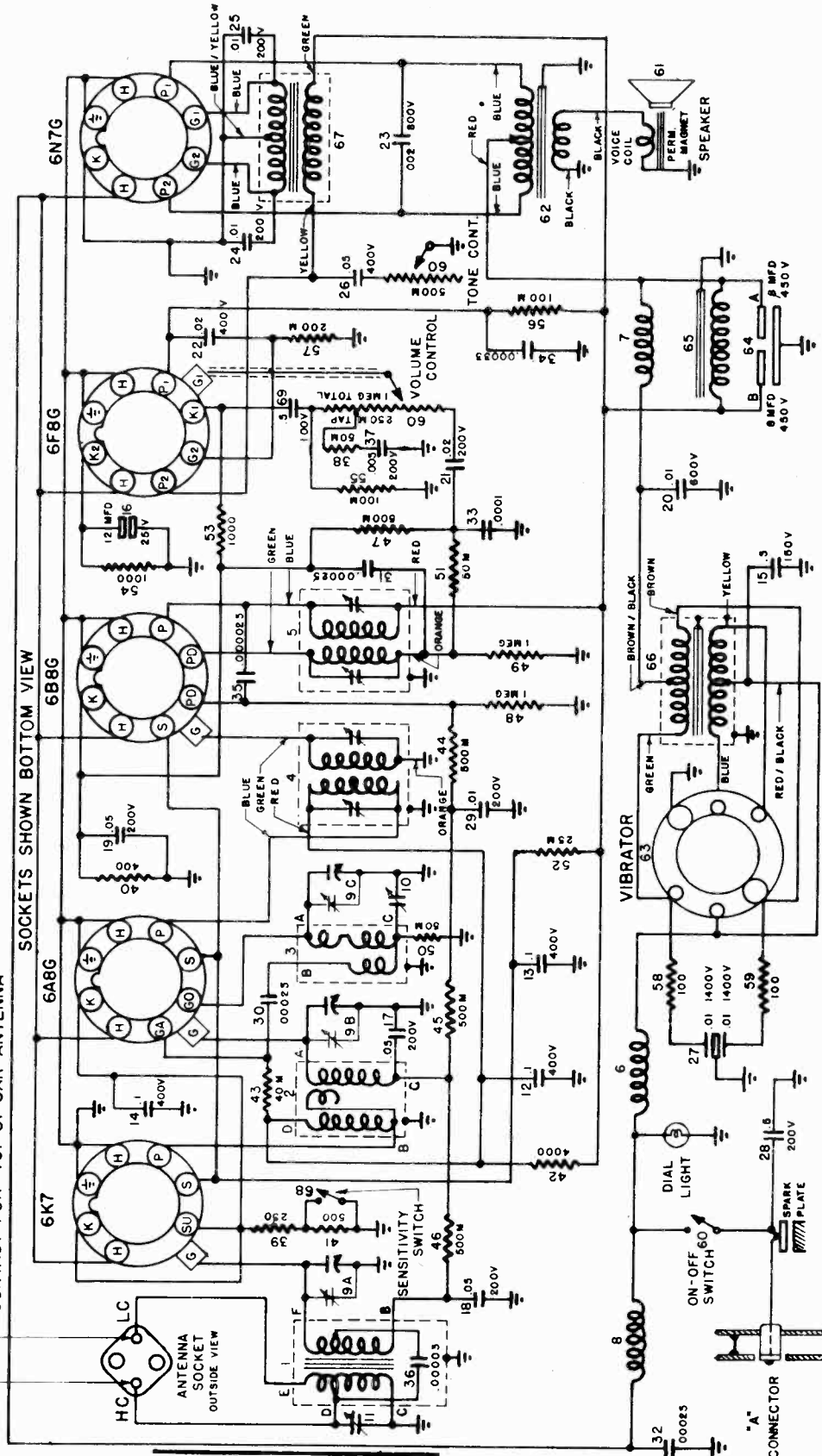
Insert the antenna plug for a high capacity antenna (mark on KC side).

CADILLAC MOTOR CAR CO.

MODEL 7232502
Schematic

Intermediate Frequency Peak 262 KC

CONTACT FOR "UNDER RUNNING BOARD" ANTENNA
CONTACT FOR "TOP OF CAR" ANTENNA



TUBE COMPLEMENT

Type	Function
6K7	R. F. Amplifier
6A8G	Detector-oscillator
6B8G	I. F. Amplifier-second detector
6F8G	Twin Triode audio amplifier and driver
6N7G	Power Amplifier

CADILLAC 1938 STANDARD RADIO PART NO. 7232502

SPECIFICATIONS

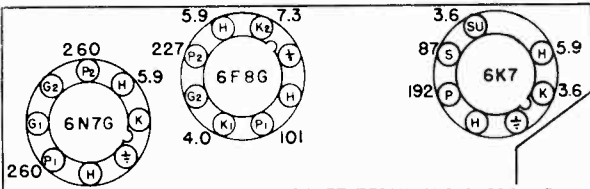
- Power Output 6.0 Watts Undistorted
- Power Consumption at 6.3 Volts 6.5 Amperes
- Sensitivity at 1 Watt Output 1.4 Microvolt
- Selectivity at 1000 times signal 32 KC
- Range 530 KC to 1550 KC
- Speaker 6" PM Dynamic

FIG. 3 SCHEMATIC CIRCUIT DIAGRAM
CADILLAC 1938 STANDARD RADIO

MODEL 7232502

Socket, Trimmers, Layout CADILLAC MOTOR CAR CO.
Voltage, Alignment

VOLTAGE CHART
BOTTOM VIEW OF TUBE SOCKETS



VOLTAGE READINGS BETWEEN SOCKET TERMINALS & GROUND WITH D.C. VOLTMETER HAVING RESISTANCE OF 1000 Ω PER VOLT CURRENT DRAIN 6.3 ± .5 AMPERES WITH DIAL LIGHT "B" SUPPLY DRAIN APPROX. 60 M.A.

SENSITIVITY SWITCH CLOSED 6.0 VOLTS AT "A" CONNECTOR

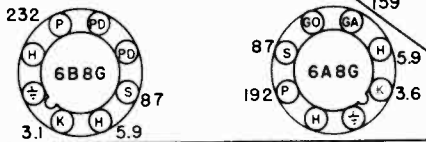


FIG. 4 VOLTAGE CHART CADILLAC 1938 STANDARD RADIO

GENERAL SERVICE DATA

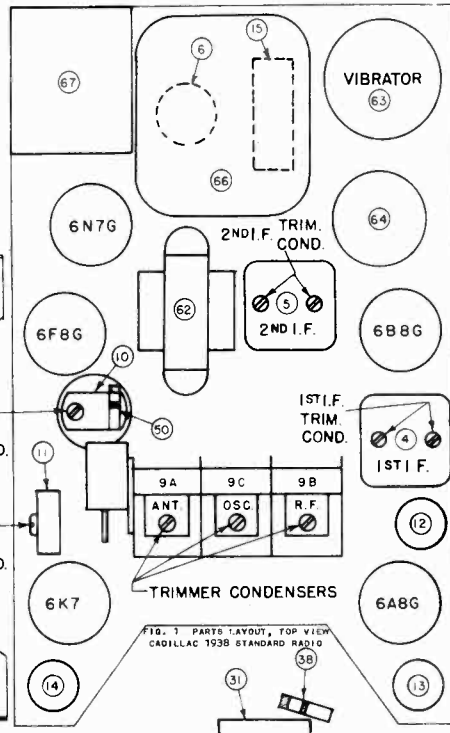
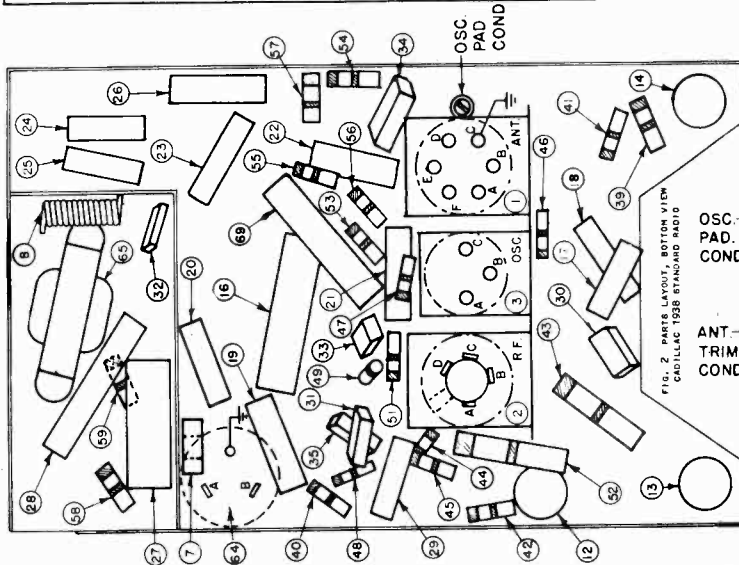
Inserting Antenna Plug:

IMPORTANT -- The antenna plug can be inserted in two ways depending on whether the antenna is of high or low capacity.

Referring to Fig. 3, it will be noted that the letters HC and LC are stamped on the case. There is a spot of paint on the antenna plug. When the plug is inserted with the spot of paint on the HC side, it is properly inserted for a high capacity antenna and when it is inserted with the spot of paint on the LC side, it is properly inserted for a low capacity antenna.

If the total capacity of the antenna and shielded lead is approximately 200 mmf., which would be the case in a running board or ordinary roof antenna (not metal roof), insert the antenna plug for a high capacity antenna with the mark on the HC side.

If the total capacity of the antenna and shielded lead is approximately 70 mmf., such as may be the case if a "roof" antenna is used, insert the antenna plug for a low capacity antenna or with the mark on the LC side.



ALIGNMENT AND CALIBRATION PROCEDURE

The following equipment is required for aligning:

A signal generator which will provide an accurately calibrated signal at the test frequencies as listed.

Output indicating meter.

Non-metallic screwdriver.

Dummy antennas - .05 mf., and 200 mmf.

Controls should be in the following positions:

Volume Control - Maximum all adjustments.

Local-Distance Switch - Distance position - all adjustments.

Connect radio chassis to ground lead of signal generator with a short heavy lead. The chassis should be in the case.

Allow chassis and signal generator to "heat up" for several minutes.

Attenuate the signal from the signal generator to "heat up" for several minutes off action of the A.V.C.

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

CONNECTING THE OUTPUT METER

Connect the terminals of the output meter to the plate prongs of the 6N7G tube. In order to protect the output meter from D.C. voltage terminal denser (.25 mfd., 400 volt) should be connected in series with one terminal.

I. F. ADJUSTMENT

Connect the signal lead of the test oscillator to the grid cap of the 6A8G transiator tube, through a .05 mfd. condenser, leaving the tube's grid clip in place. Connect the ground lead of the test oscillator to the chassis frame.

Set the test oscillator to exactly 292 KC.

Turn rotor plates of gang condenser completely out of mesh. Adjust the trimmers on the I. F. coils Nos. 4 and 5. This should be repeated several times and adjustment of the oscillator output should be kept to as low a value as is consistent with obtaining a readable indication on the output meter.

1400 KILOCYCLE ADJUSTMENT

Remove the signal lead of the test oscillator from the grid of the transiator tube and connect to the antenna terminal of the receiver through a 200 mmfd. condenser.

Set the test oscillator to exactly 1400 kilocycles.

Tune the set to 1400 kilocycles (use an indicator in front of the dial, corresponding to the pointer in the instrument panel dial opening.)

Adjust the parallel trimmers of the antenna, oscillator and R. F. sections of the gang condenser. (9A, 9C and 9B, Fig. 1) for maximum output.

500 KILOCYCLE ADJUSTMENT

Remove the signal lead of the test oscillator from the antenna terminal and connect to the grid cap of the 6K7 (R. F.) tube through the 200 mmfd. condenser. Leave the tube's grid clip in place.

Set the test oscillator on 500 KC.

Tune the set to 500 KC. Maintain a low output signal and adjust the oscillator padder condenser No. 10 (Fig. 1) while rocking the variable condenser gang tuning shaft back and forth through the signal. This operation should be continued until no further increase in output can be obtained. An insulated screw driver should be used for this adjustment.

Remove signal lead of the test oscillator from the 6K7 tube cap and connect to the antenna terminal.

With test oscillator and set both adjusted to 500 KC., adjust the antenna trimmer condenser, No. 11 (Fig. 1) for maximum output.

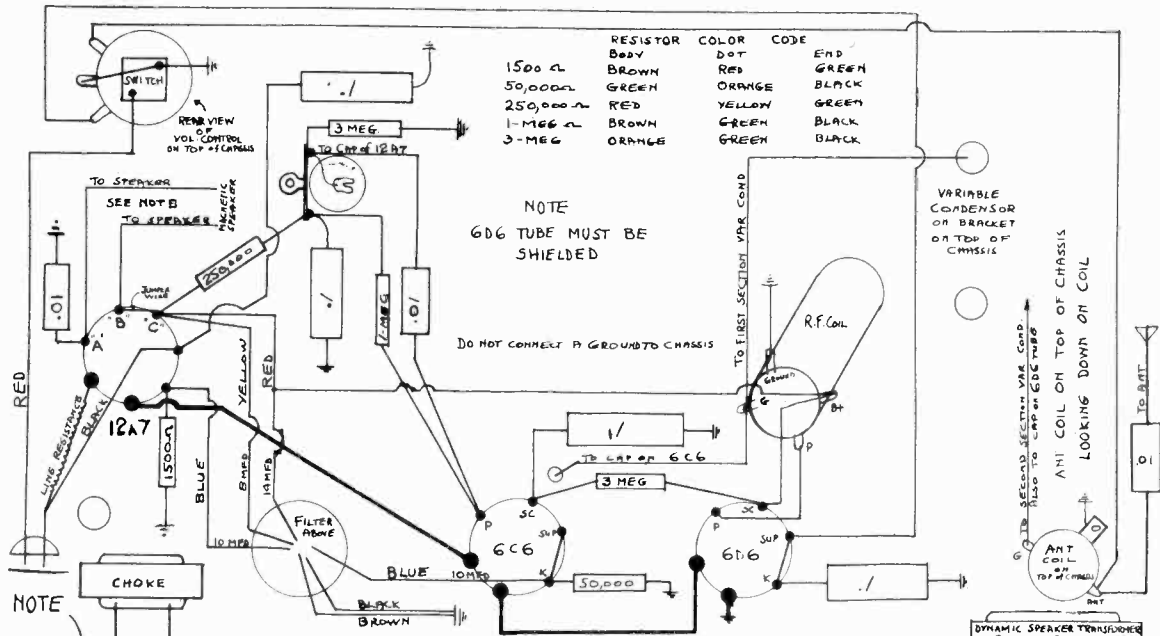
After the set is installed in a car and the antenna is connected, the antenna trimmer should again be adjusted to give the best signal at approximately 500 KC. If the signal volume is too great the antenna trimmer should be turned to the local position. Adjust the antenna trimmer, No. 11, (Fig. 1) for maximum signal output.

REALIGNING AT 1400 KILOCYCLES

Recheck alignment of R. F. antenna and oscillator sections of gang condenser as outlined in paragraph No. 3.

CHAMPION RADIO

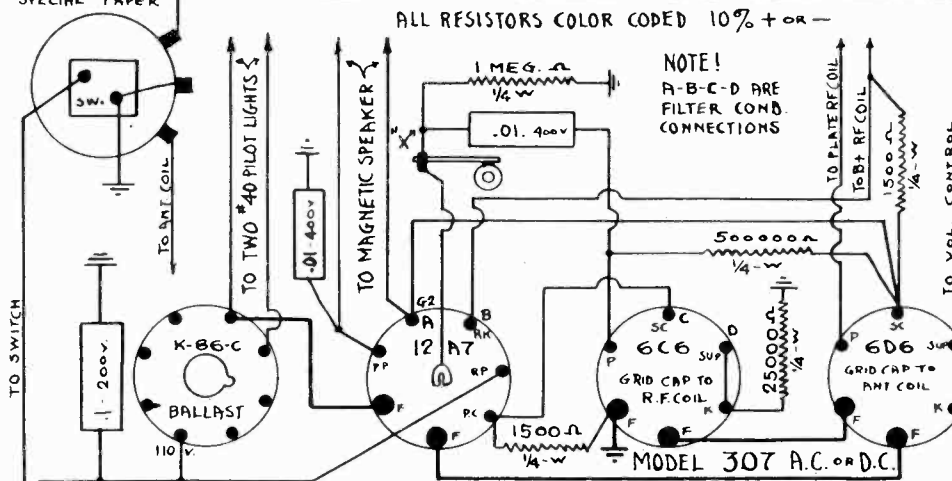
MODEL 30
 MODELS 307,317
 Schematics



CHAMPION - RADIO MODEL 30

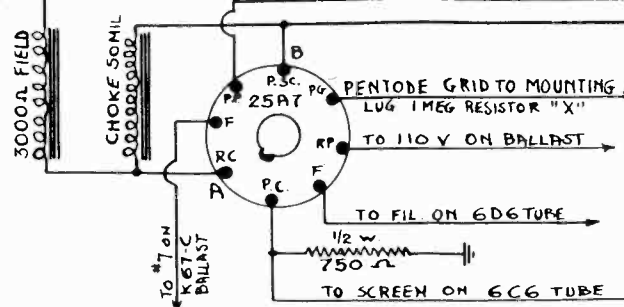
IF DYNAMIC SPEAKER IS USED TAKE JUMPER WIRE OFF TERMINALS B & C ON 12A7 TUBE AND PUT SPEAKER AND CHOKE WIRES AS MARKED - ALSO TAKE YELLOW FILTER WIRE OFF 'C' AND PUT ON 'B' ON TUBE

REAR OF VOL. CONT. SPECIAL TAPER



ANTENNA COIL ON TOP OF CHASSIS - R.F. COIL BELOW CHASSIS.
 FILTER CONDENSOR ON MODEL 307 HAS 10-10 MFD 175 V. A.B., 10-10 MFD 35 V. C.D. AND ON MODEL 317 16-12 MFD 200V A.B., 10-10-MFD 35 V. C.D.

MODELS 307 & 317
 CHAMPION RADIO
 JAN. 30-37-C.H.F.



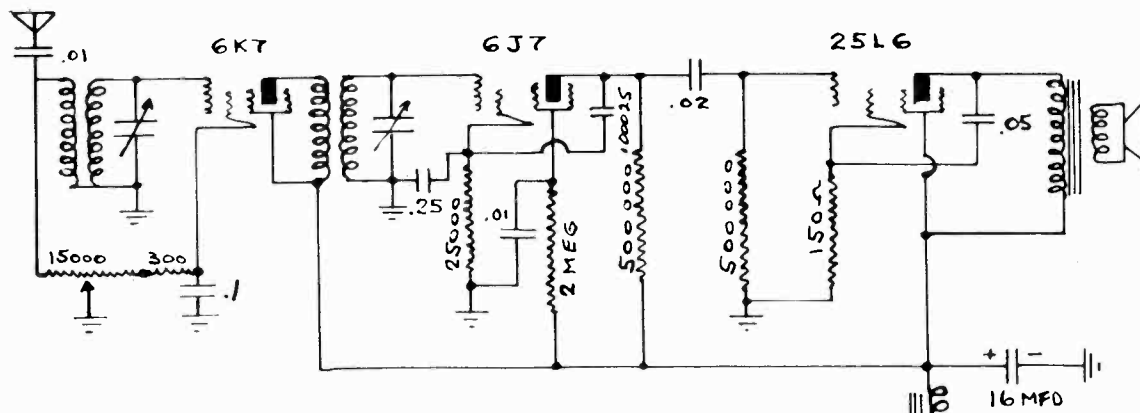
MODEL 317
 A.C. OR D.C.

NOTE!
 MODEL 317 USES 25A7 TUBE IN PLACE OF 12A7 - ALSO USES K-67-C BALLAST TUBE IN PLACE OF K-86-C BALLAST AS USED IN MODEL 307 - ALSO SPEAKER IS DYNAMIC INSTEAD OF MAGNETIC.

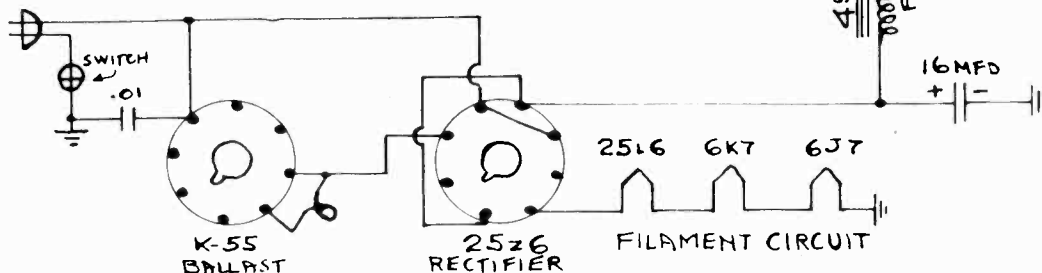
MODELS 54,55
Schematic

CHAMPION RADIO

MODELS 1437,7373,8373
Coil Data

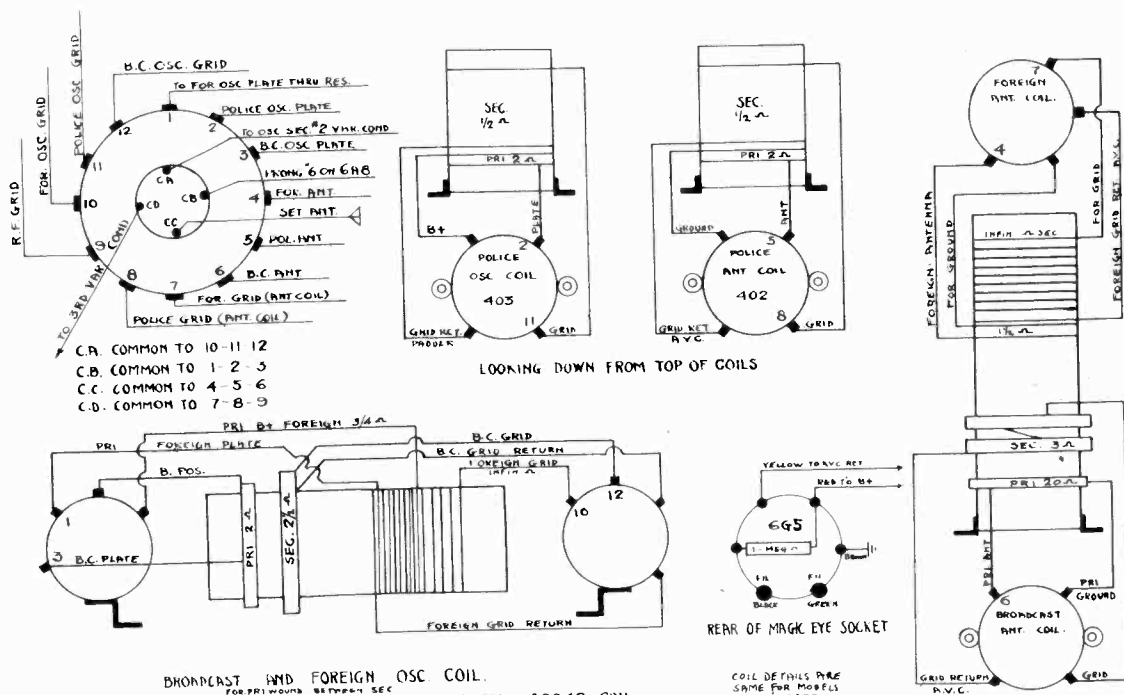


115 VOLT A.C.-D.C.



CHAMPION RADIO MODELS 55

MODEL 54 SIMILAR EXCEPT 25A6 USED IN PLACE OF 25L6 AND CATHODE RESISTOR OF 150Ω IS CHANGED TO 750Ω + BY-PASSED WITH 10 MFD. 25 VOLT CONDENSER



C.A. COMMON TO 10-11-12
C.B. COMMON TO 1-2-3
C.C. COMMON TO 4-5-6
C.D. COMMON TO 7-8-9

LOOKING DOWN FROM TOP OF COILS

REAR OF MAGIC EYE SOCKET

BROADCAST AND FOREIGN ANT. COIL
LOOKING DOWN FROM TOP OF COIL

BROADCAST AND FOREIGN OSC. COIL.
FOR PRI. WINDS BETWEEN SEC.
TUNING CONDENSER .00042 CAP
INT. FREQUENCY 465 KC.

COIL DETAILS ARE
SAME FOR MODELS
837 E 1437
6320 6312-B11
7373 AND 8373

SHEET # 2

COIL AND SWITCH DETAILS MODEL 1437

CHAMPION RADIO

CHAMPION RADIO

MODEL 400
Schematic

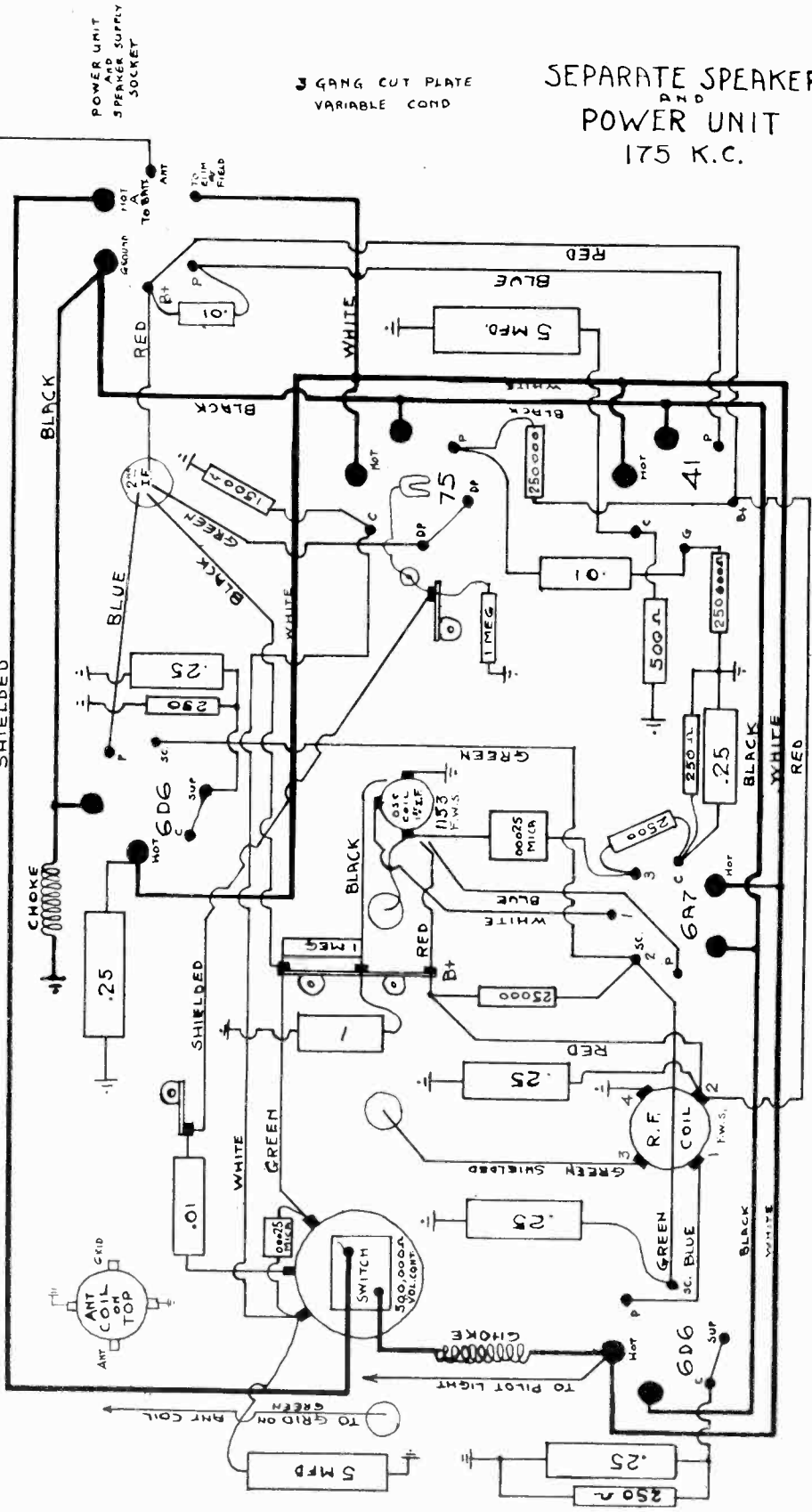
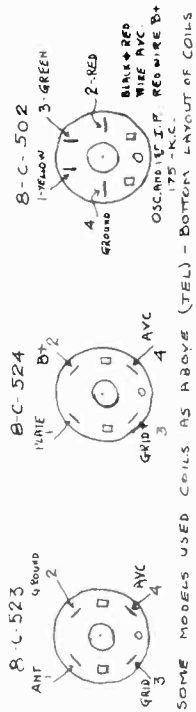
MODEL 400 CHAMPION RADIO 5 TUBE AUTO

TO ANTENNA ON COIL SHIELDED

SHIELDED

3 GANG CUT PLATE
VARIABLE COND

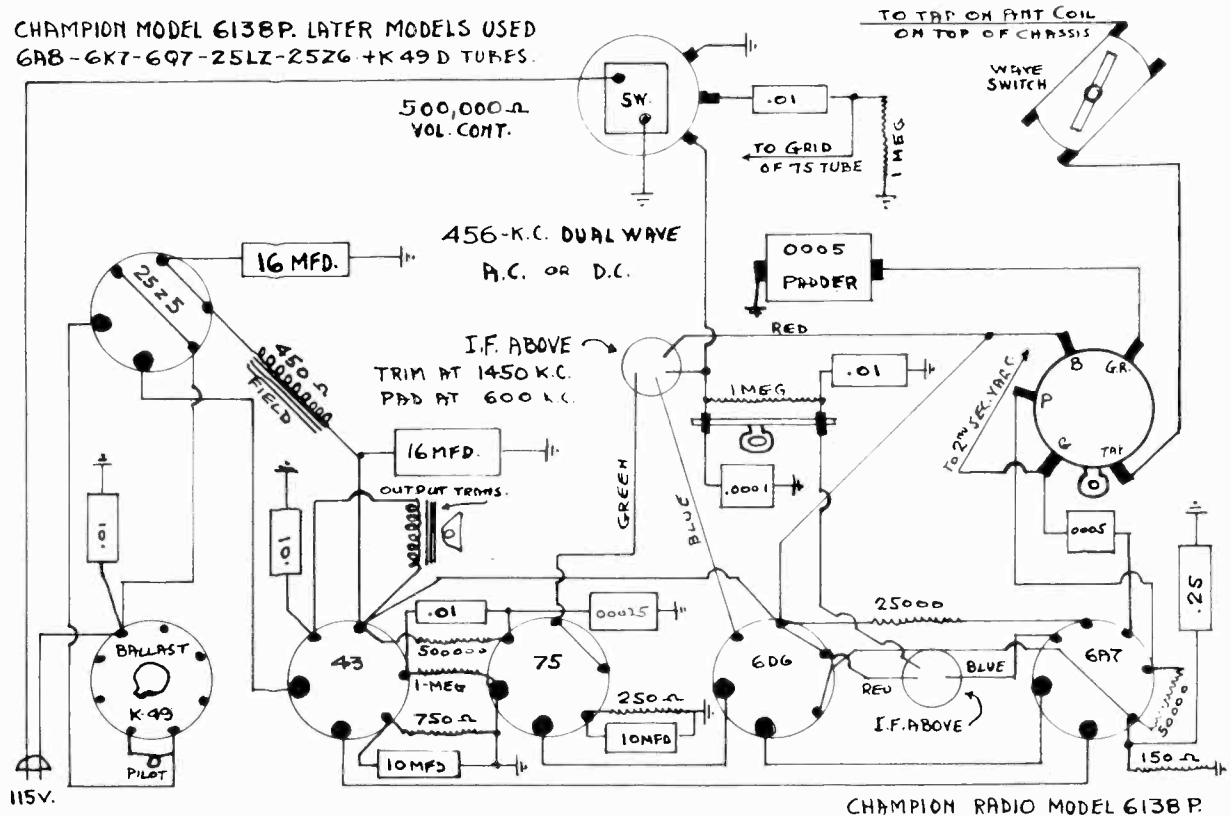
SEPARATE SPEAKER
AND
POWER UNIT
175 K.C.



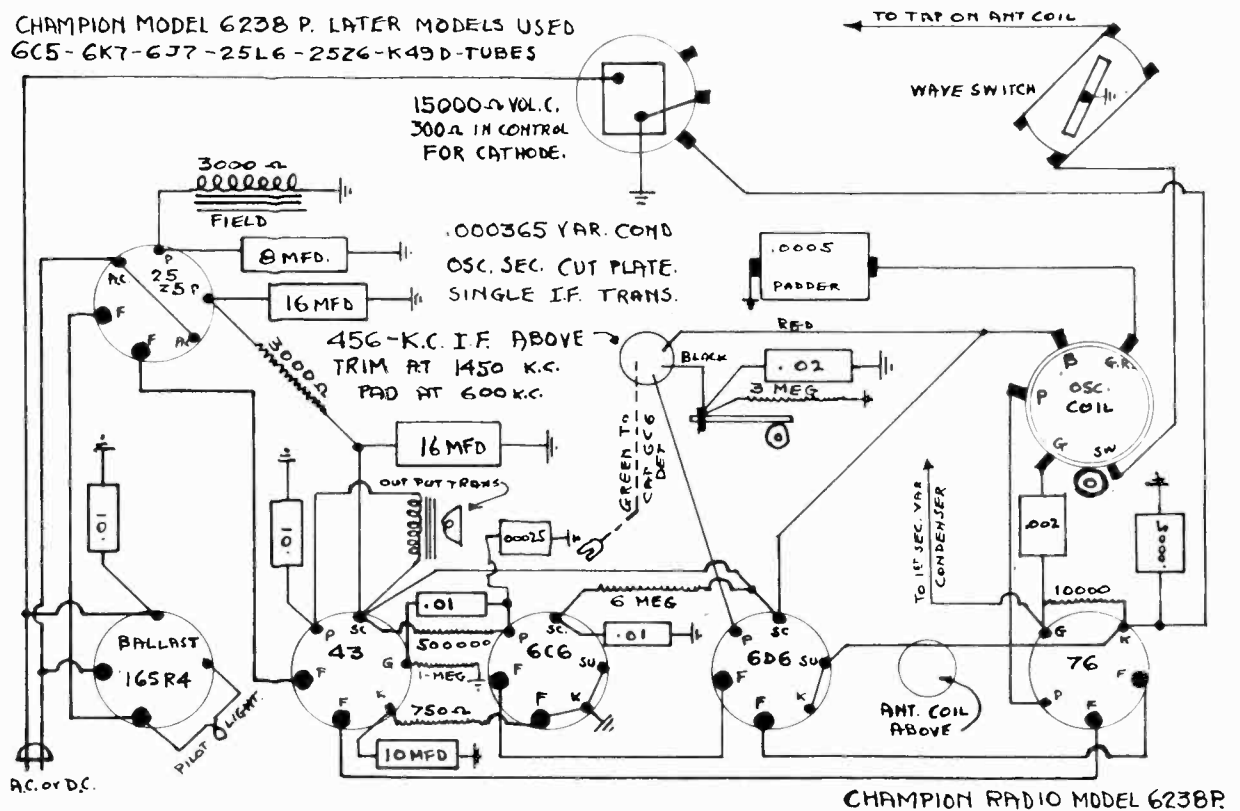
CHAMPION RADIO

MODEL 6138P
MODEL 6238P
Schematics

CHAMPION MODEL 6138P. LATER MODELS USED
6AB-6K7-6Q7-25LZ-25Z6-K49D TUBES.



CHAMPION MODEL 6238P. LATER MODELS USED
6C5-6K7-6J7-25L6-25Z6-K49D-TUBES

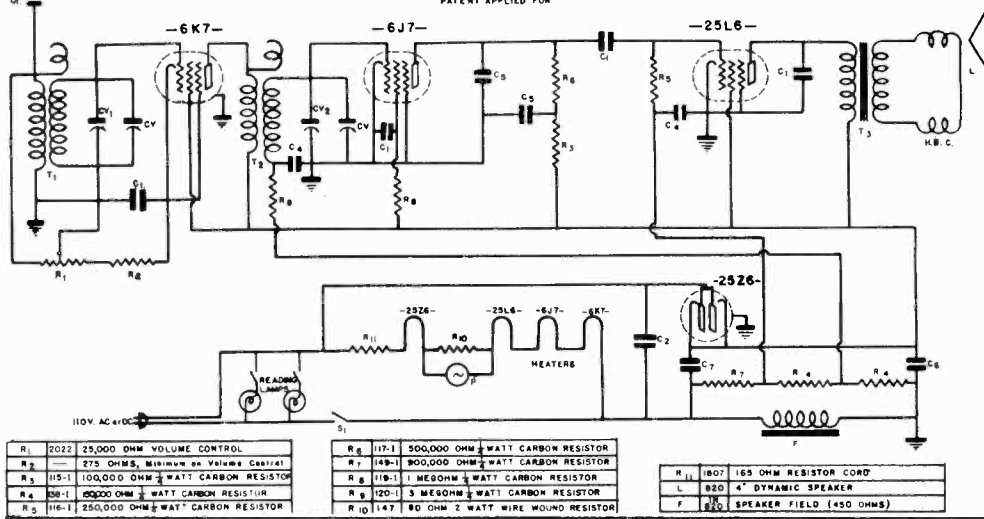


MODEL AD6
MODEL AR
MODEL U, UE

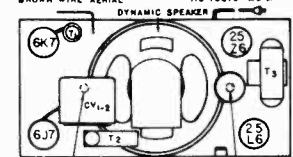
CLIMAX RADIO & TELEV. CO., INC.

Schematics, Socket Alignment

MODEL AR
4 TUBE BROADCAST BED-LAMP RECEIVER - AC-DC OPERATED
PATENT APPLIED FOR



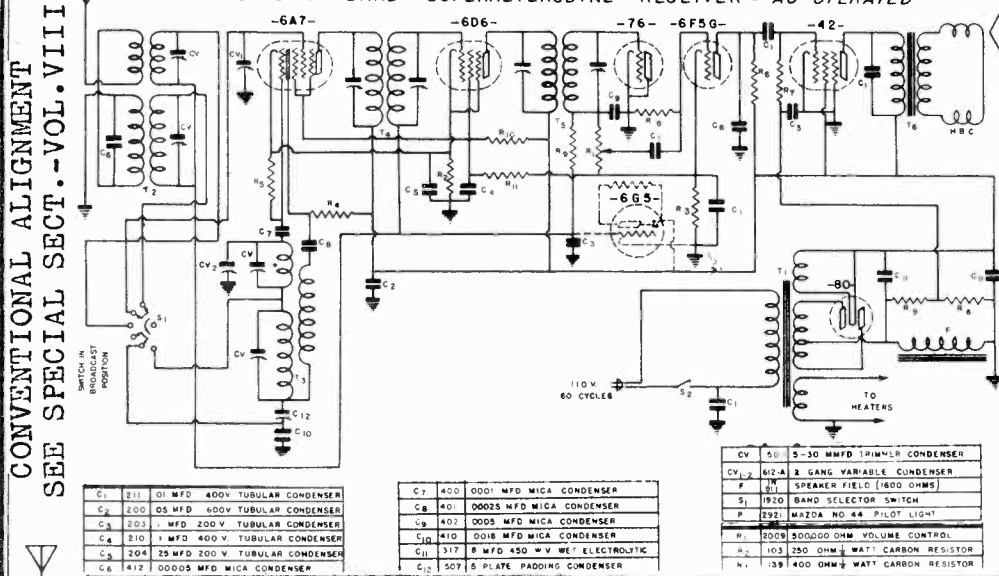
TUBE LOCATION & CHASSIS LAYOUT



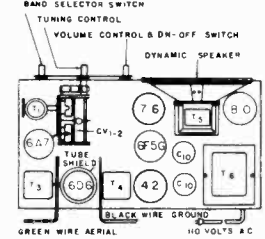
TUNING CONTROL UNDERNEATH
VOLUME CONTROL & ON-OFF SWITCH UNDERNEATH

C1	211	01 MFD 400 V TUBULAR CONDENSER
C2	208	05 MFD 400 V TUBULAR CONDENSER
C3	203	1 MFD 200 V TUBULAR CONDENSER
C4	223	25 MFD 200V TUBULAR CONDENSER
C5	401	00025 MICA CONDENSER
C6	312	10 MFD 50V ELECTROLYTIC CONDENSER
C7	324	20 MFD 50V ELECTROLYTIC CONDENSER
CV1	673	2 GANG VARIABLE CONDENSER
T1	1218	ANTENNA COIL
T2	1312	INTERSTAGE COIL
T3	4020	OUTPUT TRANSFORMER
P	2921	NO. 4 PILOT LIGHT
S1	---	LINE SWITCH ON VOLUME CONTROL

MODEL AD6
6 TUBE SKIP BAND SUPERHETERODYNE RECEIVER - AC OPERATED



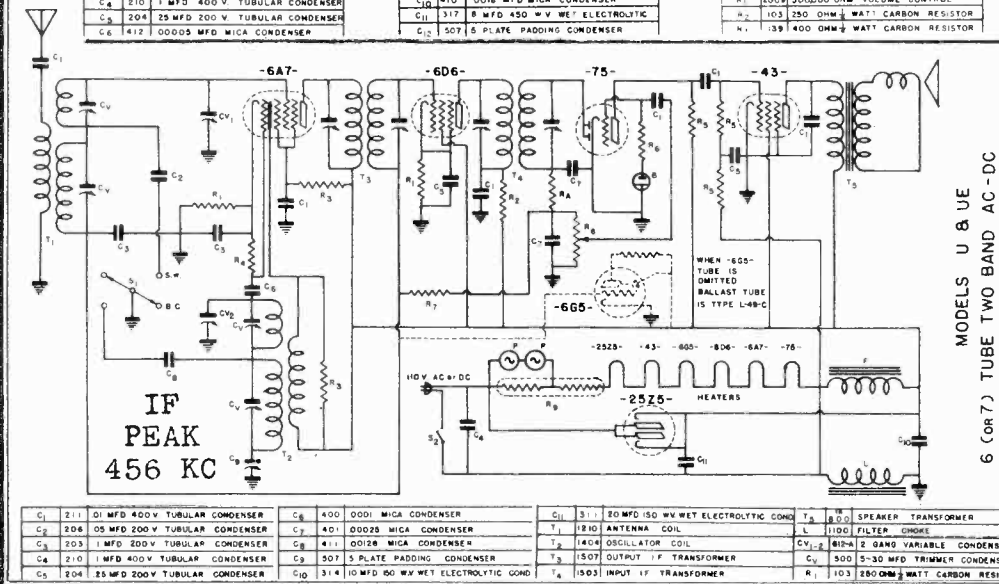
TUBE LOCATION & CHASSIS LAYOUT



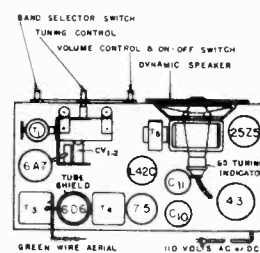
IF PEAK 456 KC

R1	108	10,000 OHM 1/2 WATT CARBON RESISTOR
R2	111	25,000 OHM 1/2 WATT CARBON RESISTOR
R3	116	250,000 OHM 1/2 WATT CARBON RESISTOR
R4	145	400,000 OHM 1/2 WATT CARBON RESISTOR
R5	117	500,000 OHM 1/2 WATT CARBON RESISTOR
R6	118	1 MEGOHM 1/2 WATT CARBON RESISTOR
R7	148	25,000 OHM 1/2 WATT CARBON RESISTOR
T1	1001	POWER TRANSFORMER
T2	1225	B C B SKIP BAND ANTENNA COIL
T3	1412	B C B SKIP BAND OSCILLATOR COIL
T4	1503	INPUT IF TRANSFORMER
T5	1507	DIODE IF TRANSFORMER
T6	1508	SPEAKER TRANSFORMER
R11	113	50,000 OHM 1/2 WATT CARBON RESISTOR

CONVENTIONAL ALIGNMENT
SEE SPECIAL SECT. -VOL. VIII

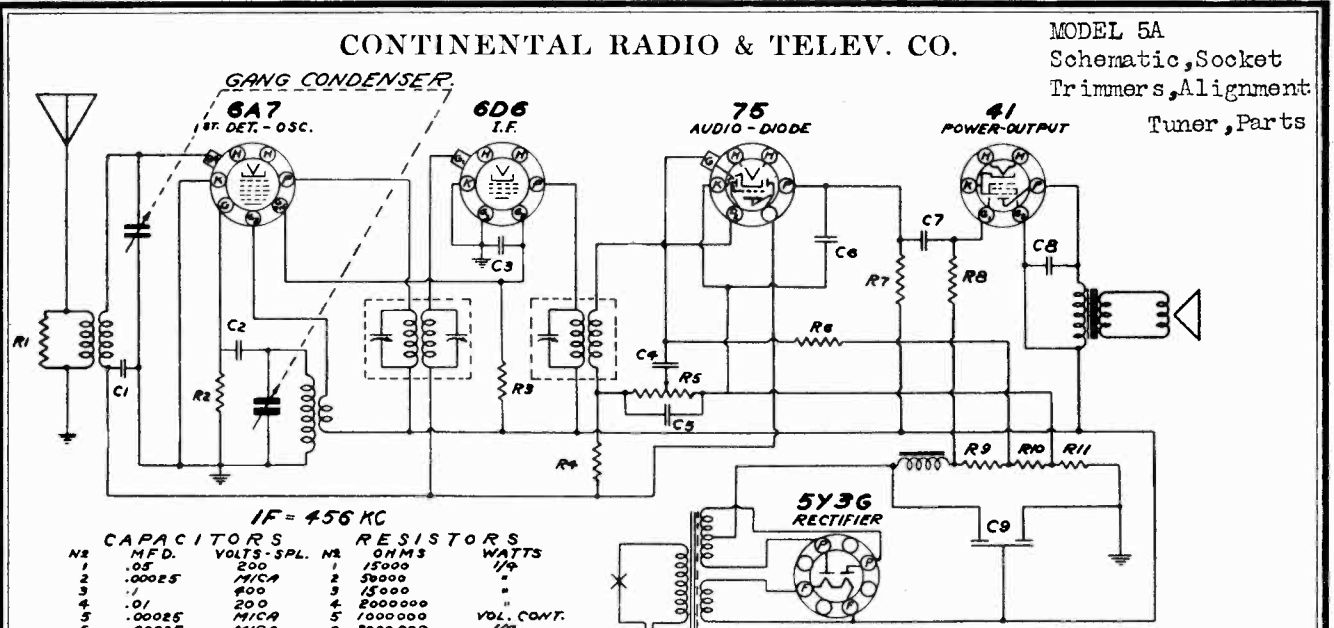


TUBE LOCATION & CHASSIS LAYOUT



MODELS U & UE
6 (OR 7) TUBE TWO BAND AC-DC SUPERHETERODYNE RECEIVER

R1	118	2000 OHM 1/2 WATT CARBON RESISTOR
R2	111	25,000 OHM 1/2 WATT CARBON RESISTOR
R3	113	50,000 OHM 1/2 WATT CARBON RESISTOR
R4	116	250,000 OHM 1/2 WATT CARBON RESISTOR
R5	117	500,000 OHM 1/2 WATT CARBON RESISTOR
R6	118	1 MEGOHM 1/2 WATT CARBON RESISTOR
R7	119	1 MEGOHM 1/2 WATT CARBON RESISTOR
R8	2009	50,000 OHM VOLUME CONTROL
R9	2906	L-47-C BALLAST TUBE (WITH 885 TUBE)
R10	2905	L-48-C BALLAST TUBE (WITHOUT 885 TUBE)
S1	1914	BAND SELECTOR SWITCH
S2	---	LINE SWITCH ON VOLUME CONTROL
P	2902	MAZDA #46 PILOT LIGHT
T1	3000	BIAS CELL
F	800	SPEAKER FIELD (2800 OHMS)



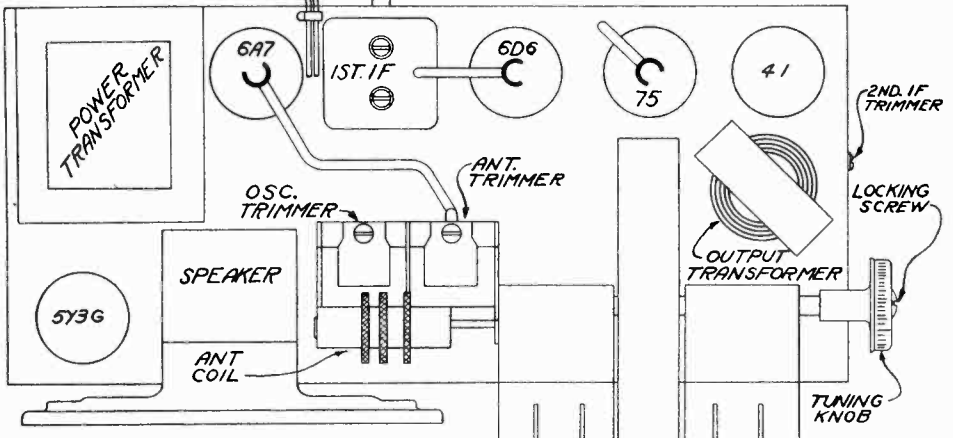
IF = 456 KC

CAPACITORS				RESISTORS			
Nr	MFD.	VOLTS	SPL.	Nr	OHMS	WATTS	
1	.05	200		1	15000	1/4	
2	.00025	MICA		2	50000	"	
3	.1	400		3	15000	"	
4	.01	200		4	2000000	"	
5	.00025	MICA		5	1000000	"	
6	.00025	MICA		6	3000000	"	
7	.01	400		7	200000	"	
8	.005	400		8	500000	"	
9	.005	400		9	180	"	
10	B-B	300		10	33	"	
				11	160	"	

RESISTORS: 180 METAL, 33 CLAD

ANT. WIRE-BLUE
GRD. WIRE-BLACK

AC CORD & PLUG



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 Candohm Resistor

CONDENSERS

P164 .01 Mid. 400 Volt
P1322 .005 Mid. 600 Volt
P334 .05 Mid. 400 Volt
P148 .05 Mid. 200 Volt
MICA CONDENSERS
P817 .00025

ELECTROLYTIC CONDENSERS

P2397 Dual 8 Mid. 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.

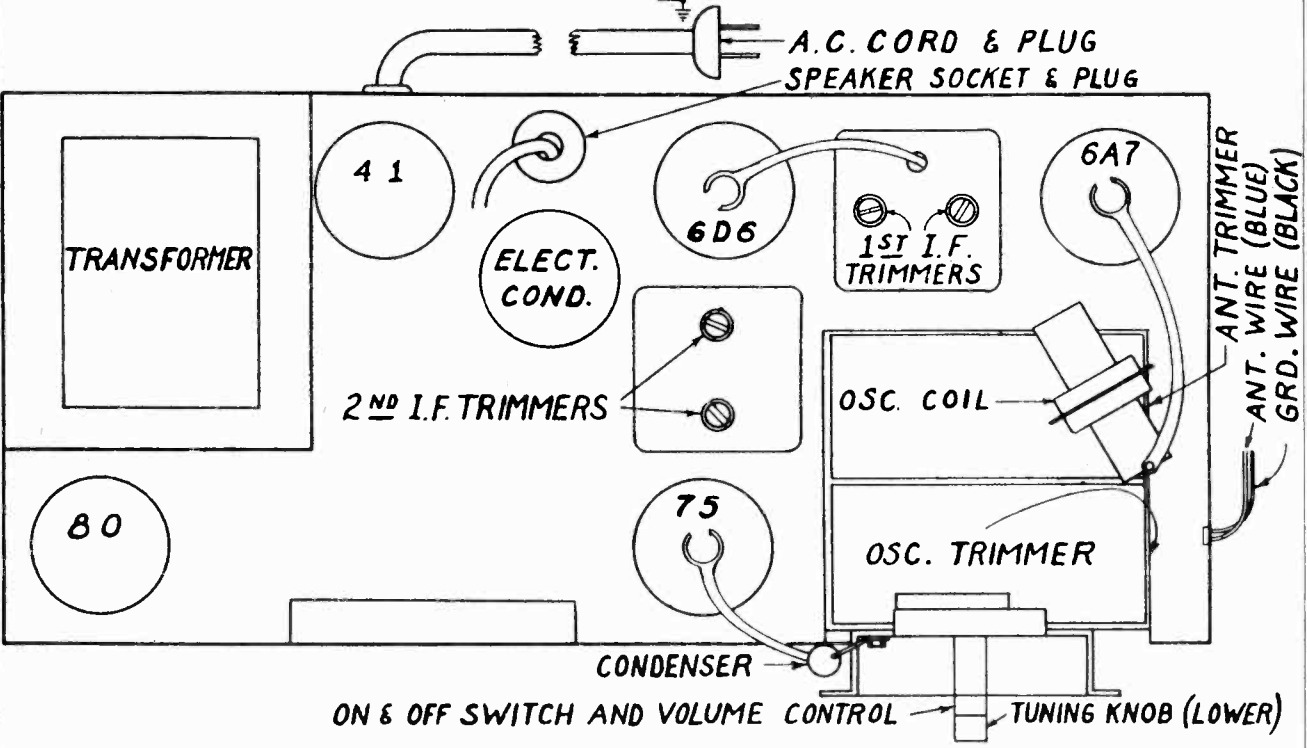
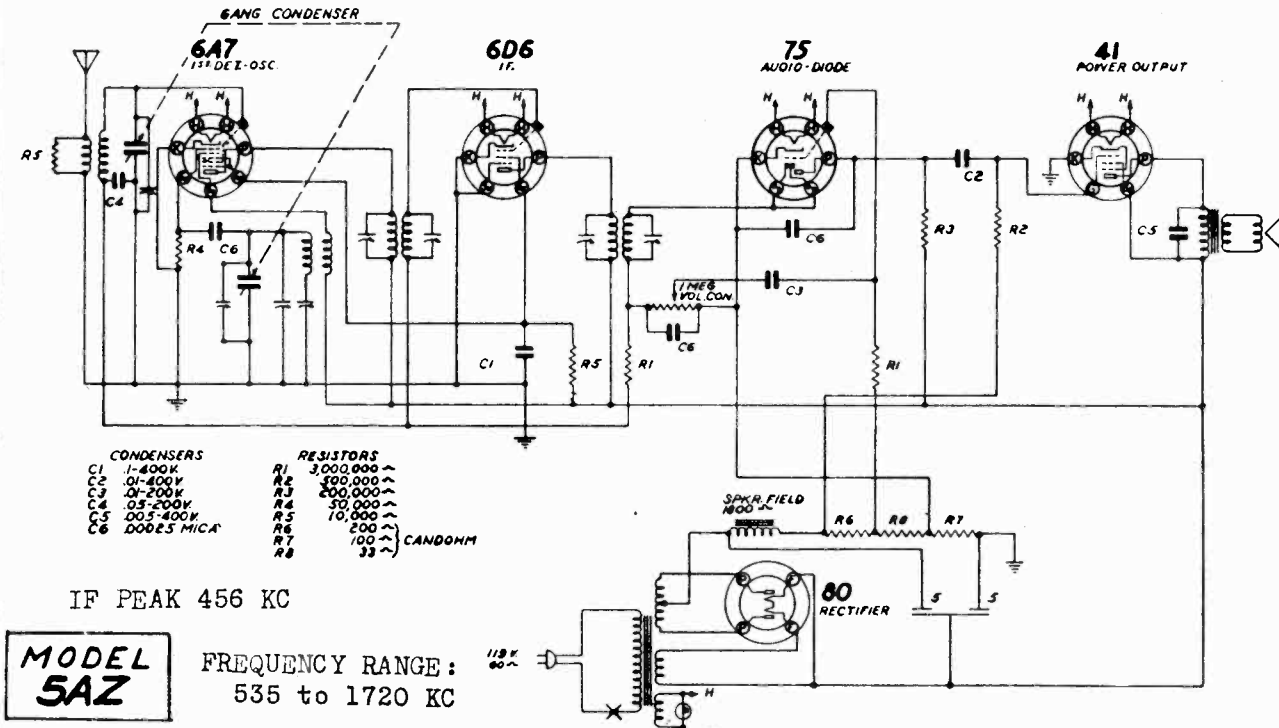
Release the push button and press in another button and hold down, tuning in another favorite station with tuning knob. Follow the same procedure for the remaining stations. Now hold tuning knob (side knob) securely and with coin or screw driver, tighten locking screw. This screw holds all stations in 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 5AZ
Schematic, Socket
Trimmers, Alignment

CONTINENTAL RADIO & TELEV. CO.



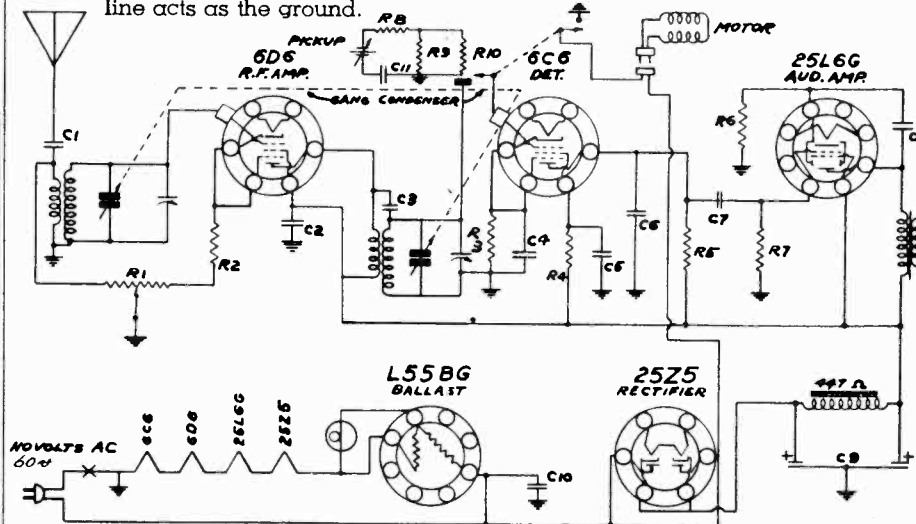
IF ALIGNMENT - Connect generator to control grid of 6A7 thru .05 MFD condenser, peak the IF transformer trimmers to 456 KC.

BROADCAST BAND - Generator at 1400 KC, connected to antenna thru 100 MMFD condenser. Receiver to 1400 KC, adjust front gang condenser trimmer to peak. Then adjust rear trimmer of gang condenser to peak. Generator at 600 KC, and receiver at approximately same frequency. While rocking the variable condenser across the signal adjust the oscillator padding condenser to maximum peak.

CONTINENTAL RADIO & TELEV. CO.

MODEL 5C
Schematic, Socket
Trimmers, Alignment
Parts

NOTE: Do not attempt to ground this receiver as one side of the power line acts as the ground.



5C PARTS LIST

- PAPER CONDENSERS**
 P143 .02 Mfd. 400 V.
 P142 .10 Mfd. 200 V.
 P164 .01 Mfd. 400 V.
 P141 .25 Mfd. 200 V.
 P2268 .0002 Mfd. 600 V.
- CARBON RESISTORS**
 P166 25,000 Ohm 1/4 Watt 20%
 P142 250 Ohm 1/4 Watt 10%
 P1114 2,000,000 Ohm 1/4 Watt 20%
 P137 500,000 Ohm 1/4 Watt
 P162 1,000,000 Ohm 1/4 Watt
 P139 250,000 Ohm 1/4 Watt
- WIRE WOUND RESISTORS**
 P2219 110 Ohm 1/2 Watt 100%
- MOULDED MICA CONDENSERS**
 P2220 .10 Mfd. 400 V. 25%
- ELECTROLYTIC CONDENSERS**
 P2216 Dual 16 Mfd. 150 W. V.
- ADJUSTABLE CONDENSERS**
 P2204 Gang Condenser
- TRANSFORMERS AND COILS**
 G5600 Interstage Coil Assembly
 G5598 Antenna Coil Assembly
- MISCELLANEOUS**
 P2213 Volume Control and Switch
 P2343 Tube Socket (Glass)
 P1928 Tube Sockets (Octal)
- P533 Tube Shield Base
 P531 Tube Shield Cap
 P530 Tube Shield
 P2215 Line Cord
 G5594 Dial and Drive Assembly
 P1503 Pilot Light Socket
 P1713 Pilot Light
 P2218 Speaker and Output Transformer
 P2225 Walnut Knob
 P2442 Phono Switch and Volume Control
 P2258 Socket and Plug Assembly
 P2368 Motor and Turn Table
 P2260 Pickup Arm

NR.	CAPACITY	TYPE
C1	.002 MFD.	400 V.
C2	.1	200 V.
C3	1.5 uuf.	GIMMICK
C4	.25 MM.	200 V.
C5	.1	200 V.
C6	.0002	600 V.
C7	.01	400 V.
C8	.02	400 V.
C9	16-16	180V. ELECT.
C10	.1	400 V.
C11	.005	600 V.

NR.	OHMS	WATTS
R1	15,000	
R2	250	1/4
R3	25,000	1/4
R4	2,000,000	1/4
R5	300,000	1/4
R6	110	1/2
R7	500,000	1/4
R8	1,000,000	1/4
R9	250,000	1/4
R10	500,000	

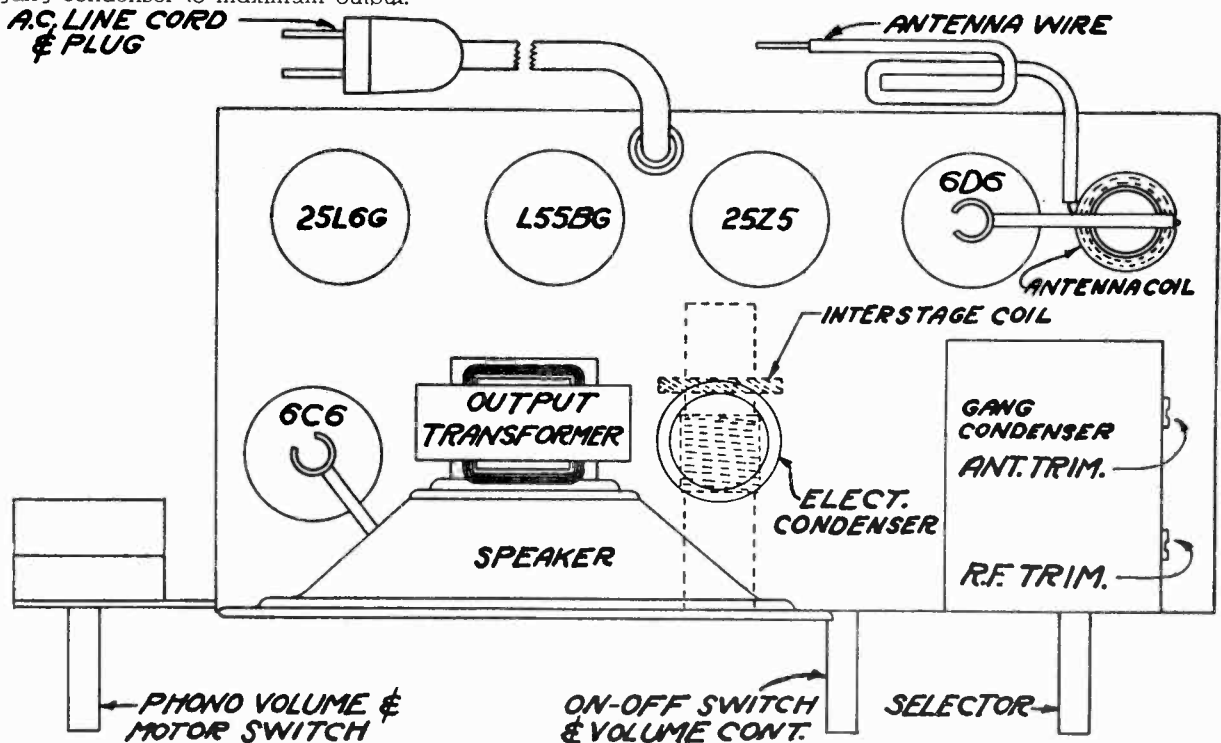
VOL. CONT.
 WIRE WOUND
 PHONO VOL. CONT.

SCHEMATIC DIAGRAM
 MODEL 5C
 PHONO COMBINATION

5 TUBE PHONOGRAPH RADIO

BROADCAST BAND A.C. TUNED RADIO FREQUENCY
 RANGE 535 - 1730 KILOCYCLES
 ALIGNMENT DATA AND SERVICING

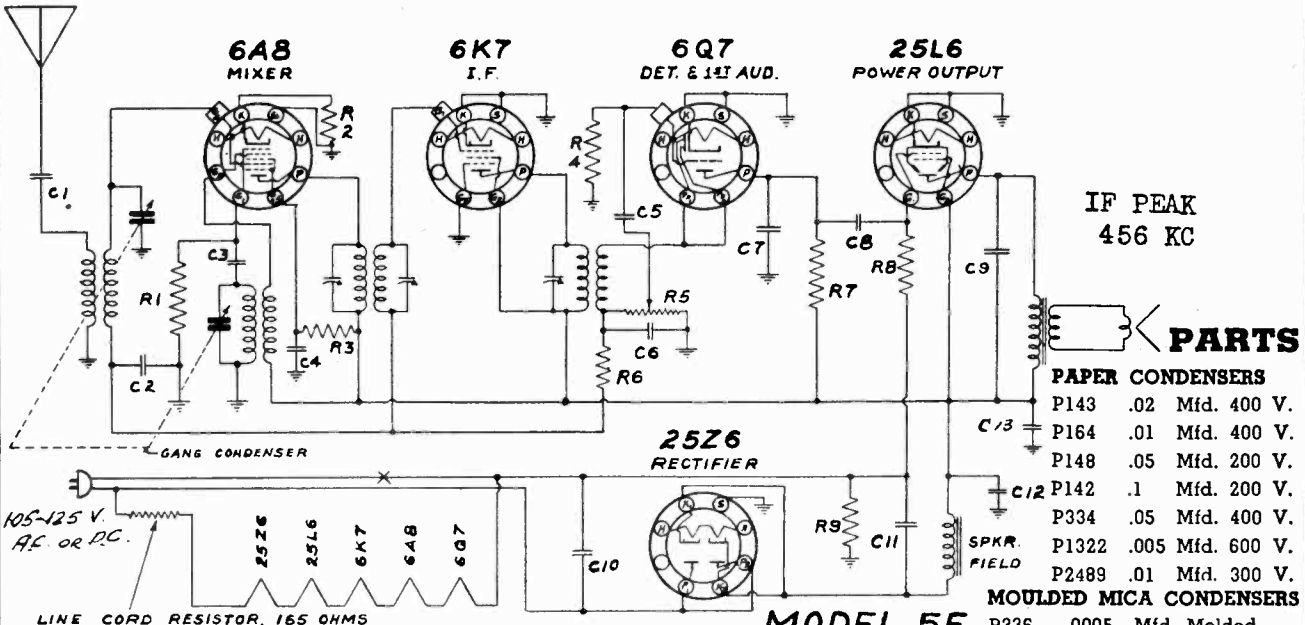
Connect a signal generator to the antenna lead of the receiver through a 100 Mmf. condenser. Set the dial pointer at 1400 KC. Set the generator at 1400 KC. Now adjust the antenna and RF trimmers of the gang condenser to maximum output.



MODEL 5E
Schematic, Socket

CONTINENTAL RADIO & TELEV. CO.

Trimmers, Parts
Alignment



RESISTORS

NR	OHMS	WATTS	SPL.
R1	50,000	1/4	
R2	110	1/4	
R3	40,000	1/4	
R4	15 M Ω	1/4	
R5	500,000		VOL. CONT.
R6	2 Meg	1/4	
R7	250,000	1/4	
R8	500,000	1/4	
R9	150	1/4	$\pm 10\%$

CONDENSERS

NR	Mfd.	TYPE	NR	Mfd.	TYPE
C1	.000250	MICA	C10	.05	400V.
C2	.02	400V.	C11	30.	150V.
C3	.000050	MICA	C12	10.	150V.
C4	.01	400V.	C13	.05	200V.
C5	.01	300V.			
C6	.00025	MICA			
C7	.0005	MICA			
C8	.01	400V.			
C9	.005	600V.			

PARTS

PAPER CONDENSERS

- P143 .02 Mfd. 400 V.
- P164 .01 Mfd. 400 V.
- P148 .05 Mfd. 200 V.
- P142 .1 Mfd. 200 V.
- P334 .05 Mfd. 400 V.
- P1322 .005 Mfd. 600 V.
- P2489 .01 Mfd. 300 V.

MOULDED MICA CONDENSERS

- P336 .0005 Mfd. Molded
- P817 .00025 Mfd. Molded
- P1382 .00005 Mfd. Molded

Note: Do not attempt to ground this receiver as one side of the power line acts as the ground.

RANGE 535 - 1730 KILOCYCLES

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

BROADCAST BAND ALIGNMENT

Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6A8) through a .05 or .1 mfd. condenser. Connect ground or test oscillator to chassis ground through a .1 mfd. condenser. Align all three I.F. trimmers to peak or maximum reading on the output meter. Adjust the oscillator to 1730 KC and connect the output to the antenna lead, through a .0001 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.

CARBON RESISTORS

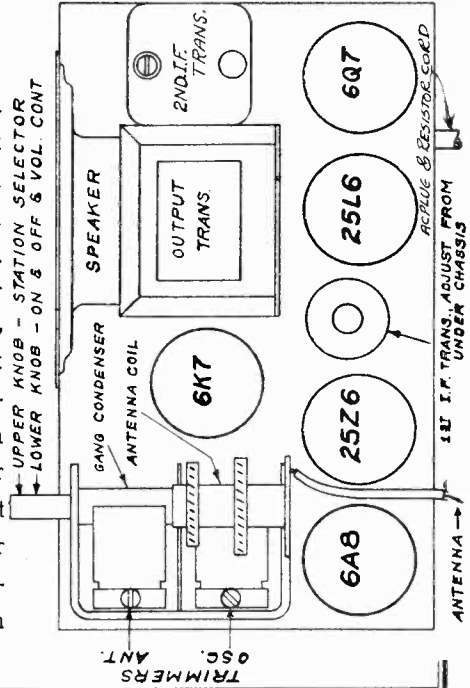
- P139 20,000 Ohm 1/4 Watt
- P137A 500,000 Ohm 1/2 Watt
- P1228 40,000 Ohm 1/4 Watt
- P417 50,000 Ohm 1/4 Watt
- P2200 110. Ohm 1/4 Watt 10%
- P2490 15,000,000 Ohm 1/4 Watt 20%
- P1114 2,000,000 Ohm 1/4 Watt 20%

ELECTROLYTIC CONDENSERS

- P2434 30 Mfd. 150 W. V.
- P2427 10 Mfd. 150 W. V.

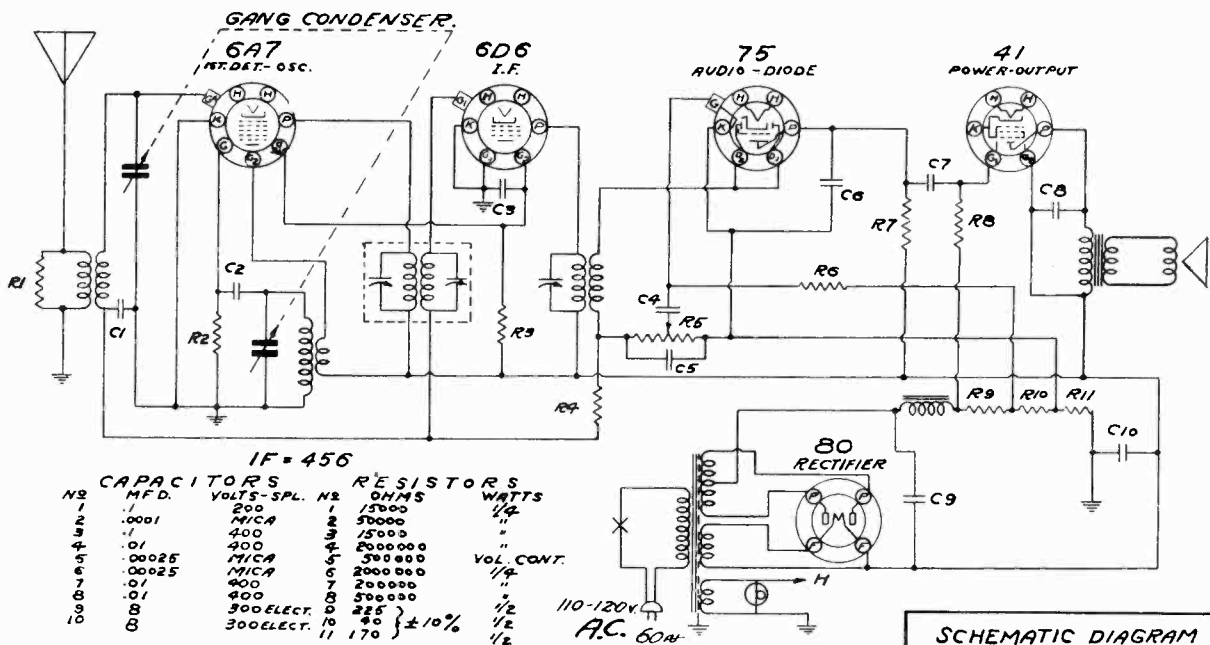
ADJUSTABLE CONDENSERS

- P2429 Gang Condenser



CONTINENTAL RADIO & TELEV. CO.

MODEL 5F
Schematic, Socket
Trimmers, Parts
Alignment



**BROADCAST BAND A.C. SUPERHETERODYNE
RANGE 535 - 1730 KILOCYCLES**

**CORRECT ALIGNMENT
PROCEDURE**

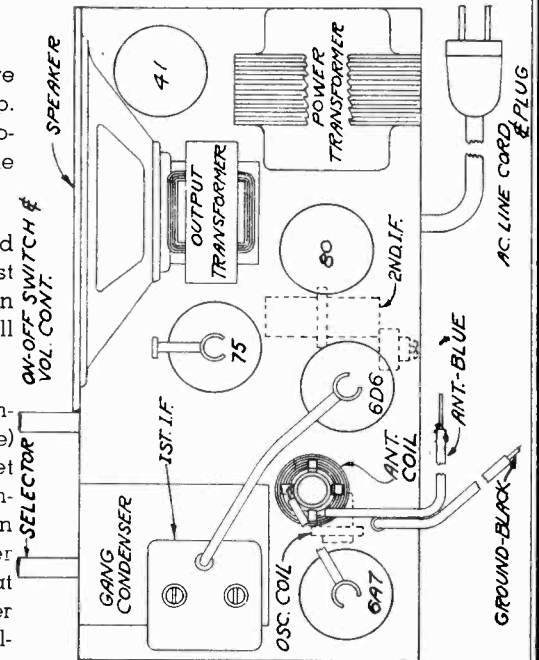
The intermediate frequency (I.F.) stage should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast Band alignment should be the next procedure.

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.



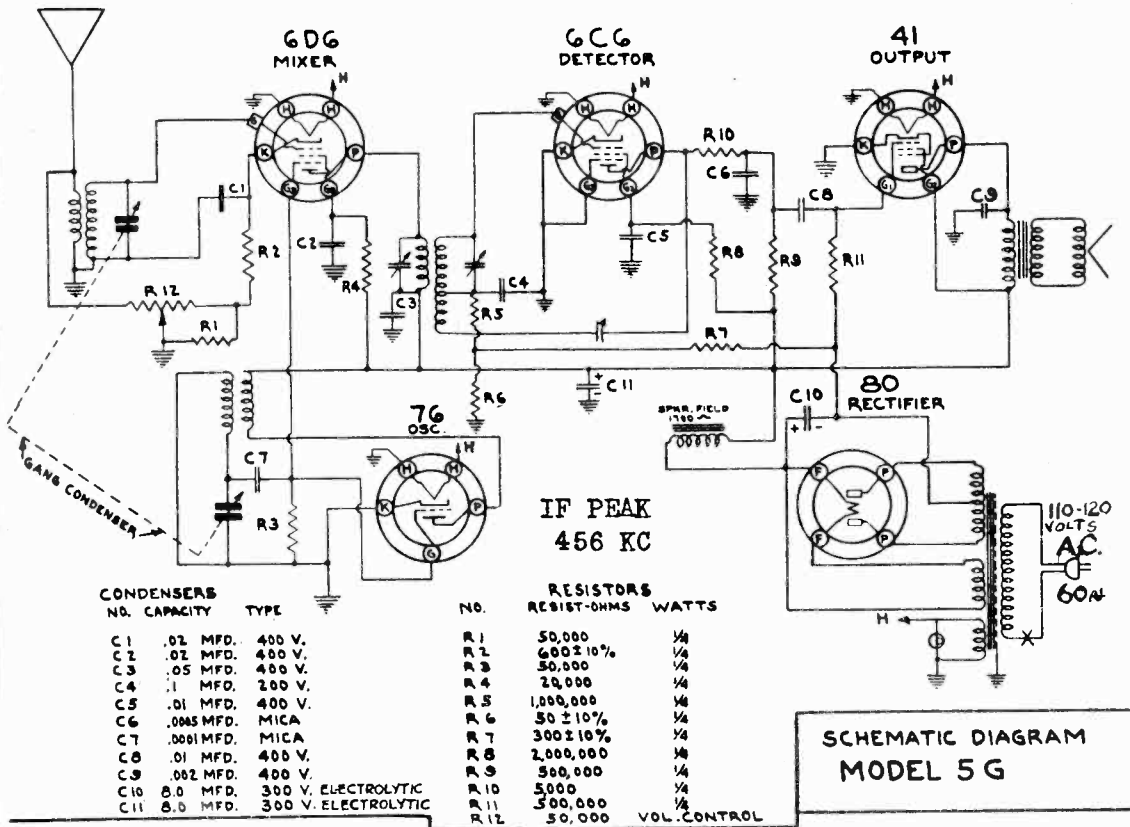
5F PARTS LIST

- PAPER CONDENSERS
- P164 .01 Mfd. 400 V.
- P142 .10 Mfd. 200 V.
- P276 .10 Mfd. 400 V.
- CARBON RESISTORS
- P258 15,000 Ohm 1/4 Watt
- P2186 2,000,000 Ohm 1/2 Watt
- P2340 40 Ohm 1/2 Watt ±10%
- P1890 225 Ohm 1/2 Watt ±10%
- P2488 170 Ohm 1/2 Watt ±10%
- P137 500,000 Ohm 1/4 Watt
- P1220 200,000 Ohm 1/4 Watt
- P1114 2,000,000 Ohm 1/4 Watt
- P417 500,000 1/4 Watt
- MOULDED MICA CONDENSERS
- P480 .0001 Mfd. Mica
- P817 .00025 Mfd. Mica
- ELECTROLYTIC CONDENSERS
- P2456 8 Mfd. 300 W. V.
- ADJUSTABLE CONDENSERS
- P2448 Gang Condenser
- TRANSFORMERS AND COILS
- P2484 1st I.F. Transformer
- P2393 Antenna Coil
- P2485 2nd I.F. Transformer
- P2486 Oscillator Coil
- P2453 Power Transformer
- MISCELLANEOUS
- P2450 Volume Control and Switch
- P506 6A7 Tube Socket
- P536 6D6 Tube Socket
- P521 75 Tube Socket
- P1277 41 Tube Socket
- P492 80 Tube Socket
- P591 Tube Shield Cap
- P530 Tube Shield
- P533 Tube Shield Base
- P929 AC Line Cord
- G5648 Dial and Drive Assembly
- P1503 Pilot Light Socket
- P1504 Pilot Light
- P2454 Speaker and Output Transformer
- P2459 Walnut Knobs
- P2460 Ivory Knobs

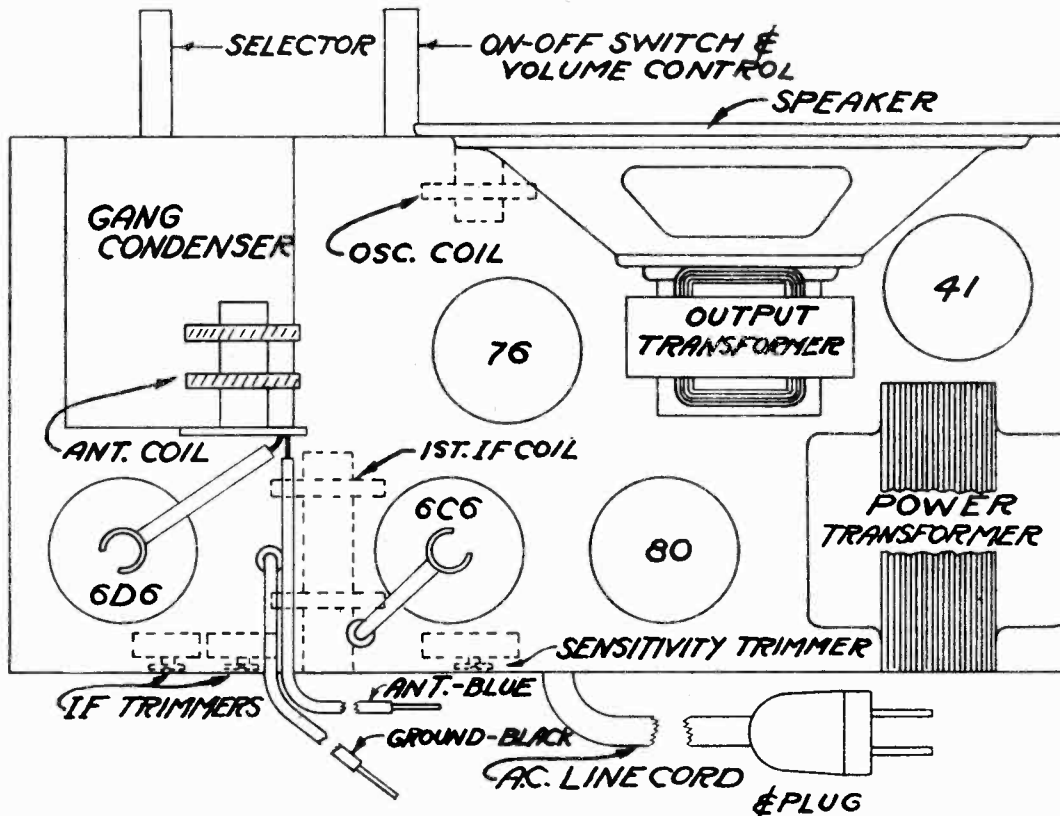
MODEL 5G

CONTINENTAL RADIO & TELEV. CO.

Schematic, Socket Trimmers, Alignment



**BROADCAST BAND A.C. SUPERHETERODYNE
RANGE 535 - 1730 KILOCYCLES**

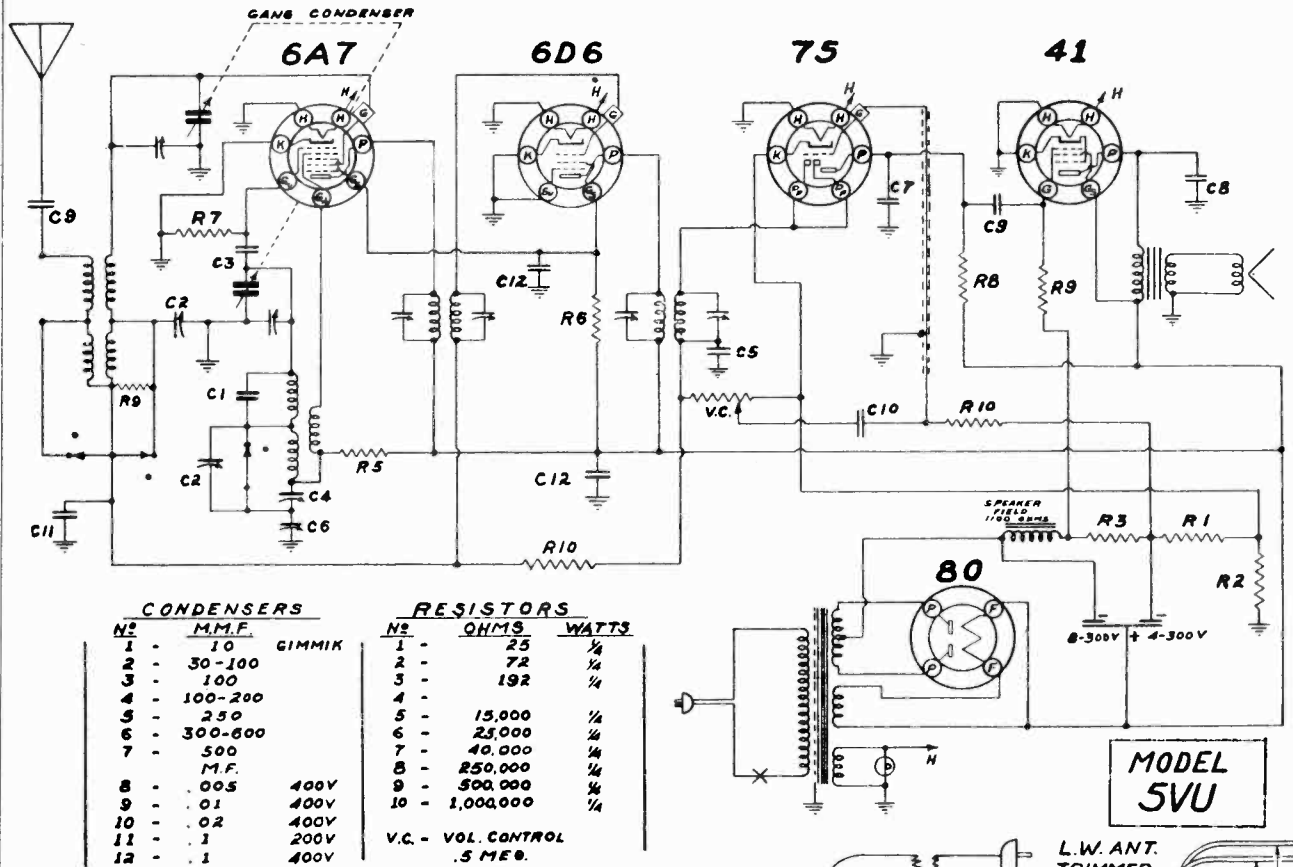


ALIGNMENT DATA AND SERVICING

Connect the signal generator through a .1 mfd. condenser to the grid of the 6D6 tube. Connect an output meter across the voice coil of the speaker. Set the generator to 456 K.C. and align the I.F. transformer of the receiver for maximum reading on the output meter. Set the sensitivity control radio to 1400 K.C. Align the oscillator and antenna trimmers on the about 1/4 turn counter-clockwise from the point where the whistles start gang condenser for maximum output on the meter. and re-align the I.F.

CONTINENTAL RADIO & TELEV. CO.

MODEL 5VU
Schematic, Socket
Trimmers, Alignment



CONDENSERS		
№	M.M.F.	
1	10	GIMMIK
2	30-100	
3	100	
4	100-200	
5	250	
6	300-600	
7	500	
8	.005	400V
9	.01	400V
10	.02	400V
11	.1	200V
12	.1	400V

RESISTORS		
№	OHMS	WATTS
1	25	1/4
2	72	1/4
3	192	1/4
4		
5	15,000	1/4
6	25,000	1/4
7	40,000	1/4
8	250,000	1/4
9	500,000	1/4
10	1,000,000	1/4

V.C. - VOL. CONTROL
.5 MEΩ.

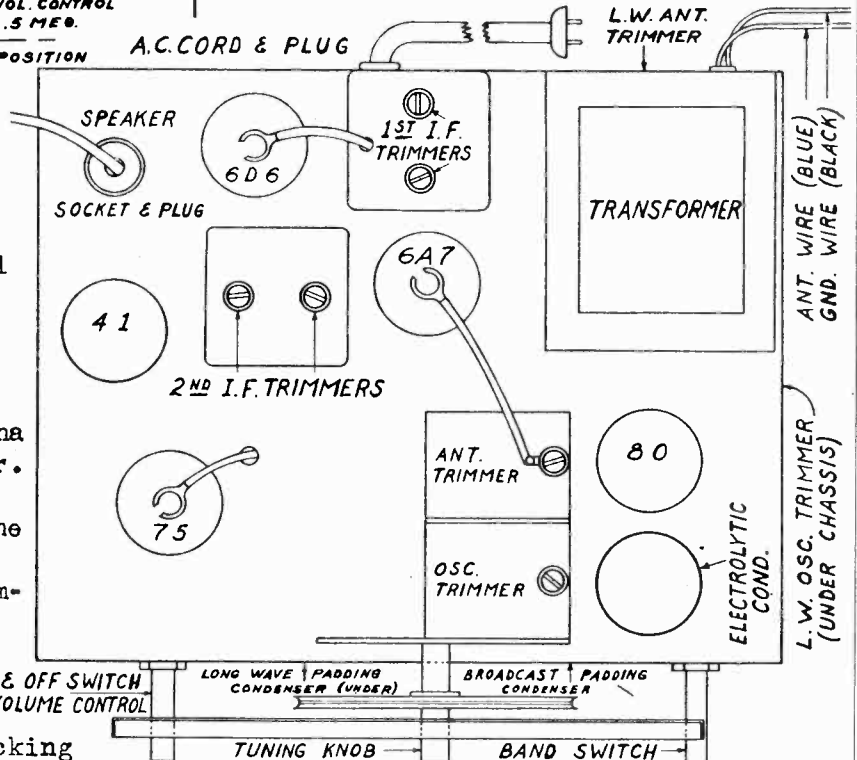
SWITCHES IN BROADCAST POSITION
IF PEAK 456 KC

FREQUENCY RANGES -
535 to 1650 KC
375 to 150 KC

IF ALIGNMENT - Generator at 456 KC, connected to control grid of 6A7 thru a .05 MFD condenser. Peak IF trimmers in transformer shield cans.

BROADCAST - Generator at 1400 KC, connected to antenna lead thru 100 MMFD condenser. Peak front gang condenser trimmer, with dial set at the 1400 KC position. Next peak the rear gang condenser trimmer for maximum signal. Generator and receiver at 600 KC, peak the oscillator padding condenser for maximum signal while rocking the variable condenser across signal.

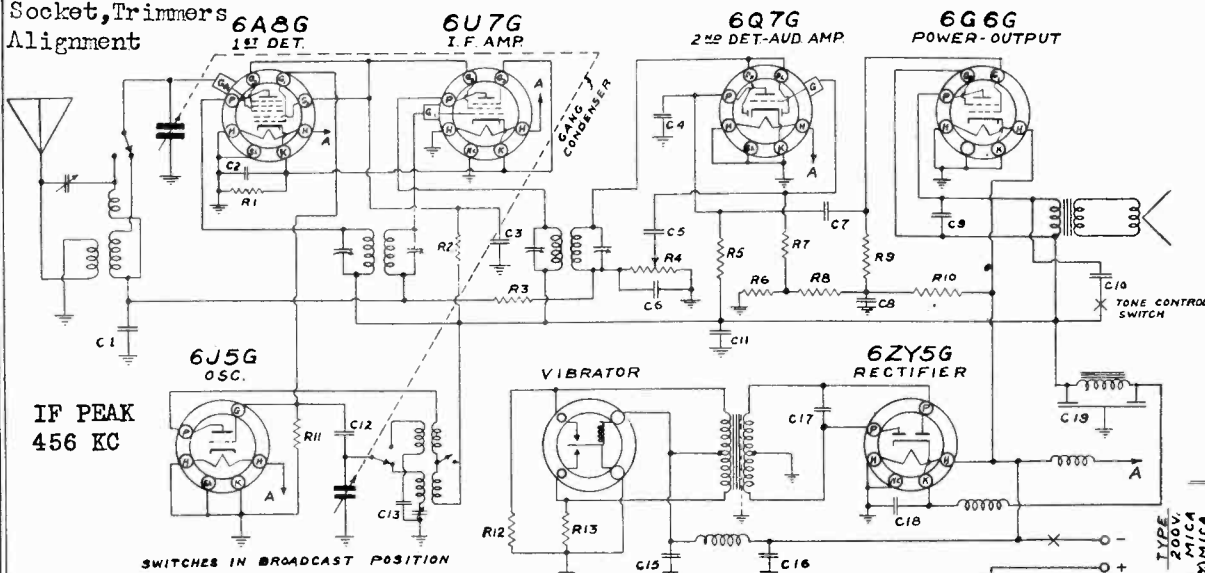
LONG WAVE - Generator at 375 KC, gang condenser open, peak oscillator trimmer. Generator at 325 KC, rotate condenser toward low end of dial to locate signal, then peak antenna trimmer. Pad the oscillator at 160 KC while rocking condenser.



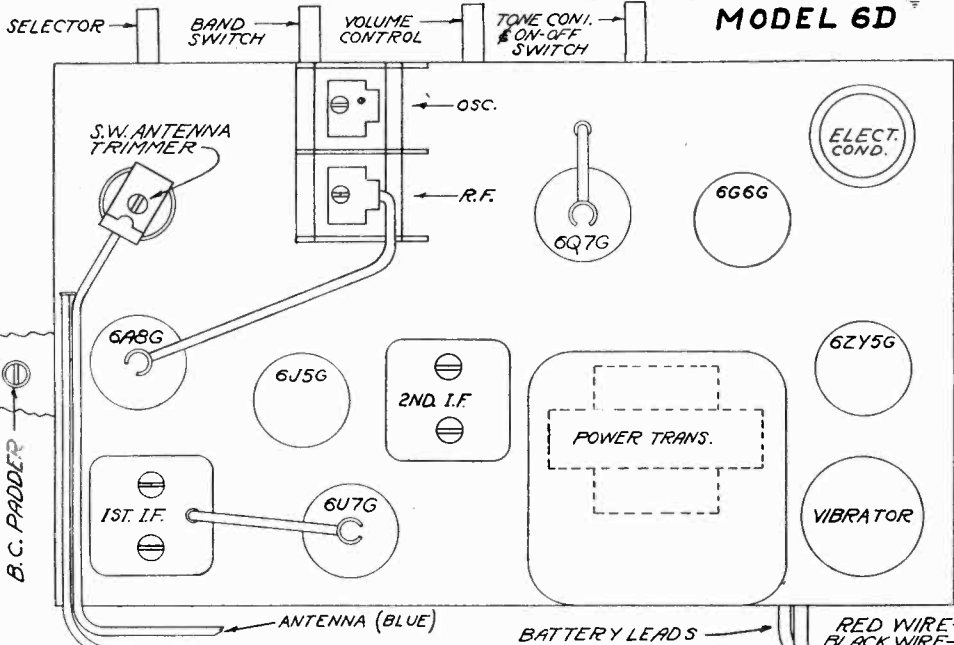
MODEL 6D
Schematic
Socket, Trimmers
Alignment

CONTINENTAL RADIO & TELEV. CO.

MODEL 7A
Alignment



This receiver requires a good ground.



RESISTORS	OHMS	WATTS	SPL. TOL.
1	15,000	1/4	± 10%
2	20,000	1/4	± 10%
3	50,000	1/4	± 10%
4	75,000	1/4	± 10%
5	100,000	1/4	± 10%
6	150,000	1/4	± 10%
7	200,000	1/4	± 10%
8	300,000	1/4	± 10%
9	400,000	1/4	± 10%
10	500,000	1/4	± 10%
11	600,000	1/4	± 10%
12	700,000	1/4	± 10%
13	800,000	1/4	± 10%
14	900,000	1/4	± 10%
15	1,000,000	1/4	± 10%

CONDENSERS	TYPE	VOLTS	CAP. VALUE
1	MICA	50	.0005
2	MICA	50	.001
3	MICA	50	.0025
4	MICA	50	.005
5	MICA	50	.01
6	MICA	50	.025
7	MICA	50	.05
8	MICA	50	.1
9	MICA	50	.25
10	MICA	50	.5
11	MICA	50	1.0
12	MICA	50	2.0
13	MICA	50	5.0
14	MICA	50	10.0
15	MICA	50	20.0
16	MICA	50	50.0
17	MICA	50	100.0
18	MICA	50	200.0
19	MICA	50	500.0
20	MICA	50	1000.0
21	MICA	50	2000.0
22	MICA	50	5000.0
23	MICA	50	10000.0
24	MICA	50	20000.0
25	MICA	50	50000.0
26	MICA	50	100000.0
27	MICA	50	200000.0
28	MICA	50	500000.0
29	MICA	50	1000000.0
30	MICA	50	2000000.0
31	MICA	50	5000000.0
32	MICA	50	10000000.0
33	MICA	50	20000000.0
34	MICA	50	50000000.0
35	MICA	50	100000000.0
36	MICA	50	200000000.0
37	MICA	50	500000000.0
38	MICA	50	1000000000.0
39	MICA	50	2000000000.0
40	MICA	50	5000000000.0
41	MICA	50	10000000000.0
42	MICA	50	20000000000.0
43	MICA	50	50000000000.0
44	MICA	50	100000000000.0
45	MICA	50	200000000000.0
46	MICA	50	500000000000.0
47	MICA	50	1000000000000.0
48	MICA	50	2000000000000.0
49	MICA	50	5000000000000.0
50	MICA	50	10000000000000.0
51	MICA	50	20000000000000.0
52	MICA	50	50000000000000.0
53	MICA	50	100000000000000.0
54	MICA	50	200000000000000.0
55	MICA	50	500000000000000.0
56	MICA	50	1000000000000000.0
57	MICA	50	2000000000000000.0
58	MICA	50	5000000000000000.0
59	MICA	50	10000000000000000.0
60	MICA	50	20000000000000000.0
61	MICA	50	50000000000000000.0
62	MICA	50	100000000000000000.0
63	MICA	50	200000000000000000.0
64	MICA	50	500000000000000000.0
65	MICA	50	1000000000000000000.0
66	MICA	50	2000000000000000000.0
67	MICA	50	5000000000000000000.0
68	MICA	50	10000000000000000000.0
69	MICA	50	20000000000000000000.0
70	MICA	50	50000000000000000000.0
71	MICA	50	100000000000000000000.0
72	MICA	50	200000000000000000000.0
73	MICA	50	500000000000000000000.0
74	MICA	50	1000000000000000000000.0
75	MICA	50	2000000000000000000000.0
76	MICA	50	5000000000000000000000.0
77	MICA	50	10000000000000000000000.0
78	MICA	50	20000000000000000000000.0
79	MICA	50	50000000000000000000000.0
80	MICA	50	100000000000000000000000.0
81	MICA	50	200000000000000000000000.0
82	MICA	50	500000000000000000000000.0
83	MICA	50	1000000000000000000000000.0
84	MICA	50	2000000000000000000000000.0
85	MICA	50	5000000000000000000000000.0
86	MICA	50	10000000000000000000000000.0
87	MICA	50	20000000000000000000000000.0
88	MICA	50	50000000000000000000000000.0
89	MICA	50	100000000000000000000000000.0
90	MICA	50	200000000000000000000000000.0
91	MICA	50	500000000000000000000000000.0
92	MICA	50	1000000000000000000000000000.0
93	MICA	50	2000000000000000000000000000.0
94	MICA	50	5000000000000000000000000000.0
95	MICA	50	10000000000000000000000000000.0
96	MICA	50	20000000000000000000000000000.0
97	MICA	50	50000000000000000000000000000.0
98	MICA	50	100000000000000000000000000000.0
99	MICA	50	200000000000000000000000000000.0
100	MICA	50	500000000000000000000000000000.0

ALIGNMENT

The alignment of this receiver requires the use of a test oscillator which will cover the frequencies of 456, 600, 1400, 1730, 6000, 16,000 and 18,100 KC and an output meter which is to be connected across the primary or secondary of the output transformer. 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, the Short Wave Band 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 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 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.

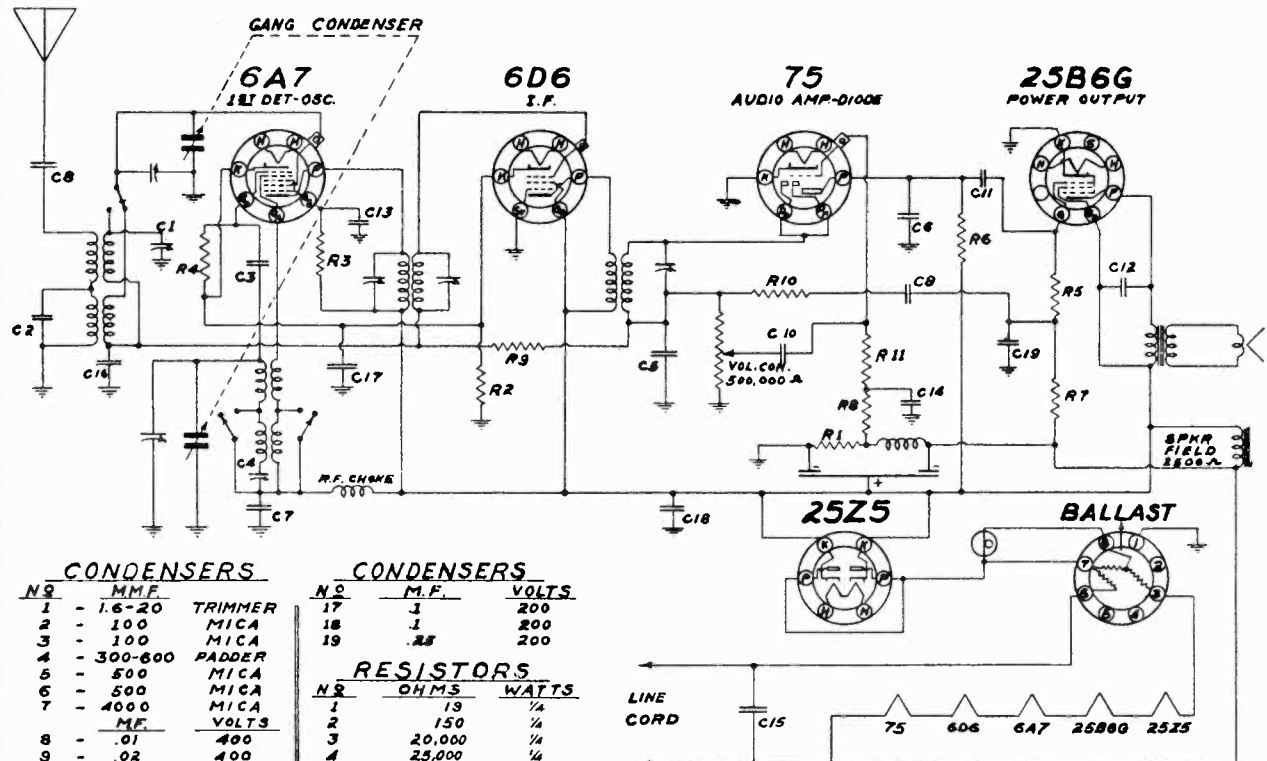
SHORT WAVE BAND ALIGNMENT

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.

*18,100 KC for Model 7A

CONTINENTAL RADIO & TELEV. CO.

MODEL 6H
Schematic, Socket
Trimmers, Alignment



CONDENSERS

N ^o	M.F.	TIMMER
1	1.6-20	TRIMMER
2	100	MICA
3	100	MICA
4	300-600	PADDER
5	500	MICA
6	500	MICA
7	4000	MICA
	M.F.	VOLTS
8	.01	400
9	.02	400
10	.02	400
11	.02	400
12	.02	400
13	.05	200
14	.05	200
15	.05	400
16	.1	200

POWER CORD & PLUG

CONDENSERS

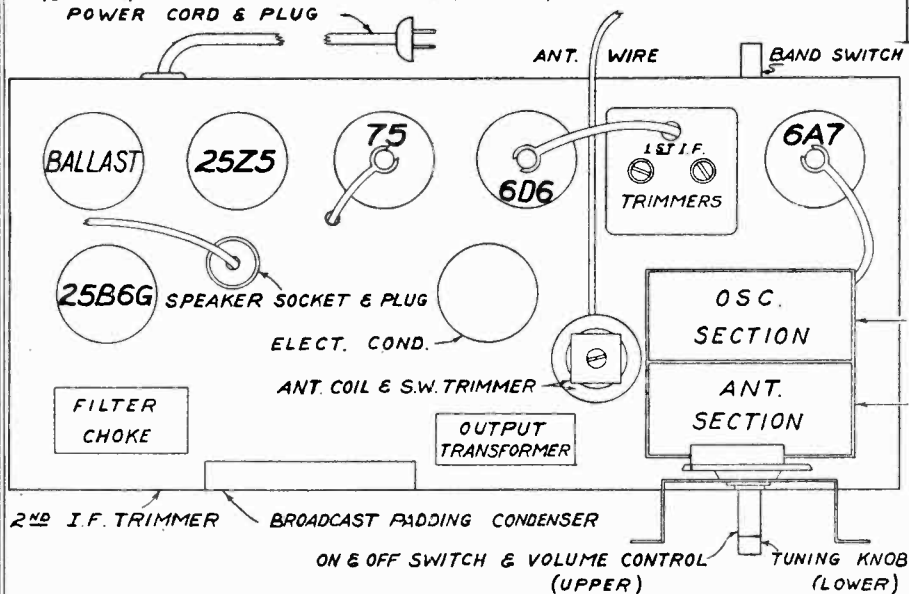
N ^o	M.F.	VOLTS
17	1	200
18	1	200
19	.25	200

RESISTORS

N ^o	OHMS	WATTS
1	15	1/4
2	150	1/4
3	20,000	1/4
4	25,000	1/4
5	100,000	1/4
6	250,000	1/4
7	400,000	1/4
8	500,000	1/4
9	1 MEG	1/4
10	1 MEG	1/4
11	1 MEG	1/4

SWITCHES IN BROADCAST POSITION
IF PEAK 456 KC

**SCHEMATIC DIAGRAM
MODEL 6H**



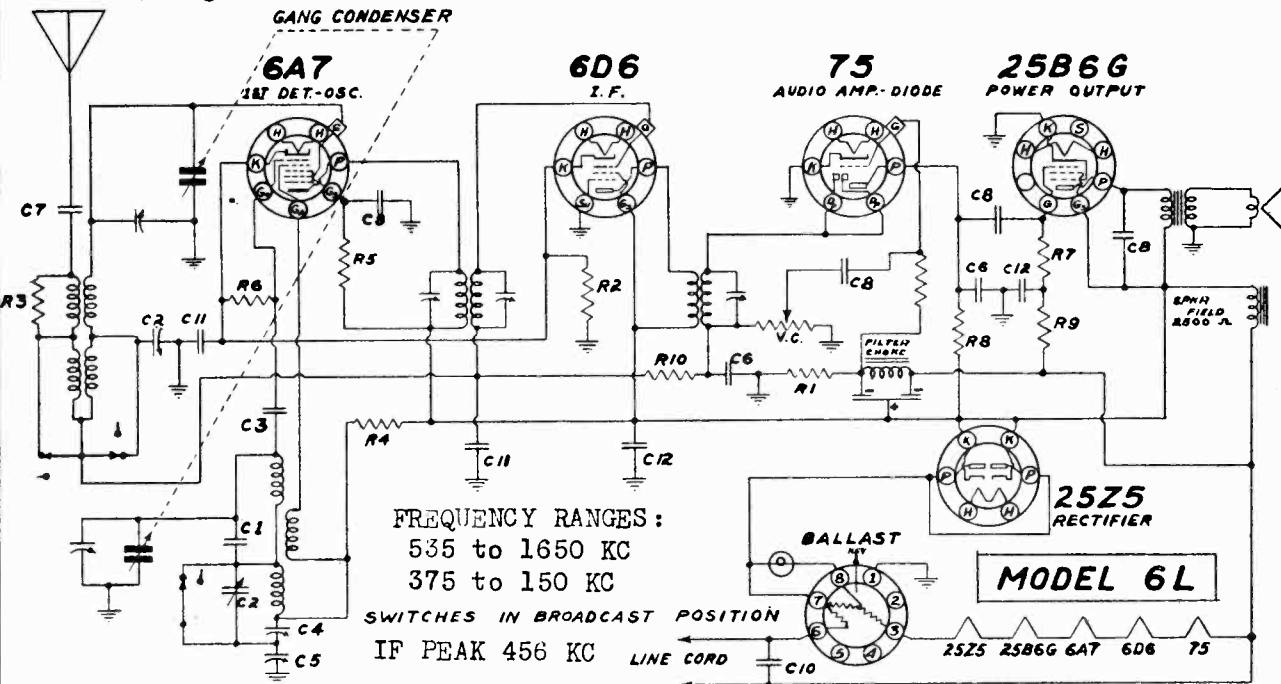
FREQUENCY RANGES :
535 to 1750 KC
5600 to 18100 KC

IF ALIGNMENT -
Generator at 456 KC, connected to the control grid of the 6A7 tube, thru a .05 MFD condenser. Adjust IF trimmers to peak, they are located; two in transformer can above chassis, and other on front apron of chassis, is the left hand section.

BROADCAST BAND ALIGNMENT - Generator at 1400 KC, connected to antenna lead of receiver thru 100 MMFD condenser. Dial at 1400 KC, adjust rear gang condenser trimmer (OSC) to peak, then front section of gang condenser to peak. Generator at 600 KC, receiver dial at approximately 600 KC, while rocking the variable condenser across signal adjust oscillator padder to maximum peak. SHORTWAVE BAND - Generator at 600 KC, rotate condenser from high frequency end until generator signal is heard, then peak trimmer on antenna coil. No other shortwave band adjustments required on this receiver. Repeat all adjustments.

MODEL 6L
Schematic, Socket
Trimmers, Alignment

CONTINENTAL RADIO & TELEV. CO.



FREQUENCY RANGES:

535 to 1650 KC

375 to 150 KC

SWITCHES IN BROADCAST POSITION

IF PEAK 456 KC

MODEL 6L

POWER CORD & PLUG

LONG WAVE TRIMMERS

O.S.C.

ANT.

BAND SWITCH

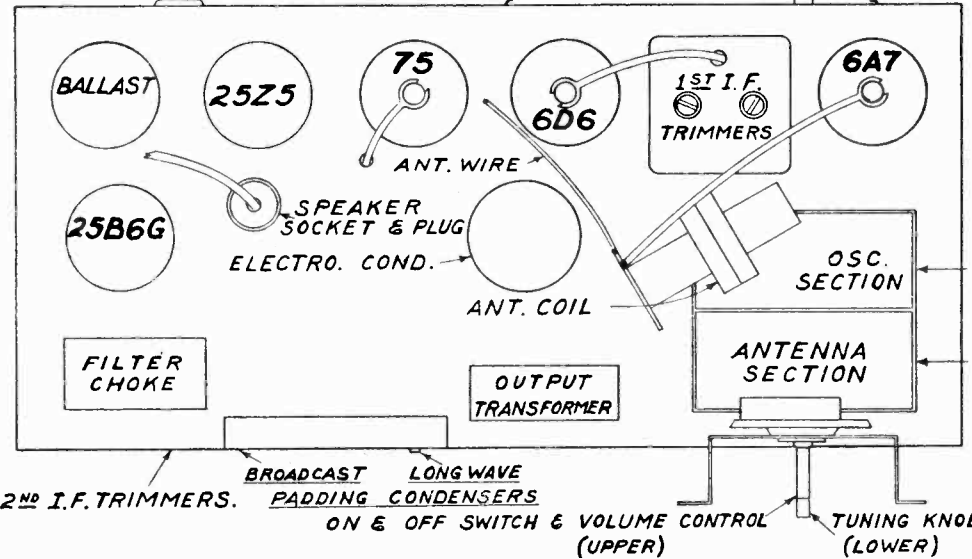
CONDENSERS

NR.	M.M.F.	
C1	10	GIMMICK
C2	30-100	MICA
C3	100	"
C4	100-200	"
C5	300-600	"
C6	500	"
NR.	M.F.	
C7	.01	400 V.
C8	.02	400 V.
C9	.05	200 V.
C10	.05	400 V.
C11	.1	200 V.
C12	.25	200 V.

RESISTORS

NR.	OHMS	WATTS
R1	18	
R2	*	300
R3		8,000
R4		15,000
R5		20,000
R6		25,000
R7		100,000
R8		250,000
R9		400,000
R10		1,000,000

V.C. - 1/2 MEG. VOLUME CON.
* TOLERANCE ± 10%



2ND I.F. TRIMMERS. BROADCAST LONG WAVE
PADDING CONDENSERS

ON & OFF SWITCH & VOLUME CONTROL (UPPER)
TUNING KNOB (LOWER)

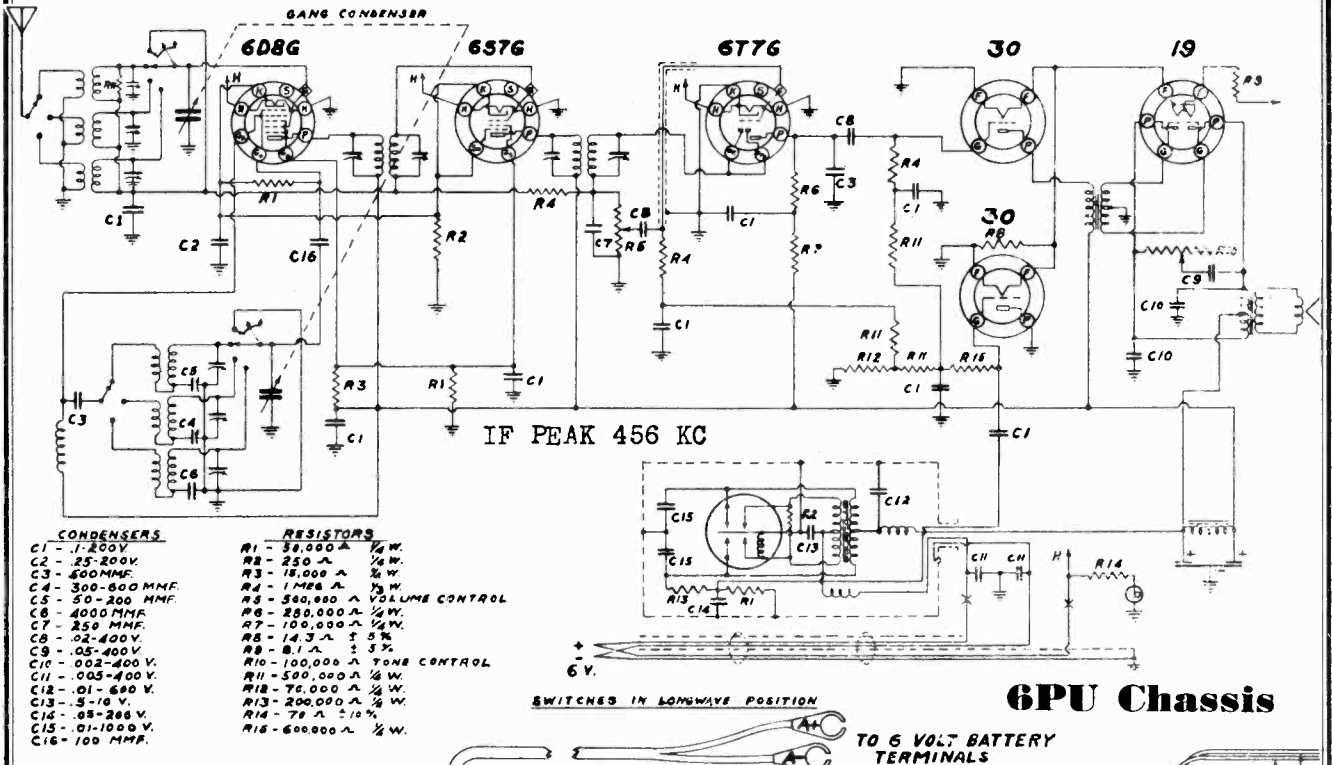
IF ALIGNMENT - Generator at 456 KC, and connected to the control grid of the 6A7 thru a .05 MFD condenser. Align the three IF trimmers to maximum peak. The three trimmers are located as follows: two are located in the IF can on the top of the chassis, the third is located on the front apron of the chassis and is the left hand section.

BROADCAST - Generator at 1400 KC, connected to the antenna thru a 100 MMF condenser. Dial set at 1400 KC, peak rear trimmer of gang condenser (OSC), then peak front trimmer. Shift generator and dial to 600 KC, while rocking gang condenser peak the oscillator padding condenser for maximum resonance.

LONG WAVE - Generator at 375 KC, peak oscillator trimmer, gang condenser completely open. Generator at 325 KC, peak the antenna trimmer, mounted on longwave antenna coil, after signal has been found by rotation condenser from high frequency end of dial. Pad the oscillator condenser at 160 KC while rocking condenser.

CONTINENTAL RADIO & TELEV. CO.

MODEL 6PU
Schematic, Socket
Trimmers, Alignment



6PU Chassis

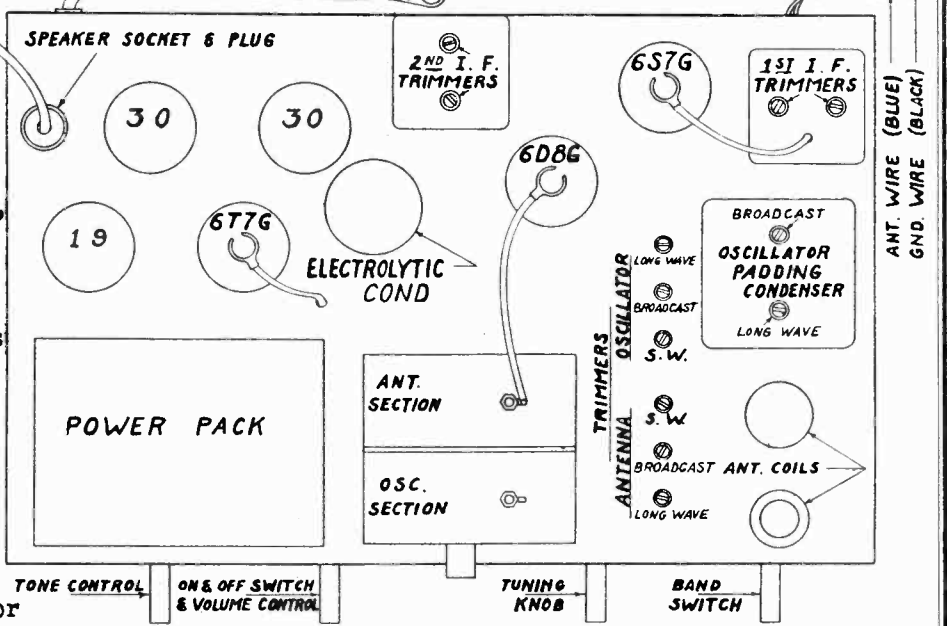
FREQUENCY RANGES :
 550 to 1700 KC
 150 to 375 KC
 5.6 to 18.1 MC

IF ALIGNMENT-Generator at 456 KC, connected to control grid of 6D8G thru a .05 MFD condenser, then peak the IF transformer trimmers for maximum response.

BROADCAST BAND - Generator at 1730 KC, the gang condenser out of mesh, peak oscillator trimmer. Dial and Generator at 1400 KC, peak antenna and pre-selector trimmers. Generator and dial at 600 KC, while

rocking variable condenser across signal, peak the oscillator padder to maximum. SHORTWAVE BAND - Generator to 18.1 MC, variable condenser at minimum, peak the S.W. oscillator trimmer. Generator and dial at 16 MC, peak antenna trimmer. No provisions for low frequency padding have been made in this band. Check response at 6 MC.

LONGWAVE BAND - Set gang condenser to minimum and generator to 380 KC, peak the longwave oscillator trimmer, then shift the generator signal to 325 KC, peak the antenna trimmer. Next set the generator to 160 KC, — then peak the longwave oscillator padding condenser to maximum response while rocking variable condenser.

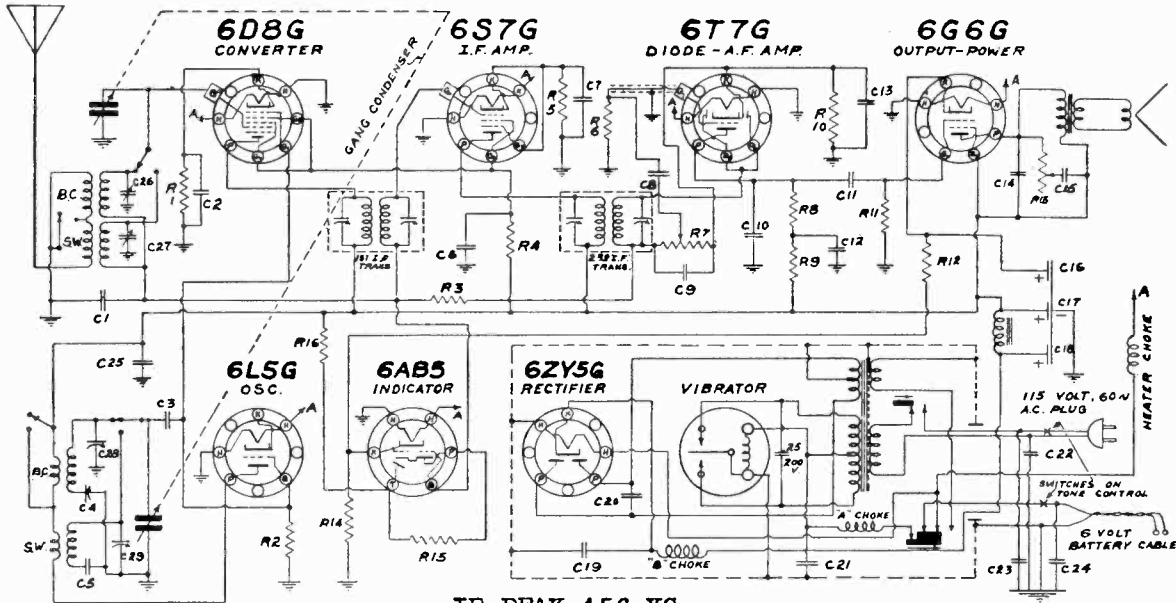


MODEL 7A

Schematic, Socket
Trimmers, Alignment

CONTINENTAL RADIO & TELEV. CO.

FOR ALIGNMENT DATA AND SERVICING-SEE MODEL 6D.



IF PEAK 456 KC

CONDENSERS			
No	CAPACITY	TYPE	No
1	.05 Mfd.	200V.	14
2	.05 Mfd.	200V.	15
3	50 μ mf	MICA	16
4	300-600 μ mf	MICA	17
5	4000 μ mf	M. 55%	18
6	.1 Mfd.	200V.	19
7	.05 "	200V.	20
8	.01 "	400V.	21
9	250 μ mf	MICA	22
10	2.50 "	"	23
11	.01 Mfd.	100V.	24
12	.1 "	200V.	25
13	.5 "	200V.	

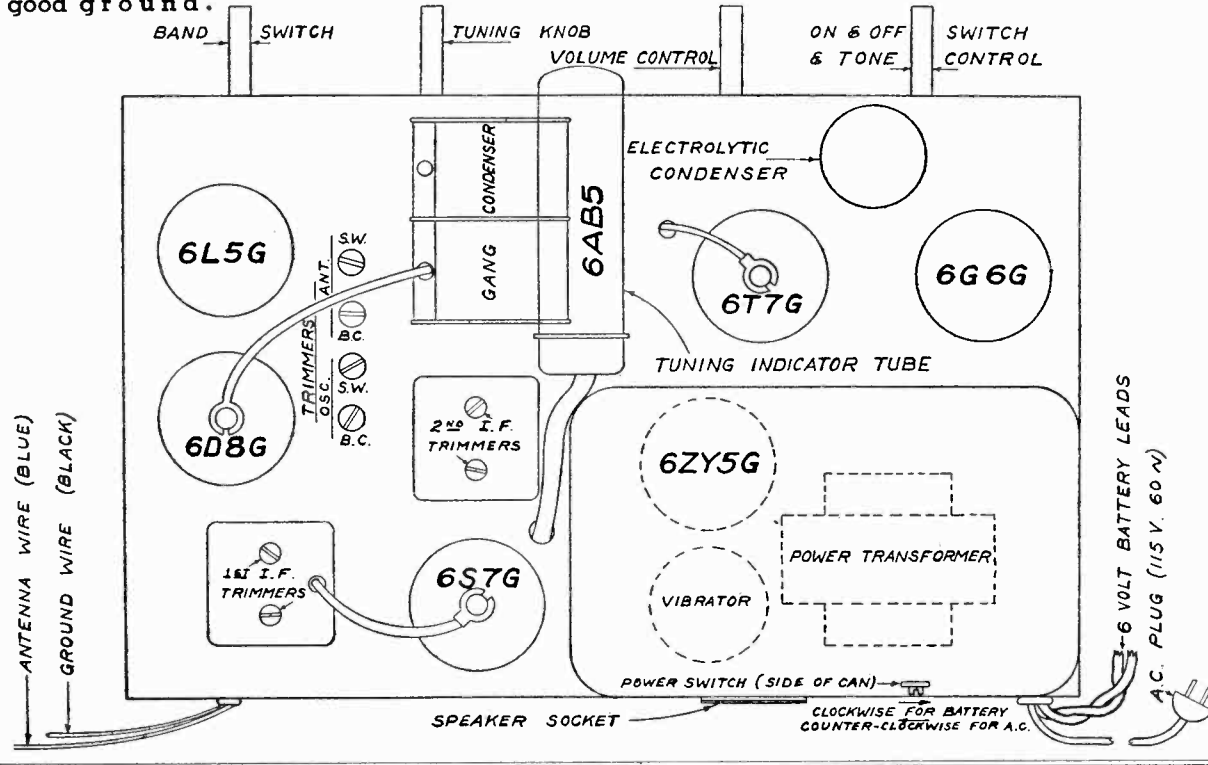
No	OHMS	WATTS	SPL. TOL.
1	1500	1/4	$\pm 10\%$
2	40,000	1/4	$\pm 10\%$
3	1,000,000	1/4	$\pm 10\%$
4	30,000	1/4	$\pm 10\%$
5	1,500	1/4	$\pm 10\%$
6	1,000,000	1/4	$\pm 10\%$
7	500,000	1/4	$\pm 10\%$
8	500,000	1/4	$\pm 10\%$
9	200,000	1/4	$\pm 10\%$
10	10,000	1/4	$\pm 10\%$
11	500,000	1/4	$\pm 10\%$
12	325	1/4	$\pm 10\%$
13	100,000	1/4	$\pm 10\%$

RESISTORS			
No	OHMS	WATTS	SPL. TOL.
14	110	1/4	$\pm 10\%$
15	250,000	1/4	$\pm 10\%$
16	15,000	1/4	$\pm 10\%$

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

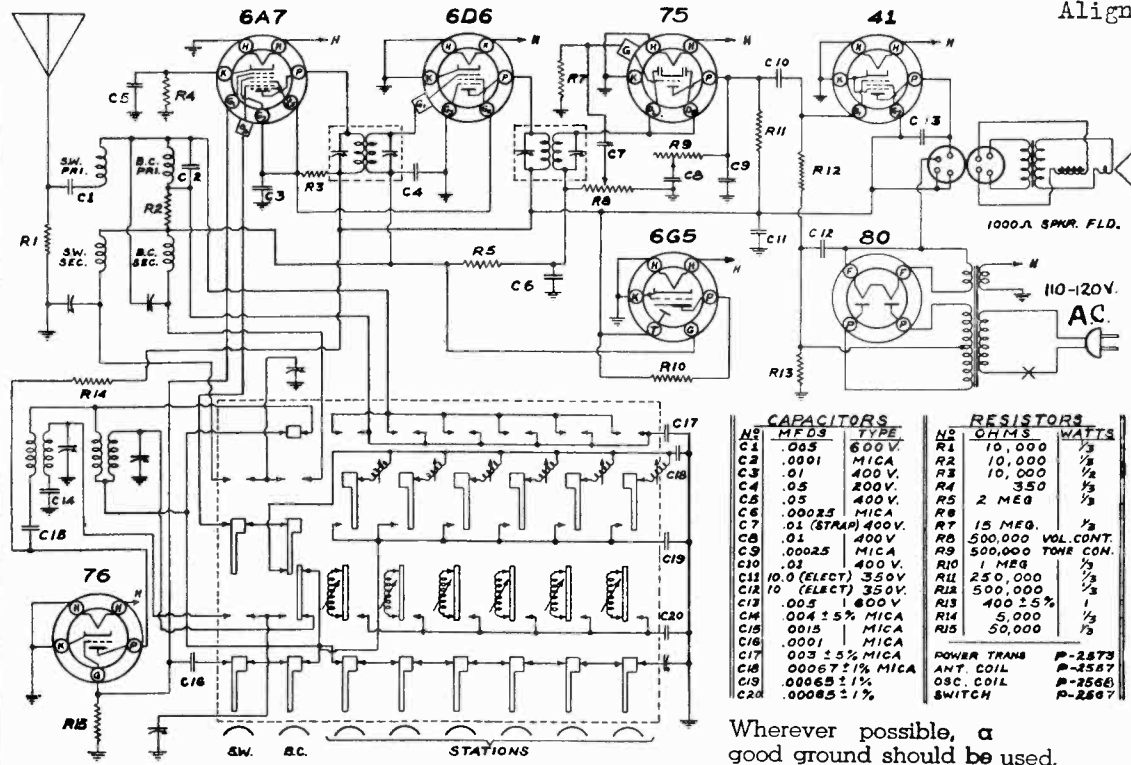
SCHEMATIC DIAGRAM
MODEL 7A

This receiver requires a good ground.



CONTINENTAL RADIO & TELEV. CO.

MODEL 7G
Schematic, Socket
Trimmers, Tuner
Alignment

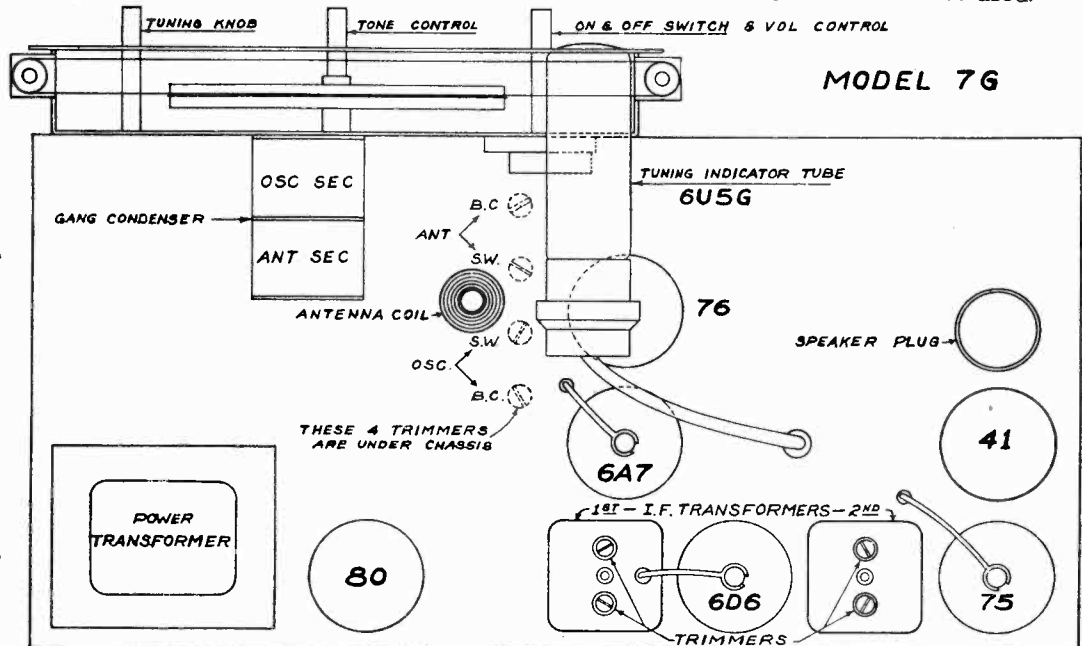


IF PEAK
456 KC

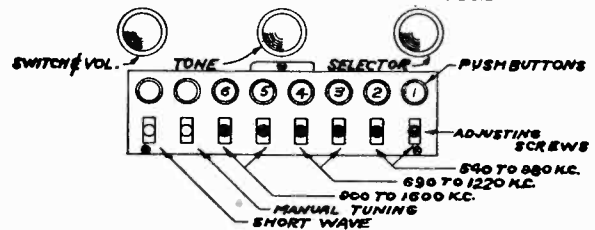
CAPACITORS			RESISTORS		
NO.	MFD'S	TYPE	NO.	OHMS	WATTS
C1	.005	600V.	R1	10,000	1/2
C2	.0001	MICA	R2	10,000	1/2
C3	.01	400V.	R3	10,000	1/2
C4	.05	200V.	R4	350	1/2
C5	.05	400V.	R5	2 MEG.	1/2
C6	.00025	MICA	R6		
C7	.01 (STRAP)	400V.	RT	15 MEG.	1/2
C8	.01	400V.	R8	500,000	VOL. CONT.
C9	.00025	MICA	R9	500,000	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	1,800V.	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	.00065 ± 1%	MICA			

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-

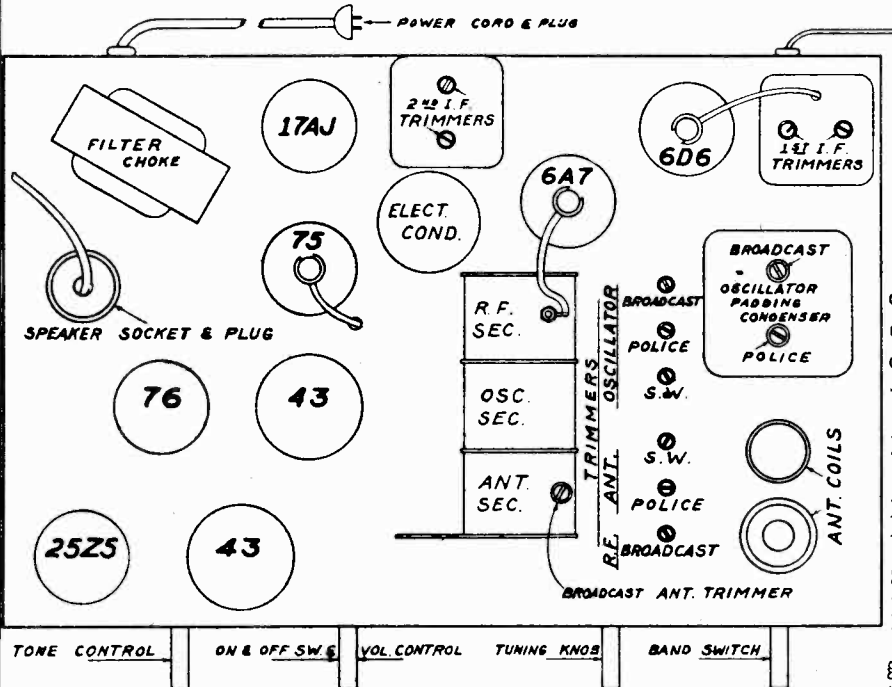
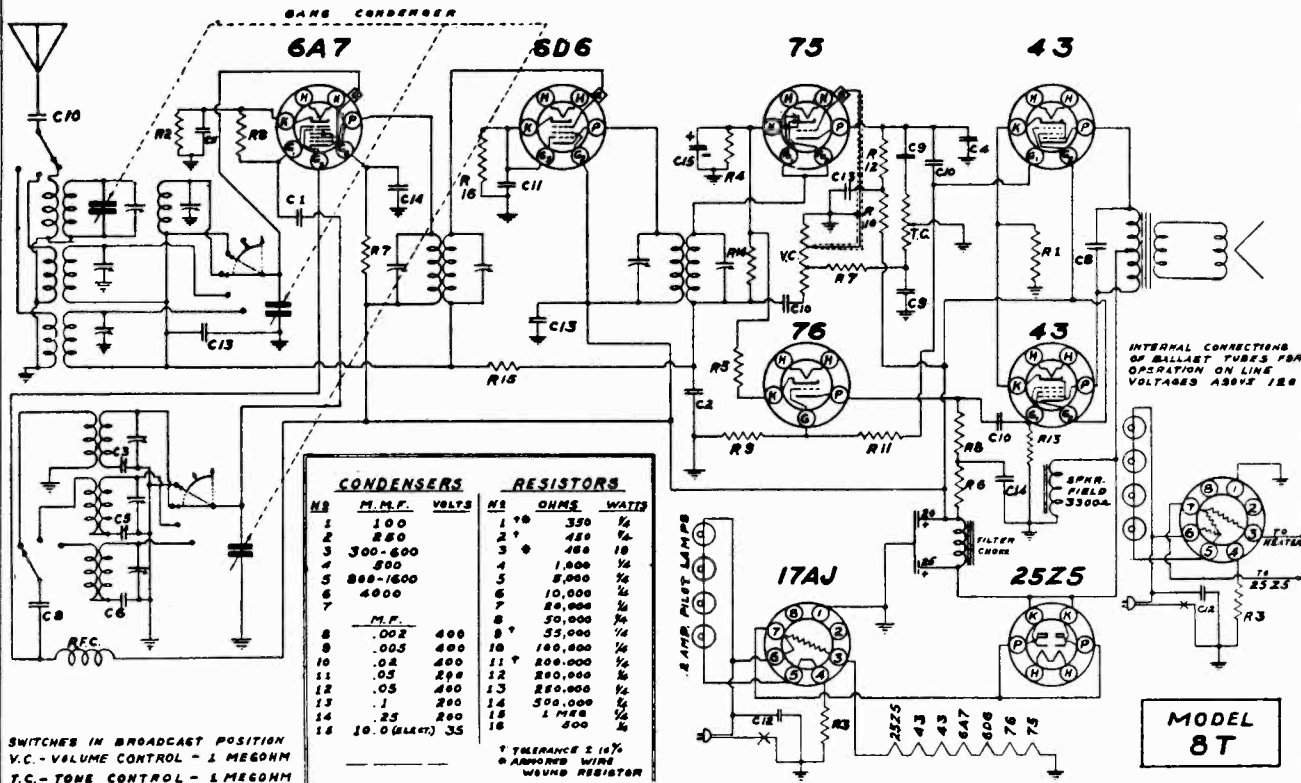
- tion conventionally by using the selector knob.
3. Now press button No. 1 and turn adjusting screw in either direction until the previously selected station is heard. Adjust the screw until the dark area of the "electric eye" is smallest. This setting will give the best tonal response with maximum 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.

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.

MODEL 8T
Schematic, Socket
Trimmers, Alignment

CONTINENTAL RADIO & TELEV. CO.



peak the antenna trimmer and pre-selector trimmer. Generator and dial at 600 KC, while rocking gang condenser, adjust oscillator padder to peak.

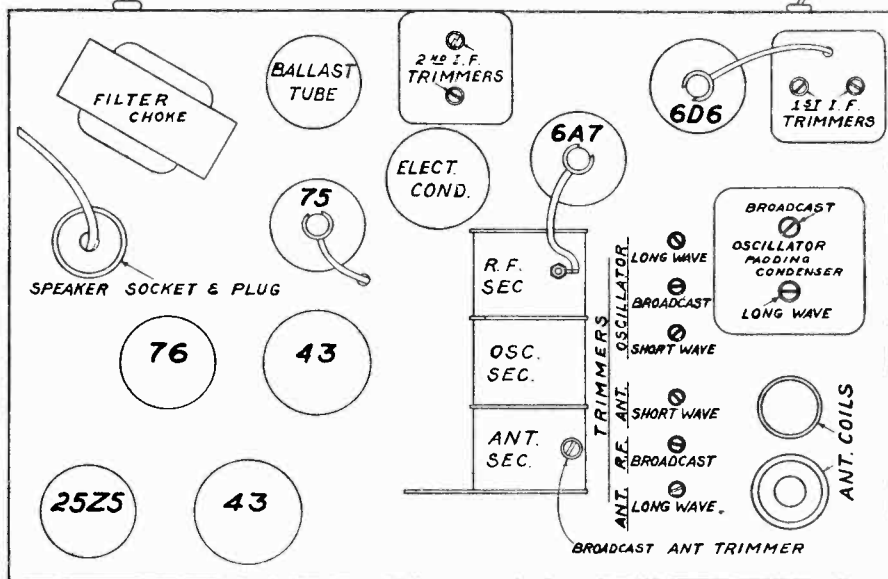
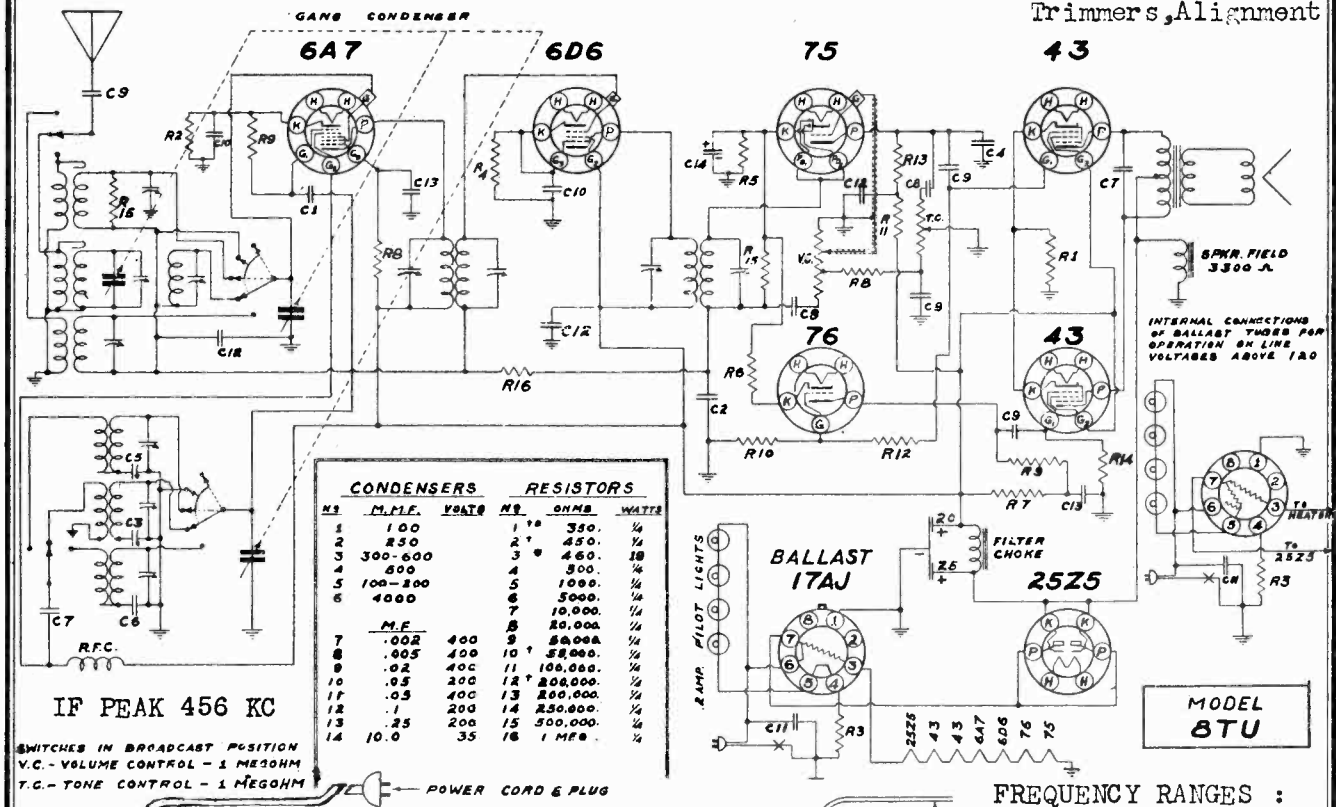
POLICE BAND - Replace 200 MMFD condenser with 400 ohm resistor, generator set to 5600 KC, peak oscillator trimmer. Generator to 4000 KC, peak antenna trimmer.

SHORTWAVE BAND - Generator at 18.1 MC, peak oscillator trimmer. Generator set to 16 MC, peak the antenna trimmer. Check response at 6 MC. No padding required.

SEE MODEL 8K (see index) for telephone dial data and adjustments.

CONTINENTAL RADIO & TELEV. CO.

MODEL 8TU
Schematic, Socket
Trimmers, Alignment



ANT. WIRE
TONE CONTROL ON & OFF SW. E VOL. CONTROL TUNING KNOB BAND SWITCH

then peak the antenna trimmer, and preselector trimmer. Generator end dial at 600 KC, while rocking variable condenser, adjust oscillator padding condenser to peak.

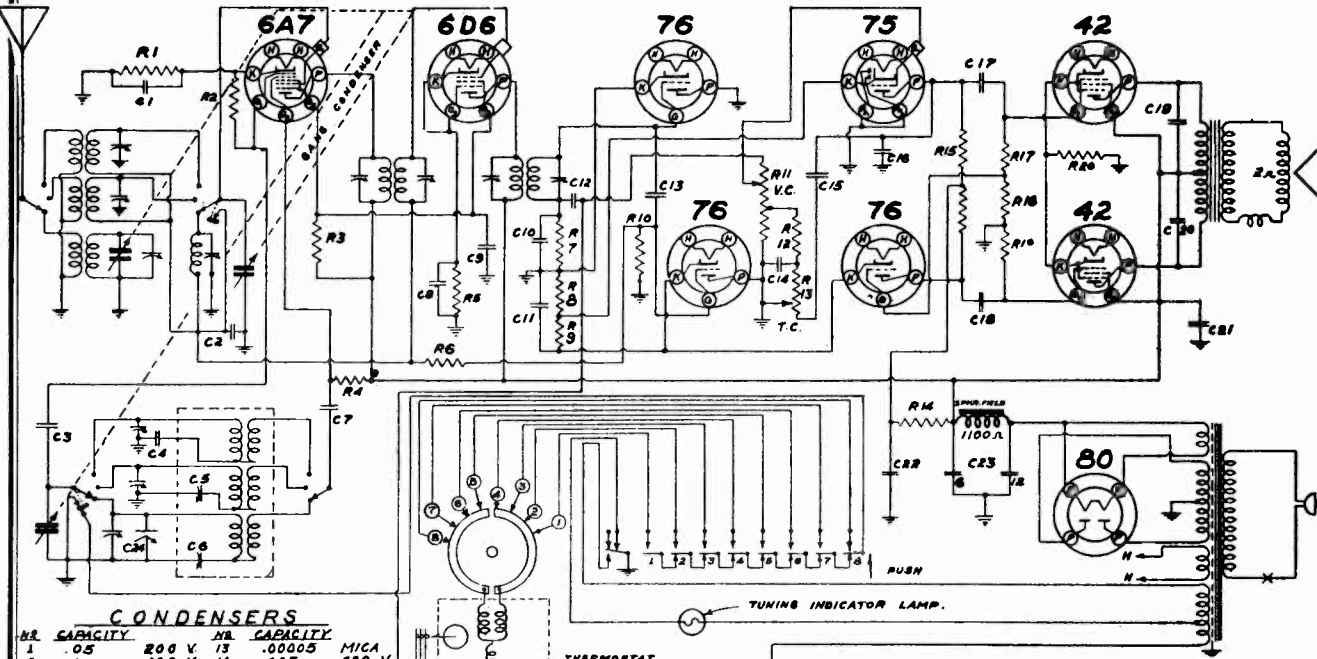
SHORTWAVE BAND - Generator set at 18.1 MC, then peak the oscillator trimmer. Generator reset to 16 MC, after which the antenna trimmer is adjusted to peak.
 LONGWAVE BAND - Generator set at 380 KC, connected to antenna thru a 200 MMFD condenser, variable condenser at minimum, peak oscillator trimmer. Generator at 325 KC, locate signal on dial, peak antenna trimmer. Generator at 160 KC, peak oscillator circuit to peak. Rock variable condenser during adjustment. Repeat all adjustments to secure maximum response on all bands.

SEE MODEL 8K (see index) for telephone dial data and adjustments.

MODEL 9G

Schematic, Socket
Trimmers, Alignment
Tuner

CONTINENTAL RADIO & TELEV. CO.



CONDENSERS

NR.	CAPACITY	NR.	CAPACITY
1	.05 200 V.	13	.00005 MICA
2	.1 400 V.	14	.005 600 V.
3	.0001 MICA	15	.005 600 V.
4	.00425% W.V.G.	16	.0001 MICA
5	.00143% W.V.G.	17	.01 400 V.
6	.000454	18	.01 400 V.
7	.002 400 V.	19	.005 600 V.
8	.05 200 V.	20	.005 600 V.
9	.1 200 V.	21	.25 400 V.
10	.00025 M.P.D.	22	.25 400 V.
11	10.0 M.P.D.	23	400 V. ELECT.
12	.01 A	24	5.12 ELECT. COMPENSATOR

RESISTORS

NR.	OHMS	WATTS	NR.	OHMS	WATTS	NR.	OHMS	WATTS
1	330	1/2	8	750*	1/2	18	200,000	1/2
2	500	1/2	9	2,500*	1/2	19	500,000	1/2
3	500	1/2	10	1 MEG.	1/2	20	500,000	1/2
4	35,000	1/2	11	1 MEG.	1/2	21	45,000*	1/2
5	15,000	1/2	12	20,000	1/2	22	500,000	1/2
6	350	1/2	13	1 MEG.	1/2	23	500,000	1/2
7	1 MEG.	1/2	14	50,000	1/2	24	R10	1/2
	500,000	1/2						

*TOLERANCE TO BE ± 10%

MODEL 9G

V. C. - VOLUME CONTROL.
T. C. - TONE CONTROL.
SWITCHES IN BROADCAST POSITION

TUBES

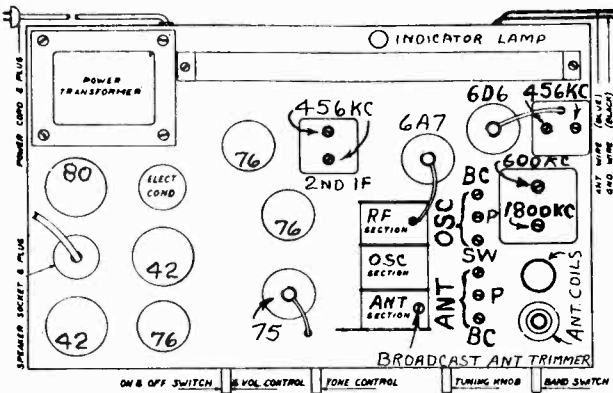
- 6A7—Converter
- 6D6—I.F. Amplifier
- 76—Diode Detector
- 76—A.V.C.
- 76—Phase Inverter
- 75—1st Audio
- 42—Push-Pull Output
- 42—Push-Pull Output
- 80—Rectifier

IF PEAK 456 KC

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

TEMPERATURE CONTROL

This receiver is equipped with a bimetallic temperature controlled capacity unit which automatically corrects any tendency toward oscillator drift, making possible the application of the automatic tuner to this receiver. This unit will be found connected across the oscillator trimming condenser. Anyone servicing this receiver is cautioned against attempting to adjust this unit in any way as the correct adjustment is made at the factory and any further adjustment will result in failure of the unit to operate properly.



IF ALIGNMENT - Generator at 456 KC, connected to control grid of 6A7 thru .05 MFD condenser. Peak four IF transformer trimmers.

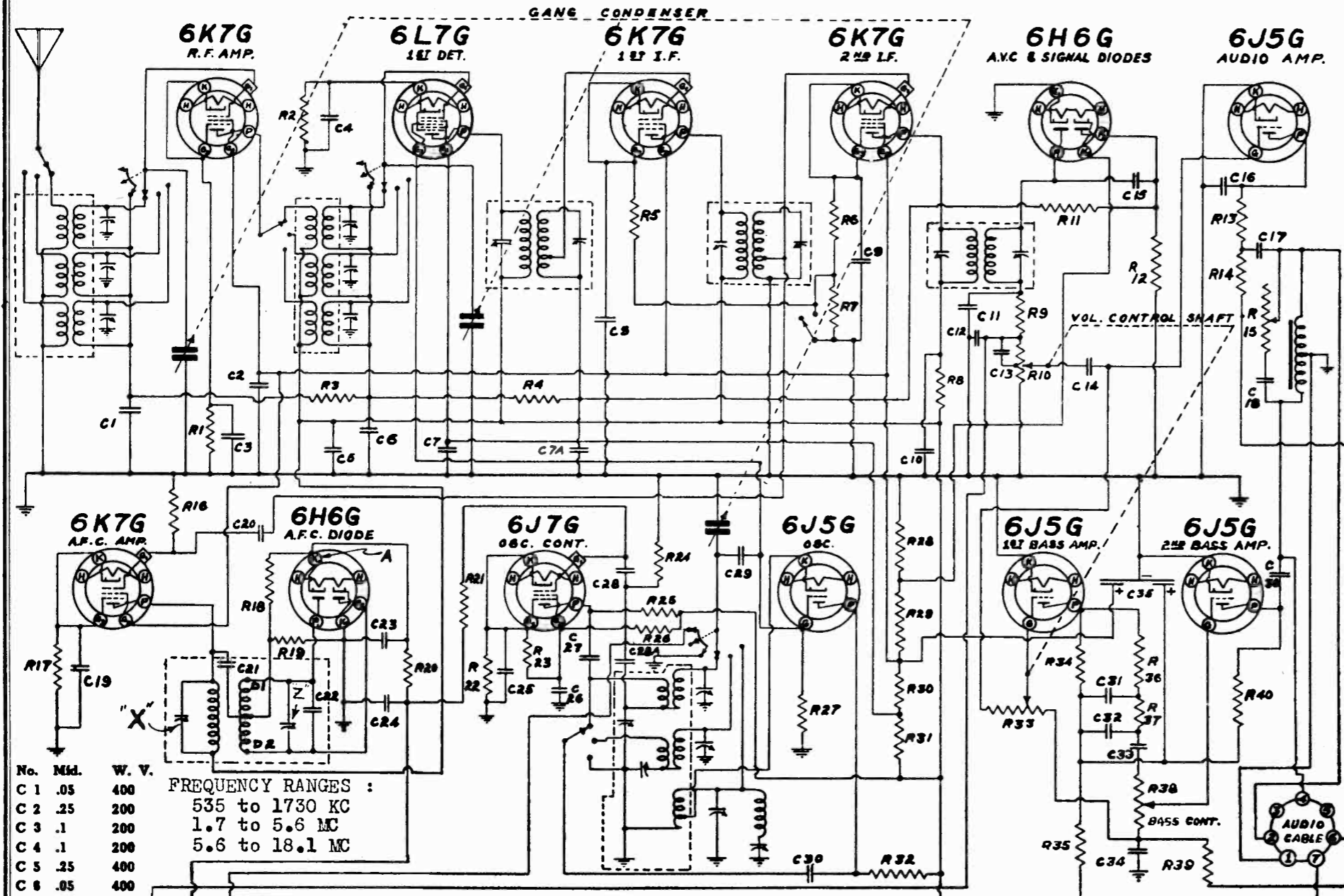
BROADCAST BAND - Generator at 1730 KC, connected to antenna thru 200 MMFD condenser, gang condenser at minimum, peak oscillator trimmer. Generator at 1400 KC, locate signal on dial by tuning, peak pre-selector and antenna trimmers.

POLICE BAND - Replace 200 MMFD condenser with 400 ohm resistor, generator at 5600 KC, variable condenser at minimum, peak oscillator trimmer. Generator at 4000 KC, locate signal on dial, peak antenna trimmer. Generator and dial at 1800 KC, while rocking variable condenser, peak oscillator padding condenser.

SHORTWAVE BAND - Generator at 18100 KC, variable condenser at minimum, peak oscillator trimmer. Generator at 1600 KC, locate signal on dial, peak the antenna trimmer. Check at 6000 KC, no padding adjustment required.

SEE MODELS 16R and 11S (see index) for PUSH BUTTON TUNER data and adjustments

CONTINENTAL RADIO & TELEV. CO.

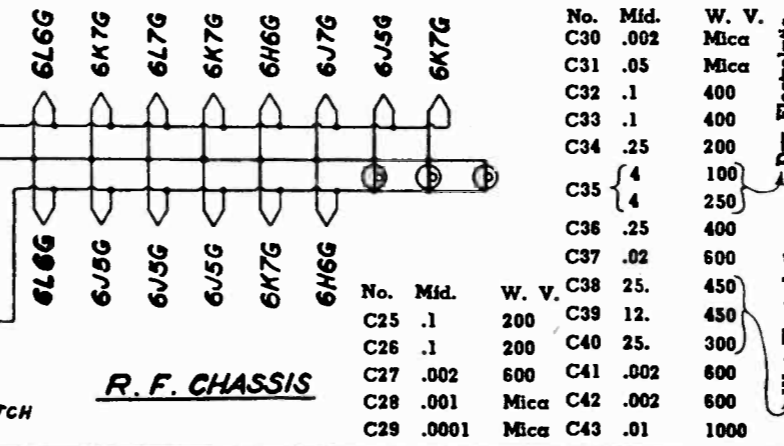


No.	Ohms	Watts	Tolerance	No.	Ohms	Watts	Tolerance
R 1	750	1/4	10% Tolerance	R23	25,000	1/2	10% Tolerance
R 2	700	1/4	10% Tolerance	R24	350	1/4	10% Tolerance
R 3	250,000	1/4		R25	25,000	1/4	
R 4	250,000	1/4		R26	35,000	1	
R 5	750	1/4	10% Tolerance	R27	50,000	1/4	
R 6	750	1/4	10% Tolerance	R28	450	1/4	10% Tolerance
R 7	600	1/4	10% Tolerance	R29	2,400		
R 8	5,000	1/4		R30	2,250		Sections of Metal Clad Resistor
R 9	20,000	1/4		R31	2,260		
R10	250,000	Volume Control		R32	25,000	1	
R11	1 Meg.	1/4		R33	500,000	Bass Control (Section)	
R12	1 Meg.	1/4		R34	25,000	1/4	
R13	7,000	1/4	10% Tolerance	R35	10,000	1/2	
R14	25,000	1/4		R36	10,000	1/4	
R15	250,000	Tone Control		R37	20,000	1/4	
R16	2 Meg.	1/4		R38	500,000	Bass Control (Section)	
R17	750	1/4	10% Tolerance	R39	500,000	Bass Control (Section)	
R18	500,000	1/4		R40	25,000	Bass Control (Section)	
R19	500,000	1/4		R41	31		Sections of Metal Clad Resistor
R20	2 Meg.	1/4		R42	150		
R21	500,000	1/4		R43	15,000	2	
R22	1,100	1/4	5% Tolerance				

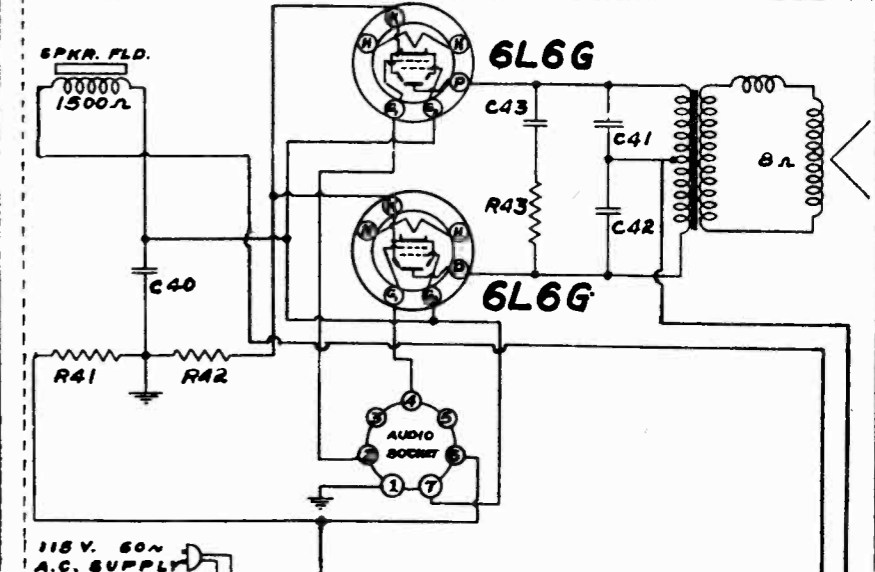
No.	Mfd.	W. V.
C 1	.05	400
C 2	.25	200
C 3	.1	200
C 4	.1	200
C 5	.25	400
C 6	.05	400
C 7	.1	200
C7A	.05	400
C 8	.1	200
C 9	.1	200
C10	.05	400
C11	.0001	Mica
C12	.0001	Mica
C13	.00025	Mica
C14	.05	400
C15	.00005	Mica
C16	.0005	Mica
C17	.25	400
C18	.05	400
C19	.1	200
C20	.001	Mica
C21	.0001	Mica
C22	.0002	Mica
C23	.1	200
C24	.1	200

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

IF PEAK 456 KC
MODEL 16R



R. F. CHASSIS



POWER CHASSIS

MODEL 16R
 Socket, Trimmers
 Alignment, Tuner

CONTINENTAL RADIO & TELEVISION CO.

INSTRUCTIONS FOR ADJUSTMENT AND OPERATION OF THE ELECTRIC TUNER

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

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

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

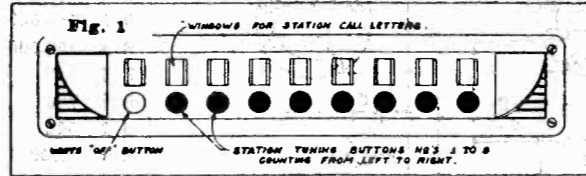
ELECTRIC MOTOR The power for this tuner is provided by a small, efficient electric motor, of the brushless variety. It is fitted with an automatic clutch and a silent gear train. The bearings and the oil retainer hold sufficient oil to lubricate the motor for a lifetime.

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

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

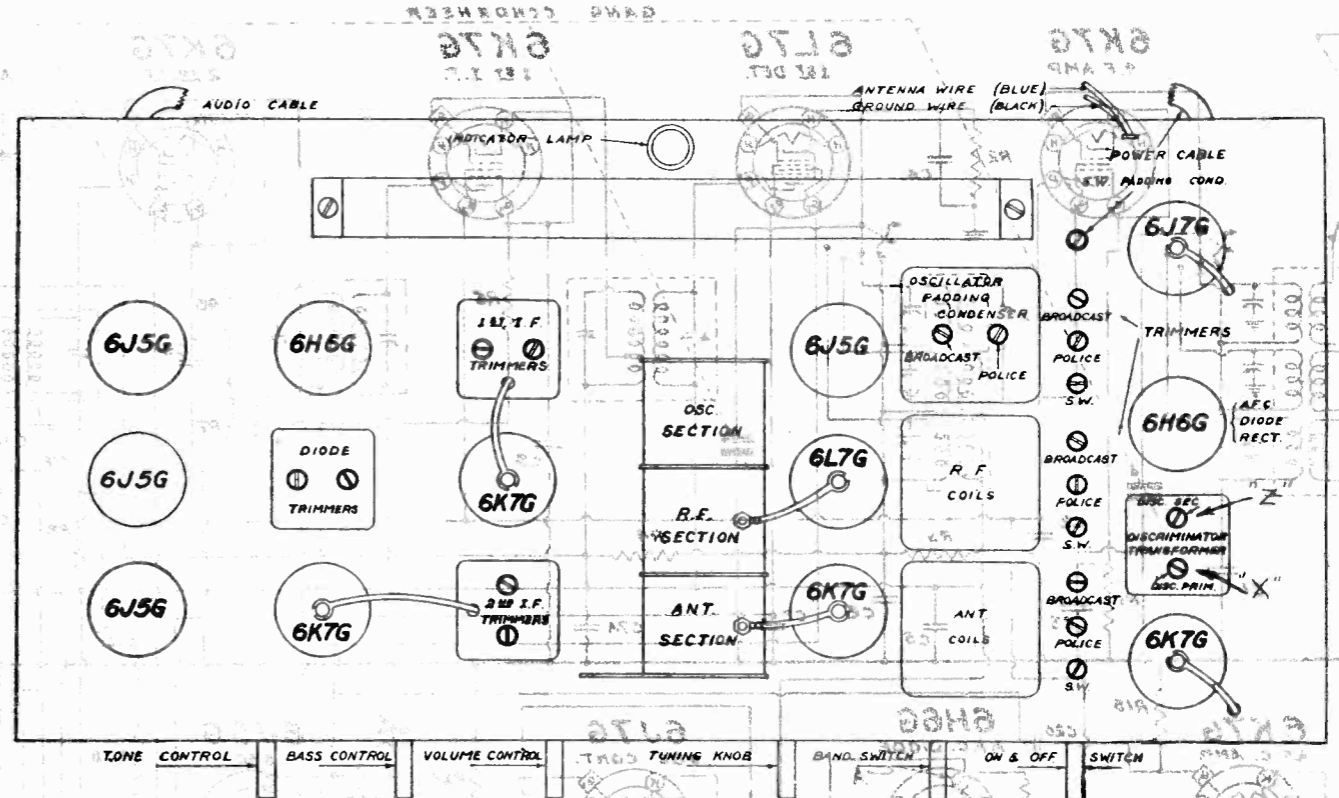
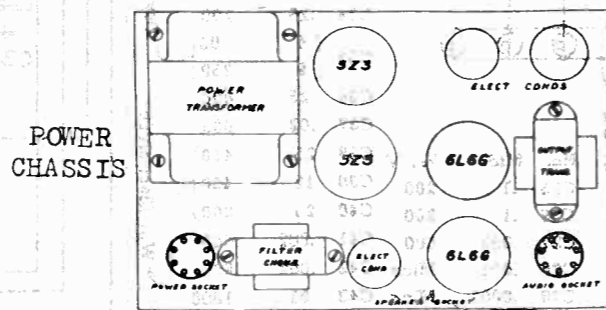
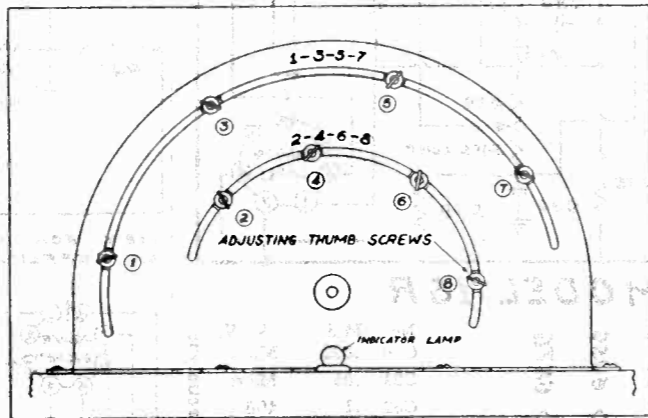
Follow this same procedure for the remaining stations, always choosing the station with the next high-

est frequency. After all eight (8) stations have been adjusted, check each adjustment by tuning in each station. NOTE: In the window above the white button insert the word "OFF" found in the call letter sheet.



HOW TO TUNE IN STATIONS USING THE ELECTRIC PUSH BUTTON TUNER

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



I.F. ALIGNMENT - Generator at 456 KC, connected to control grid of 6L7 thru .05 MFD condenser, align 1st, 2nd, and Diode transformer trimmers to peak. Connect a 0-200 micro-ammeter between the ungrounded cathode of the 6H6 AFC diode rectifier, and ground. The Cathode indicated as point "A" in the schematic. Place a 100 MFD condenser across the secondary of the discriminator transformer. These terminals are indicated as points "D1" and "D2" on the schematic. The condenser is used to detune the secondary circuit during the following primary adjustment: The primary is tuned by impressing an LF signal on the signal grid of the 6L7 and adjusting the trimmer marked "X" on the schematic and the chassis layout, to give a maximum meter indication. Signal strength should be approximately 100000 micro volts for the adjustment. With reduced signal strength repeat the adjustments of the entire I.F. system, for maximum sensitivity. The volume control should be on full for all adjustments. Without disturbing the generator or any of the other adjustments, the trimmer "Z" ("Disc. Sec.") should be adjusted as follows: Remove the 100 MFD condenser from across the discriminator secondary, increase the generator signal to approximately 100,000 micro volts, with volume control turned down to limit audio output, slowly turn the trimmer "Z" until a sudden sharp drop in current occurs the meter will now probably read in reverse and off scale. Reverse trimmer adjustment bringing meter reading to zero. Used only a non-metallic screw driver. It is sometimes convenient to use an offset of "remote zero" setting of the micro ammeter in making the adjustments so that zero current setting is higher on the scale. After the current has been brought to zero by the above described method the I.F. alignment and discriminator tuning is completed, and R.F. alignment may be accomplished.

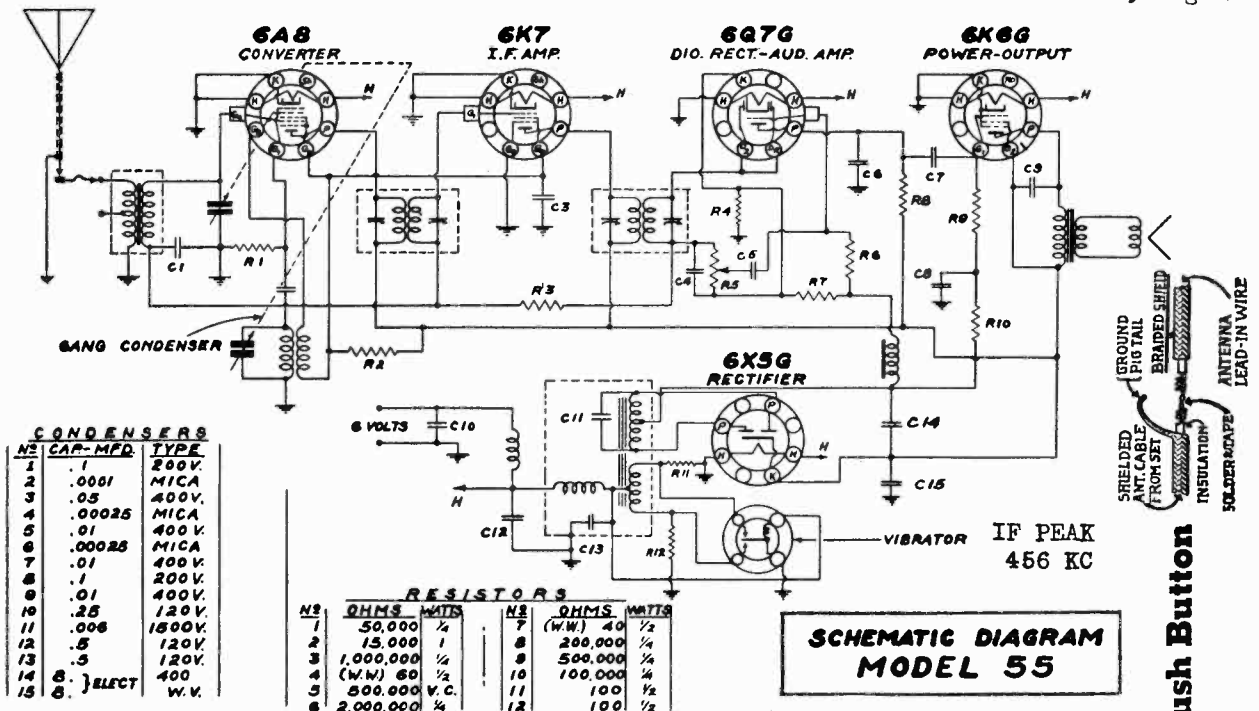
BROADCAST BAND - Generator at 1730 KC, connected to the antenna thru a 200 MFD condenser, variable condenser at minimum, peak oscillator trimmer. Generator at 1400 KC, tuning in signal, peak the RF and antenna trimmers. Generator at 600 KC, while rocking variable condenser, peak the oscillator padding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

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

SHORTWAVE BAND - Generator at 18100 KC, gang condenser at minimum, peak oscillator trimmer. Generator at 16000 KC, locate signal on receiver, peak RF and antenna trimmers. Generator at 6000 KC, while rocking variable across signal, peak SW padding condenser.

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MODEL 55
Schematic, Socket
Trimmers, Alignment



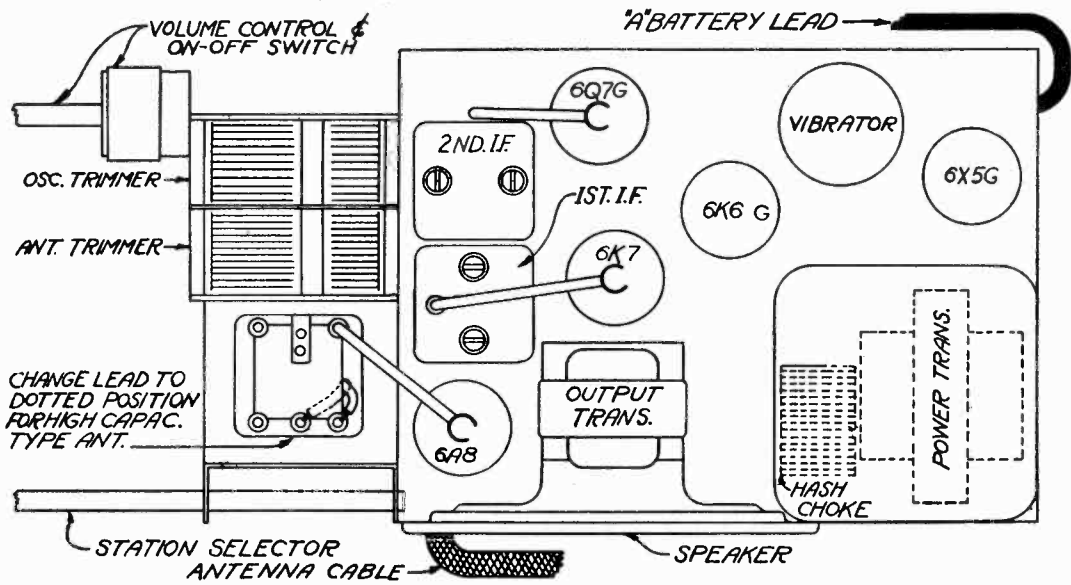
CONDENSERS

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

RESISTORS

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

**SCHEMATIC DIAGRAM
MODEL 55**



**5 Tube Under Dash Automatic Push Button
Tuning Automobile Radio**

GENERAL DATA. The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 1550 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 alignment should be the next procedure.

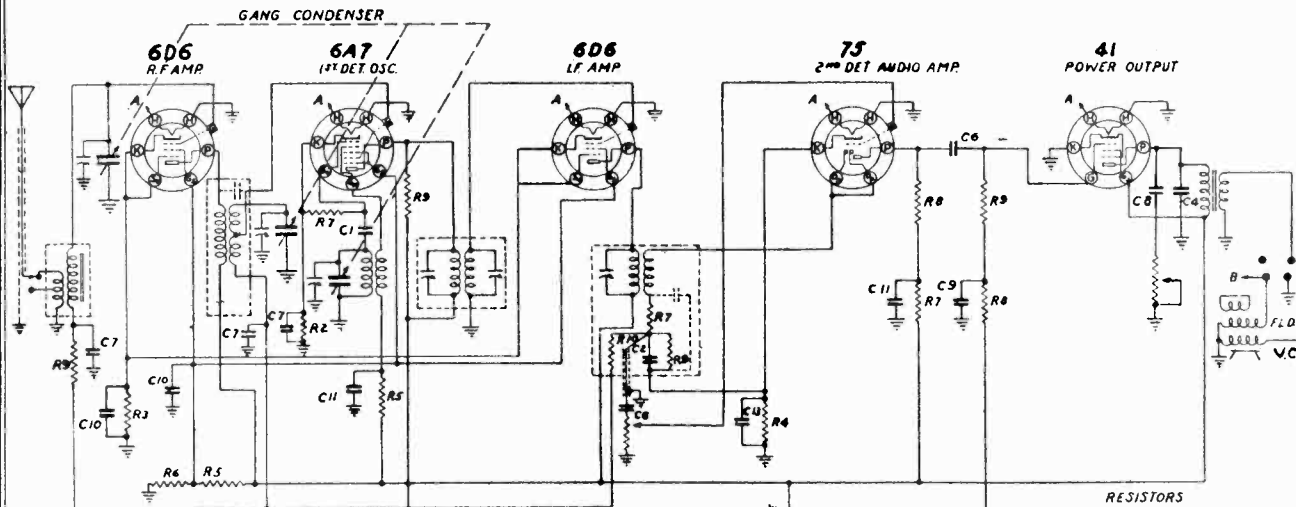
I.F. ALIGNMENT. Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector

tubes (6A8) through a .05 or .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT. Connect the output of the oscillator to the antenna lead of the receiver through a 50 mmfd. condenser. This antenna lead should be a two foot length of standard low capacity shielded loom fitted with the proper bayonet type plug to accommodate the antenna input receptacle on the receiver. Set the oscillator to 1550 KC and with the gang condenser at minimum, adjust the oscillator trimmer to receive this signal. Then set the oscillator to 1400 KC and adjust the antenna trimmer to give maximum output.

MODELS 66,660
Schematic, Socket
Trimmers, Alignment

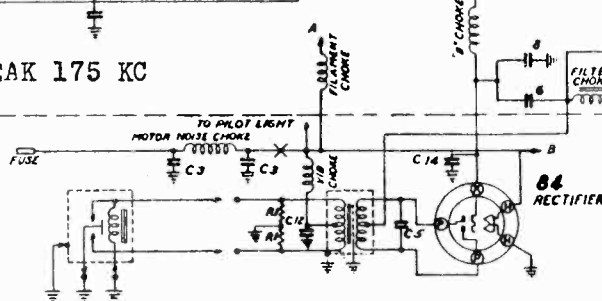
CONTINENTAL RADIO & TELEV. CO.



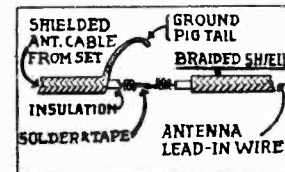
- RESISTORS**
 R1 = 50 ~
 R2 = 350 ~
 R3 = 500 ~
 R4 = 5,000 ~
 R5 = 15,000 ~
 R6 = 20,000 ~
 R7 = 50,000 ~
 R8 = 100,000 ~
 R9 = 500,000 ~
 R10 = 1,000,000 ~

- CONDENSERS**
 C1 = 0001 MICA
 C2 = 00025 MICA
 C3 = 002 MICA
 C4 = 005-600V
 C5 = 0075-1600V
 C6 = 01-400V
 C7 = 05-200V
 C8 = 05-400V
 C9 = 25-200V
 C10 = 1-200V
 C11 = 1-400V
 C12 = 5-50V
 C13 = 5HF-30V
 C14 = 21-600V

IF PEAK 175 KC



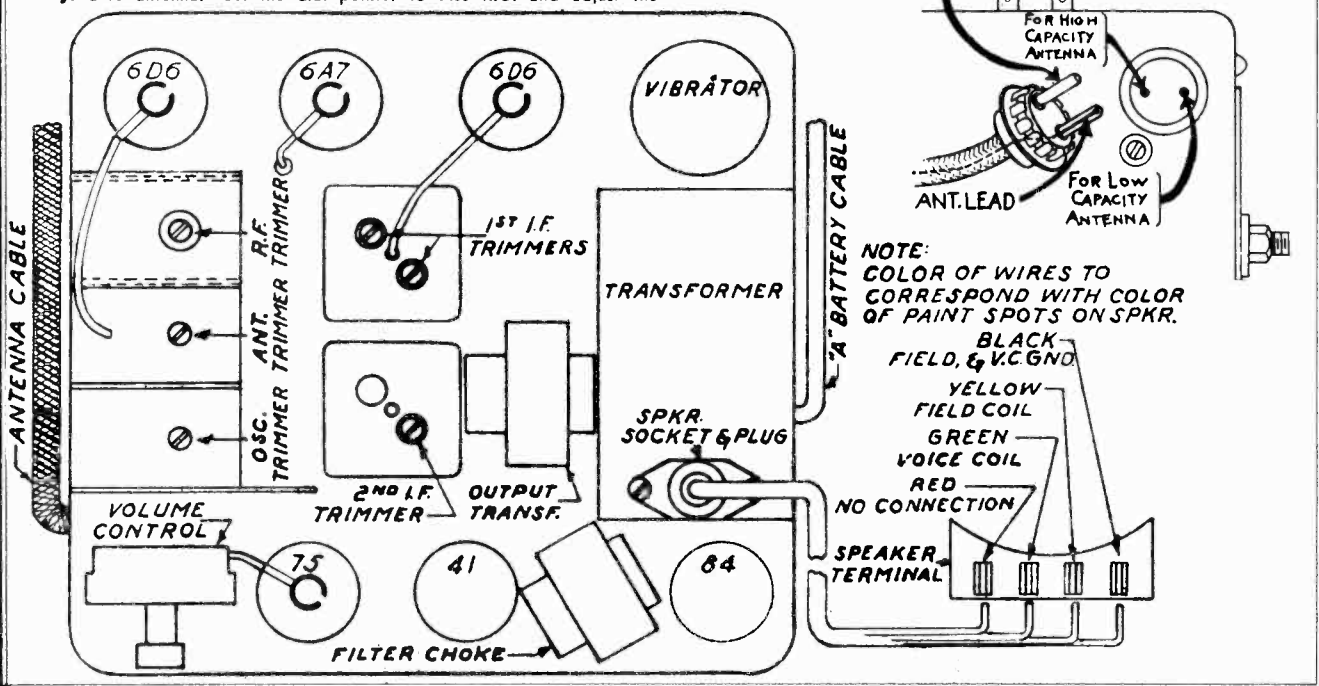
Model 66 & 660 Chassis



I.F. ALIGNMENT Adjust the test oscillator to 175 K.C. and connect the output directly to the grid of the first detector tube (6A7), without the use of any series condenser or resistor; the omission of series condenser and resistor to block out the AVC action. The oscillator trimmer to peak. (Front section of gang condenser.) The ground on the test oscillator can be connected to the chassis ground. Align the trimmers of the first and second I.F. transformers to peak or maximum reading on the output meter.

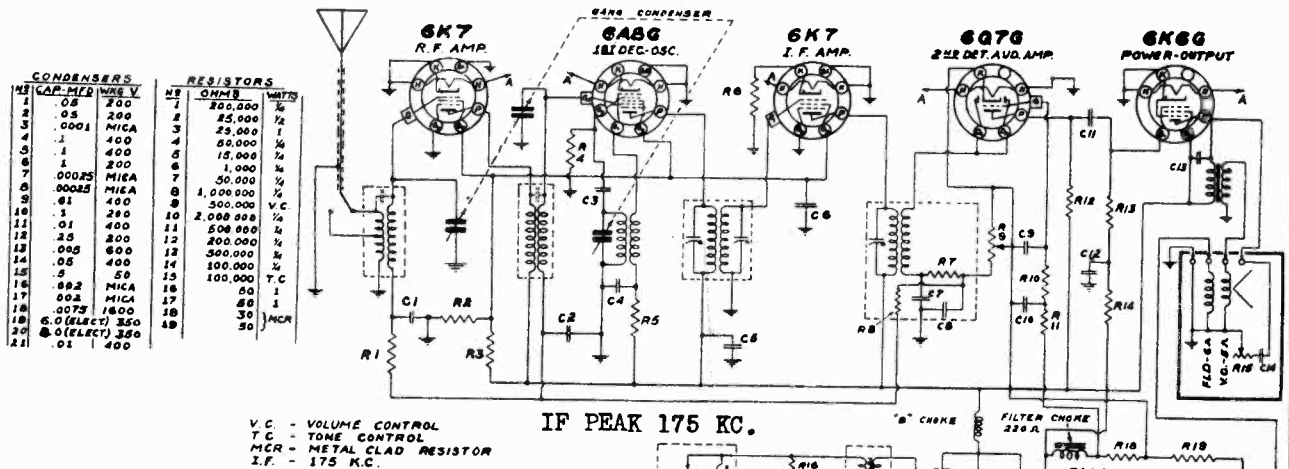
R.F. ALIGNMENT The next step is to adjust the center and rear trimmers of the gang condenser to peak. The center section of the gang condenser tunes the R.F. antenna amplifier stage

OSCILLATOR ALIGNMENT Adjust the test oscillator to 1400 K.C. and connect the (6D6 tube), and the rear condenser section tunes the detector grid coil of the output to the antenna through a .0001 mfd. mica condenser to give the equivalent of a low capacity type average auto antenna. Set the dial pointer to 1400 K.C. and adjust the



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MODEL 69
Schematic, Socket
Trimmers, Alignment



CONDENSERS

NO.	CAP. PER UNIT	MATERIAL	VALUES
1	.02	MICA	200
2	.05	MICA	200
3	.0001	MICA	25,000
4	.1	MICA	25,000
5	.1	MICA	25,000
6	.1	MICA	25,000
7	.00025	MICA	1,000,000
8	.00025	MICA	1,000,000
9	.00025	MICA	1,000,000
10	.1	MICA	25,000
11	.01	MICA	250,000
12	.05	MICA	250,000
13	.05	MICA	250,000
14	.05	MICA	250,000
15	.5	MICA	100,000
16	.5	MICA	100,000
17	.002	MICA	50
18	.0075	MICA	50
19	6.0 (ELECT)	MICA	350
20	6.0 (ELECT)	MICA	350
21	.01	MICA	400

RESISTORS

NO.	OHMS	VALUES
1	200,000	1/2
2	25,000	1/2
3	25,000	1
4	25,000	1/2
5	15,000	1/2
6	1,000	1/2
7	50,000	1/2
8	1,000,000	1/2
9	500,000	1/2
10	2,000,000	1/2
11	500,000	1/2
12	200,000	1/2
13	500,000	1/2
14	100,000	1/2
15	100,000	1/2
16	50	1
17	50	1
18	50	1
19	50	1
20	50	1
21	50	1

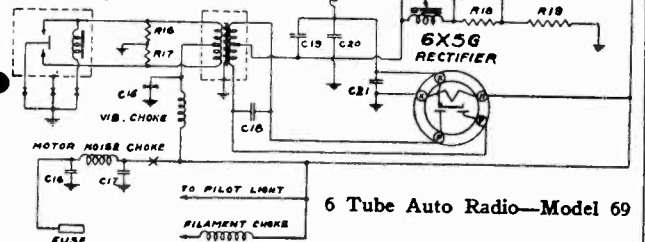
V.C. - VOLUME CONTROL
T.C. - TONE CONTROL
MCR - METAL CLAD RESISTOR
I.F. - 175 K.C.

6 Tube Automobile Radio ALIGNMENT DATA

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

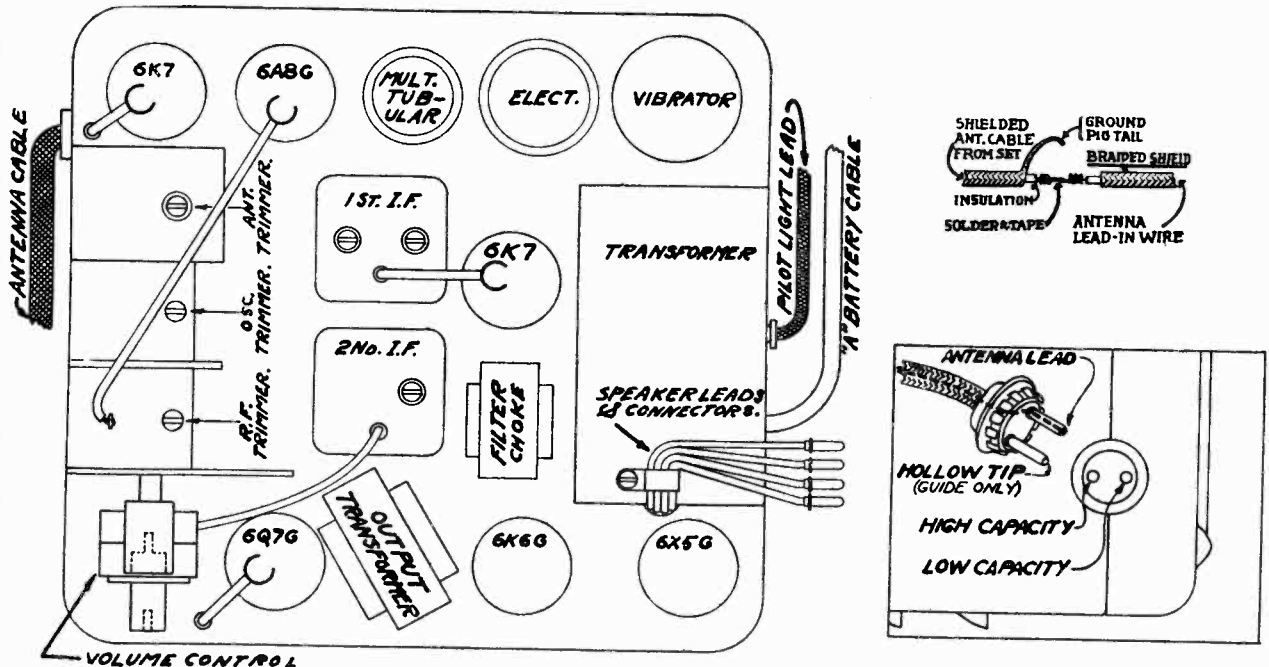
CORRECT ALIGNMENT PROCEDURE. The intermediate frequency (I.F.) transformers should be aligned properly as the first step.

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



6 Tube Auto Radio—Model 69

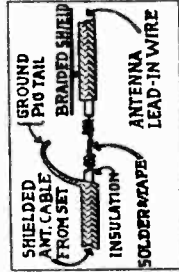
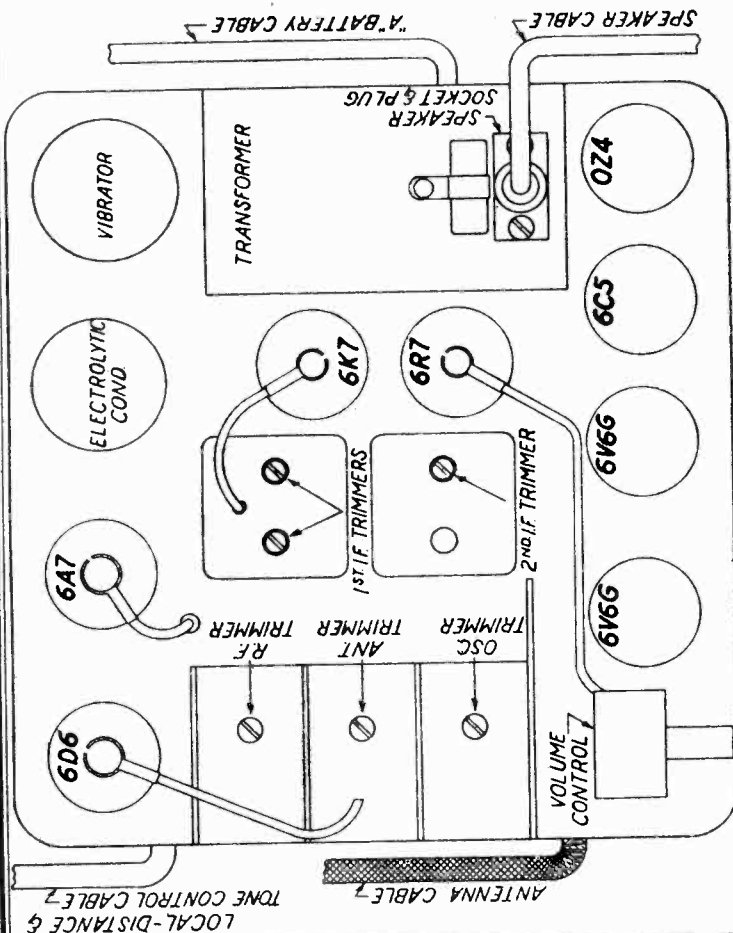
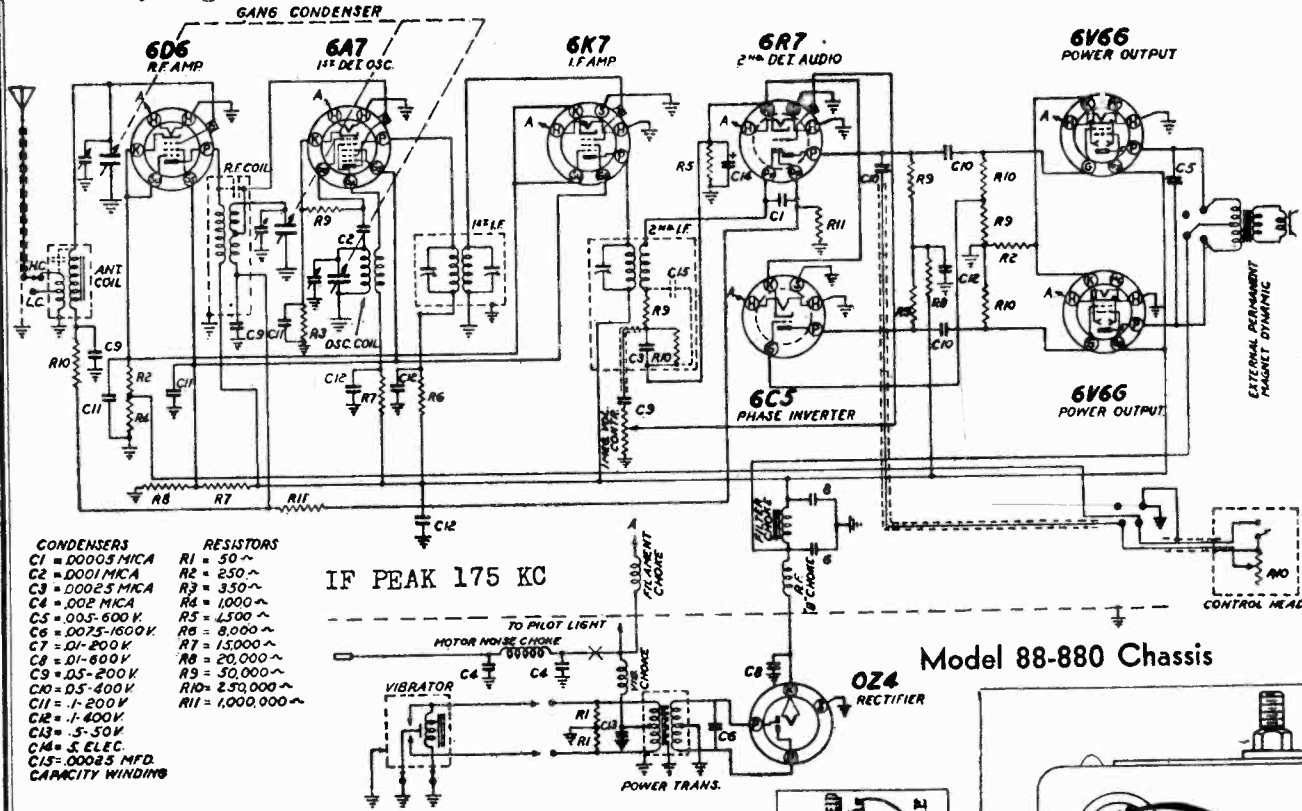
R.F. ALIGNMENT. Adjust the test oscillator to 1550 K.C. and connect the output to the antenna through a .00005 mfd. mica condenser to give the equivalent of a low capacity average auto antenna. When this adjustment is made, the signal must be introduced into the receiver through the shielded lead supplied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



MODELS 88,880

Schematic, Socket
Trimmers, Alignment.

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ALIGNMENT DATA

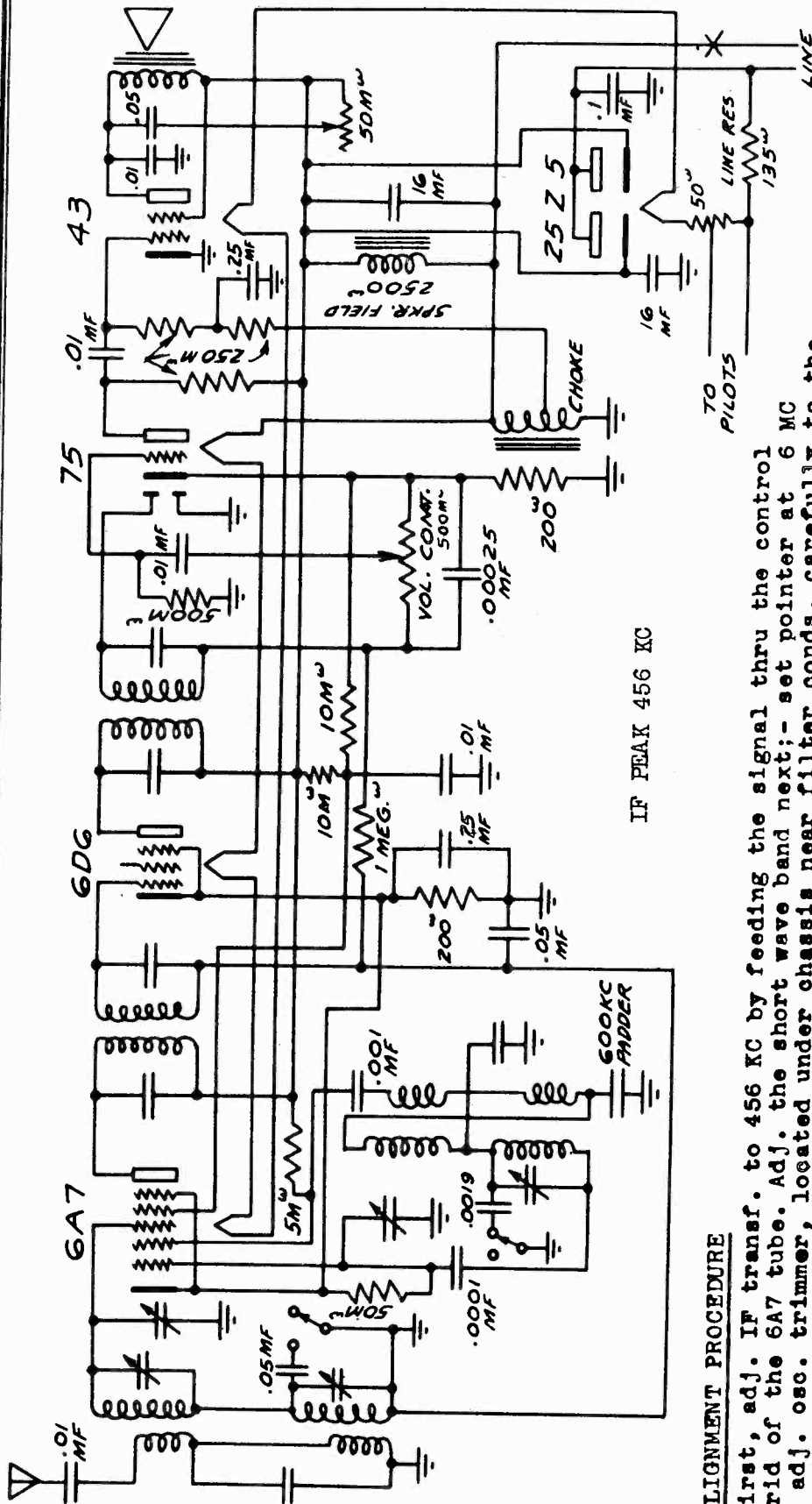
I.F. ALIGNMENT. Adjust the test oscillator to 175 K.C. and connect the output directly to the grid of the first detector tube (6A7), without the use of any series condenser or resistor; the omission of series condenser and resistor to block out the AVC action. The ground on the test oscillator can be connected to the chassis ground. Align the trimmers of the first and second I.F. transformers to peak or maximum reading on the output meter.

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

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

CORONA RADIO & TELEV. CORP.

MODEL 108
Schematic
Alignment



ALIGNMENT PROCEDURE

First, adj. IF transf. to 456 KC by feeding the signal thru the control grid of the 6A7 tube. Adj. the short wave band next;- set pointer at 6 MC & adj. osc. trimmer, located under chassis near filter conds. carefully to the fundamental rather than image(fund. is second peak as you adj. from max. cap.); then adj. the short wave ant. trimmer, located on top of chassis near var. cond.; next dial across short wave band checking it at 2.5 and 4 MC to see that it does not stop oscillating. If this should occur, try changing 6A7 tubes to find one that will oscillate at 2.2 MC. If you experience any difficulty in finding a satisfactory tube, it may be necessary to use separate bias on 6A7(200 ohm res. and .1/4 mfd cond.) in order to use the tubes available.

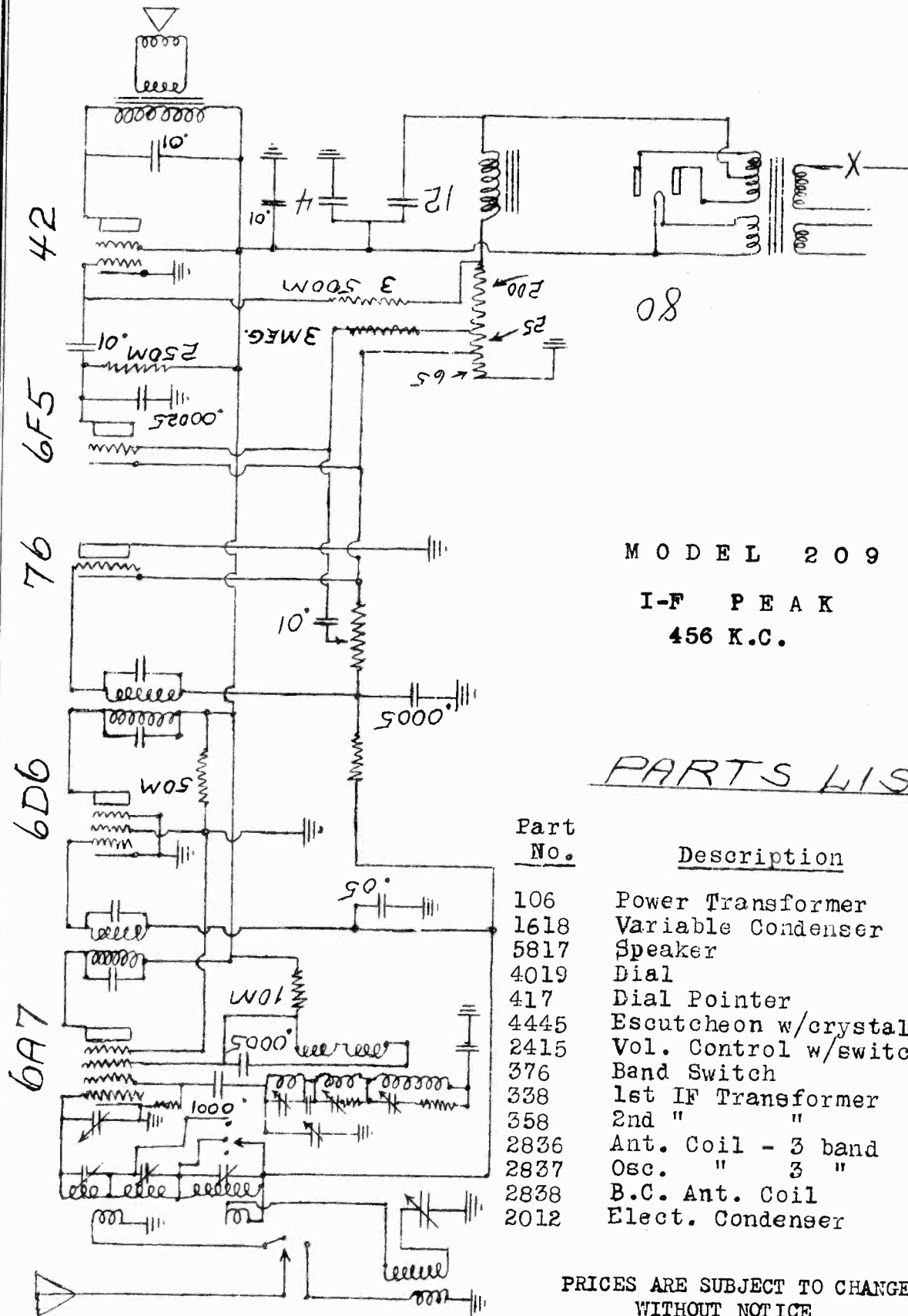
Now, set band switch to broadcast position and adj. padder at about 600 Kc for max. gain, rocking the var. cond. with each adj. of the padder - then with gang all the way open, adj. B.C. osc. trimmer located under chassis near outer edge, to 1717 KC and set B.C. ant. trimmer located on top of chassis near outer edge, for maximum gain.

DO NOT CONNECT A GROUND TO THIS SET.

This set is designed to operate on 105-125 volts AC-DC

CORONA RADIO & TELEV. CORP.

MODEL 209
Schematic
Parts



MODEL 209
I-F PEAK
456 K.C.

PARTS LIST

Part No.	Description	List Price
106	Power Transformer	\$3.00
1618	Variable Condenser	3.25
5817	Speaker	3.25
4019	Dial	4.60
417	Dial Pointer	.60
4445	Escutcheon w/crystal	1.50
2415	Vol. Control w/switch	1.10
376	Band Switch	.90
338	1st IF Transformer	1.50
358	2nd " "	1.50
2836	Ant. Coil - 3 band	1.85
2837	Osc. " 3 "	1.85
2838	B.C. Ant. Coil	.60
2012	Elect. Condenser	1.50

PRICES ARE SUBJECT TO CHANGE
WITHOUT NOTICE

MODELS A158, A258

Alignment, Tuner
Dial Data, Parts

CROSLLEY RADIO CORP.

5) Thread the cord through the eyelet in the pulley and extend one side up and over the vertical brass pulley. Loop this lead around the horizontal idler pulley at the left-hand side of the dial and then around the idler pulley at the right-hand side of the dial and then over the top of the large drive pulley. The tension on the spring should be sufficient to stretch it to within approximately 1/2 of the eyelet.

(6) With the gang closed, move the pointer to the extreme right-hand end of the dial. Press the cord into the slots in the back of the pointer and check to see that the pointer travels from one end of the dial to the other as the gang is opened and closed. It may be advisable to place some Aratex or other liquid adhesive on the cord where it fits into the pointer.

REPLACING THE A-158 DRIVE CORD

1.—Remove the broken cord and the cord tension spring.

2.—Cut a 30 inch length of drive cord and tie the tension spring approximately 4 inches from one end. Thread both ends through the eyelet in the large pulley from the inside. Hook the other end of the spring to the catch in the pulley and bend catch to secure spring.

3.—Close the condenser gang and see that the eyelet in pulley is on top and that the end of the condenser shaft is flush with the inside of the pulley.

4.—Take the long end of cord and place on small brass idler pulley on the right side of the dial bracket. Loop around pulley in a clockwise direction and then around idler pulley on the left side of the dial bracket, continue on over the top of the large pulley and down to the drive shaft. From the under side of drive shaft wrap 2 turns around shaft in a counter-clockwise direction, bringing cord up on the left side of large pulley. Be sure the cord is on all the pulleys then tie a knot pulling with sufficient force to stretch the tension spring to within 1/2 inch of the edge of pulley.

5.—Close gang and place the pointer on the cord at the extreme left end of the dial. Check to see that pointer travels full length of the dial. It may be advisable to place some "ARATEX" or other liquid adhesive on cord where it fits into the pointer.

AS THAT OF MODEL A-258.

The model A-158 and the model A-258 are the same electrically with the exception of a few minor parts. Mechanically they differ in that the A-158 has Push Button Tuning and the A-158 is manually tuned. When referring to the A-258 Parts List for replacement parts for the A-158 disregard all parts listed between items 7 and 11 and all parts listed under the heading Miscellaneous Mechanical Parts.

deletions to complete Parts List for the A-158.

REPLACING DIAL DRIVE CORDS

Two dial drive cords are used and should the inner-most cord break, it will be necessary to remove the outer cord and large pulley before the inner cord can be replaced.

To replace the inner cord:

(1) After removing the broken cord, place the chassis on end with the push buttons "up" and the speaker toward you.

(2) Thread an 18" length of drive cord through the hook on one end of the tension spring which was removed from the pulley on the end of the push button rocker plate.

(3) Insert both ends of this cord through the eyelet in the rocker plate pulley from the inside. Pull the cord through until the tension spring is pulled into the catch in the pulley in the side opposite the eyelet.

(4) Open the condenser gang all the way.

(5) Pull all but approximately 4 1/2" of the cord through the lower half of the pulley.

(6) Loop the long end of the cord over the top of the pulley and back over the brass idler pulley to the drive shaft. Continue the cord around the drive shaft, threading from the inside and over the top. Wrap four complete turns of the cord around the drive shaft and complete the cord over the top of the rocker plate pulley.

(7) Pull on the short end of the cord until the tension spring in the pulley is stretched to within 1/2" of the eyelet. Maintain this tension and tie a knot in the two ends of the cord over the catch which holds the spring. Loop the cord over the spring catch so that the knot is turned in. (A drop of bees wax on the knot would be an added protection against coming untied.)

To replace the outer cord:

(1) Place the chassis in a horizontal position with the push buttons to the left and the speaker toward you.

(2) Close the condenser gang and mount the large drive pulley on the shaft. Place the pulley on the outside of the pulley bushing and the eyelet in the pulley is horizontal with the shaft and toward the dial.

(3) Cut a 22" length of drive cord and tie a knot 1/2" from the two ends.

(4) Hook one end of the tension spring over the catch provided in the pulley and hook the other end over the drive cord at the knot.

MODEL A-158

The following are parts to fill in the deletions to complete Parts List for the A-158.

Item No.	Part No.	Description
8	G49-33001 C-50455B MG23-50500 W-43549 W-50512 C9-43564 C9-41582 W-50054B W-50105 W-50589 D-50030B C-50504B C-50505	2 Section Gang Condenser Glass Dial Face Dial Support Bracket (Riveted to chassis) Retaining Washer (Drive Shaft) Drive Shaft Pulley & Hub assembly Drive Cord (30 in.) Ant. Comp. Condenser Condenser: 0.1 Mf. 160 V. Felt (Dial window) Case (Rear section) Case (Front section) Knob (2 Required)
9		
16B		

IN ORDER TO PREVENT A V. C. ACTION AL-

WAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. **Aligning R-F Amplifier.**

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (0.00065 mf.) to 250 mmf. (0.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 on the dial.

(c) Adjust the station selector to 1400 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Repeat operation (e) for more accurate adjustment.

3. **Adjusting Antenna Compensating Condenser.**

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, located between the control knobs on the front of the chassis, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output. It will be necessary to adjust the antenna compensating condenser to the car antenna after the tuning has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for

SPECIFICATIONS

This model Crosley Roamio is a single unit five-tube superheterodyne receiver. It incorporates an unusual push button tuning system of rugged mechanical design that is positive, accurate, and easy to adjust and operate. A highly efficient superheterodyne circuit employs five tubes to the utmost advantage as follows: one 6A8G as an oscillator and mixer or modulator, one 6A8G as an intermediate frequency amplifier, one 6G7G as detector, A. V. C. and 1st A. F. amplifier, one 6K6G as power output amplifier and a 6X5G as a rectifier. A full wave vibrator is used. Bias for the 6A8G and 6G7G tubes is obtained across item 27 (60 ohm resistor), for the 6G7G tube across item 28 (40 ohm resistor), and for the 6K6G across the "B" Filter choke, item 7, and items 27 and 28.

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the receiver chassis. Voltage readings taken with a 1000 ohm per volt, 500 volt voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

SOCKET VOLTAGE LAYOUT

The socket layout in the illustration Fig. 5, shows the voltage readings taken between the tube prongs and receiver chassis. It will be noted that certain unused terminals are used as junction blocks while others are not used at all. All readings are taken with the receiver in operating condition and no signal input.

SETTING PUSH BUTTONS

Should it become necessary to realign the circuits of the receiver, it may also be necessary to reset the push buttons. The push buttons may be quickly and accurately set, either with the receiver in the case or with the case removed.

Insert a small screw driver in the hole through each push button and loosen (do not remove) the set screw in the bottom of the hole. By means of the conventional tuning knob, tune-in AS ACCURATELY AS POSSIBLE the favorite station having the highest frequency—that is, the station nearest the left-hand end of the dial. Completely depress and hold the No. 1 push button on the left and tighten the set screw SECURELY. The push button tuning system is now correctly set for the 1st station. Follow through with this same procedure, setting the other four stations in the order of their frequency (kilocycles).

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (1 mfd. or larger—not electrolytic) in series with one of the leads.

1. **Tuning I.F. Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6G7G I. F. tube, leaving the tube's grid clip

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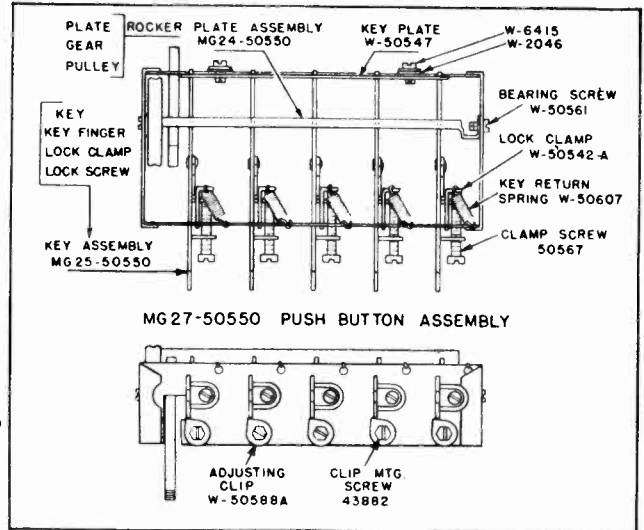
MODELS A158, A258
Tuner Assembly
Voltage, Parts

PARTS LIST—MODEL A-258

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description
1	G167—32000	Ant. Coil
2	G167—32002	Osc. Coil
3	G185—32004	1st I-F Assy., 455 Kc.
4	G186—32004	2nd I-F Assy., 455 Kc.
5	G19—32977	Motor Noise Check
6	G27—28067	"A" Filter Choke
7	G16—29535	"B" Filter Choke
8	G50—33001	2 Section Gang Cond.
9	—50054B	Ant. Compensating Cond.
	—50623	Glass Dial Face
	W—50545	L. H. Dial Mtg. Clip
	W—50560	R. H. Dial Mtg. Clip
	W—50517B	Dial Mask (Maroon)
	W—50518	Pointer
	B—78	Screw—Dial Clip Mtg.
	MG23—50550	Dial Mtg. Bracket Assy. (Riveted to Chassis)
	MG28—50550	Manual Drive Shaft Brkt. Assy.
	G8—43564	Pulley and Hub Assy.
	W—23877	Set Screw—Hub
	—41582	Drive Cord—40 Inches
	W—50590	Spring—Cord Tension—Large Pulley ^{29Z}
	W—43561	Spring—Cord Tension—Small Pulley ^{29Y}
	W—50524B	Manual Drive Shaft
10	G3—50369	Temp. Compensating Cond. 30
11A	W—32380	Condenser, .05 Mf. 200 V.
11B	W—32380	Condenser, .05 Mf. 200 V.
11C	W—32380	Condenser, .05 Mf. 200 V.
11D	W—32380	Condenser, .05 Mf. 200 V.
12	W—37226	Condenser, .02 Mf. 160 V.
13	W—23191A	Condenser, .01 Mf. 400 V.
14	W—50203	Condenser, .0065 Mf. 1,000 V.
15A	W—50161	Condenser, .5 Mf. 120 V.
15B	W—50161	Condenser, .5 Mf. 120 V.
16A	W—50105	Condenser, .1 Mf. 160 V.
16B	W—50105	Condenser, .1 Mf. 160 V.
17Z	W—50528	Condenser, 4. Mf. 350 V.
17Y	W—50528	Condenser, 4. Mf. 350 V.
18	W—50224	Cond. Clamp
19	G1—34002	Condenser, .00025 Mf. Molded
20	G3—34002	Condenser, .0005 Mf. Molded
21A	—35600	Resistor, 100,000 Ohm 1/4 W.
21B	—35601	Resistor, 300,000 Ohm 1/4 W.
22A	—36322	Resistor, 300,000 Ohm 1/4 W.
22B	—36322	Resistor, 500,000 Ohm 1/4 W.
23	—23616	Resistor, 500,000 Ohm 1/4 W.
24	—35602	Resistor, 15,000 Ohm 1 W.
25	—35927	Resistor, 1. Megohm 1/4 W.
26	—50641	Resistor, 2. Megohm 1/4 W.
27	—50643	Resistor, 750 Ohm 1/2 W.
28	—50642	Resistor, 60 Ohm 1/2 W.
	—50642	Resistor, 40 Ohm 1/2 W.
		Mounting Parts
	W—38038D	Distributor Suppressor
	W—29754C	Generator Condenser
	—25846	3/4" No. 10 P. K. Screw (Set Mtg.)
	—6213	1/4"—20 Hex. Nut (Brkt. Mtg.)
	—35065	1/4"—20 Screw (Brkt. Mtg.)
	W—38205	1/4" Lock Washer (Brkt. Mtg.)
	—32783	Ant. Cable (Accessory)
	W—50167	Mtg. Bracket (Set)
	W—50395	Ammeter Cond. (Accessory)
	W—38935	Case Ground Clip

Fig. 4 Push Button Assembly



—50526	Volume Control, 1. Meg.
G178—36400	On-Off Switch
W—50176	8 Prong Socket
W—31210	Tube Shield Half (2 Req.)
G105—28807	Tube Shield Ring
W—50123A	Vib. Socket
—45889	Vib. Gnd. Clip
B—50641	Speaker, Mfg. Spec. 5B-122
W—50130	Output Trans.
G1—50631	Power Trans.
G29—32750	Power Trans. Can
G27—32750	Dial Light Bulb—6-8 V.
—38915	"A" Lead—Set to Fuse
—38915	"A" Lead—Fuse to Ammeter
G2—34002	Resistor, 100 Ohm 1/2 W. W. W.
G10—38000	Resistor, 100 Ohm 1/2 W. W. W.
G13—38000	Condenser, .0001 Mf. Molded
W—32757	Vibrator, Interchangeable
W—32776	Vibrator
	Fuse (12 Amp.)
	Fuse Insulator
	Miscellaneous Mechanical Parts
MG27—50550	Push Button Unit Assy.
MG25—50550	Key Assy.
W—50542A	Key Clip (Lock Clamp)
—50567	7/8"—6x32 Screw (Clamp)
W—50607	Spring—(Key Return)
W—50588A	Adjusting Clip (Heart Shaped)
—43882	1/4" No. 8 P. K. Screw (Clip Mtg.)
W—50547	Key Plate (Rear Guide)
MG24—50550	Rocker Plate Assy.
W—50561	1/8"—6x40—Fil. H. Screw (Rocker Plate Bearing)
W—45553B	Push Button
W—50551A	Celluloid Cover
—50549	Call Letter Sheet
D—50503B	Case (Rear Half) FS49
C—50554A	Case (Front Half) FS49
W—50589	Felt (Dial Window)
—50505	Knob (2 Req.)

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go
6A8-G	Oscillator-Modulator	6.0	190	100	—	0	102	0
6U7-G	I-F Amplifier	6.0	190	100	0	0	—	—
6Q7-G	Diode Detector & A-F Amp.	6.0	85	—	—	-2.3	—	—
6K6-G	Output	6.0	185	200	—	0	—	—
6X5-G	Rectifier	6.0	—	—	—	200	—	—

Power Output approximately 4 Watts.
Battery Drain approximately 5.7 Amperes at 6 Volts.

MODELS A168, A268

Tuner Assembly

Parts

CROSLLEY RADIO CORP.

PARTS LIST—MODELS A-168 and A-268

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description
1	W —43567	Dial Light Bulb, 6-8 V.
2	G175—32000	Antenna Coil
3	G176—32002	Oscillator Coil
4	G191—32004	1st I-F. Trans., 455 Kc.
5	G196—32004	2nd I-F. Trans., 455 Kc.
6	G19—32977	Motor Noise Choke
7	G29—28067	"A" Filter Choke
8	—38998B	Ant. Comp. Cond.
	—50049	Nut—Comp. Cond. Mtg.
9	W —35936	Condenser, .05 Mf. 200 V.
10	W —32380	Condenser, .05 Mf. 200 V.
11	G50—33001	2 Section Gang Condenser
	C —50688	Dial (Glass) A-168 only
	W —50517B	Dial Mask (Maroon) A-168 only
	W —50518A	Pointer—A-168 only
	W —50758	Dial (Glass) A-268 only
	W —50757	Dial Mask (Blue) A-268 only
	W —50759	Pointer—A-268 only
	W —50560	R. H. (Dial Mtg.) Clip
	W —50545	L. H. (Dial Mtg.) Clip
	B —78	Screws—Clip Mtg.
	W —2045	Washers—Clip Mtg.
	W —50524D	Drive Shaft—Manual
	W —50325A	Washer—Shaft Retaining
	MG28—50675	Shaft Brkt. Assm. (Rear Bearing) 47Z
	G8 —43564	Pulley and Hub. Assm. 47Y
	W —50590	Spring (Tension—22" Cord) 48
	G6 —41582	Drive Cord—22-Inch
	W —43561	Spring (Tension—18" Cord)
	G5 —41582	Drive Cord—18-Inch
	MG23—50675	Dial Brkt. Assm. Riveted to Chassis
12	G3 —50369	Temp. Comp. Cond. (Bi-metal)
13	G1 —34002	Condenser, .00025 Mf. Molded
14	G3 —34002	Condenser, .0005 Mf. Molded
15	W —50105	Condenser, .1 Mf. 160 V.
16	W —32380	Condenser, .05 Mf. 200 V.
17	W —50682A	Condenser, .5 Mf. 120 V.
18	W —50203	Condenser, .0065 Mf. 1,000 V.
19	G3 —34002	Condenser, .0005 Mf. Molded
20	W —45810B	Condenser, .006 Mf. 160 V.
21Z	W —50674	Condenser, 10. Mf. 350 V.
21Y	W —50674	Condenser, 5 Mf. 350 V.
22	G1 —34002	Condenser, .00025 Mf. Molded
23	W —37226	Condenser, .02 Mf. 160 V.
24	W —35758	Condenser, .008 Mf. 400 V.
25	—35600	Resistor, 100,000 Ohms 1/4 W. Ins.
26	—50699	Resistor, 200 Ohms 1/2 W. W. W.
27	—36322	Resistor, 500,000 Ohms 1/4 W. Ins.
28	—38915	Resistor, 100 Ohms 1/2 W. W. W.
29	—38915	Resistor, 100 Ohms 1/2 W. W. W.
30	—23616	Resistor, 15,000 Ohms 1 W. Carbon
31	—35602	Resistor, 1 Meg. 1/4 W. Ins.
32	—50671	Resistor, 15 Meg. 1/4 W. Ins.
33	—45388	Resistor, 1,400 Ohms 1 1/2 W. W. W.
34	—35601	Resistor, 300,000 Ohms 1/4 W. Ins.
35	—38623	Resistor, 750,000 Ohms 1/4 W. Ins.
36	—40643	Resistor, 25,000 Ohms 1/4 W. Ins.
37Z	G29 —32750	"A" Lead, Set to Fuse
37Y	G27 —32750	"A" Lead, Fuse to Ammeter
	W —32757	Fuse, 12 Amp.
	W —32776	Fuse Insulator
38		6A8-G
39		6U7-G
40		6Q7-G
41	G178—36400	Socket 6P5-G
42		6AC5-G
43		6X5-G
44	G105—28807	Socket Vibrator
	W —50174	Tube Shield Base
	W —50176	Tube Shield Half
	W —31210	Tube Shield Ring
45	278BL7"U"	Speaker—Mfg. Spec. No. 5-B-122
	—45889	Output Transformer
	278BL7"B"	Speaker—Mfg. Spec. No. 55-W-1
	—45721	Output Transformer
46	B —50644A	Power Transformer
	W —50680	Shield—P. T.

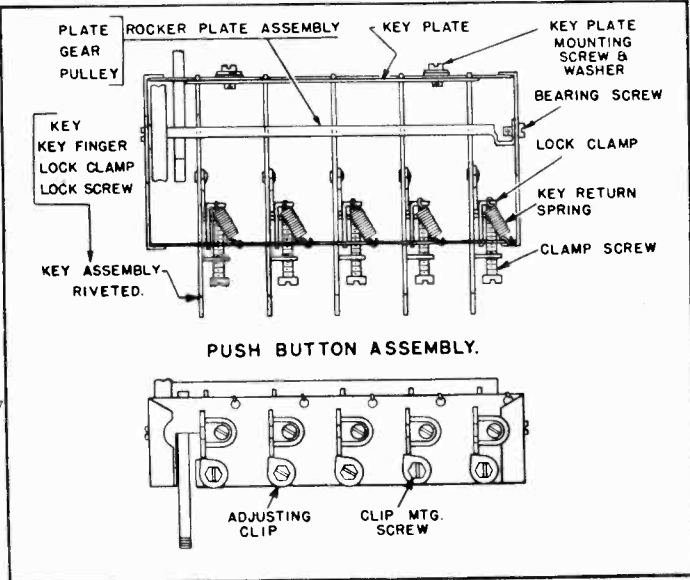


Fig. 4. Push Button Assembly

—50526	Volume Control (1 Meg.)
G10 —38000	On-Off Switch
G13 —38000	Vibrator Interchangeable
W —50123A	Vibrator
	Vib. Ground Clip
Miscellaneous Mechanical Parts	
MG27—50675	Push Button Unit Assy. (Complete) A-168
MG27—50750	Push Button Unit Assy. (Complete) A-268
MG25—50550	Key Assembly
W —50542C	Key Clip (Lock Clamp)
—50639	No. 6—32x1" Fil. Hd. Screw (Adj. Clamp)
W —50607B	Spring (Key Return)
W —50547	Key Plate (Rear Guide)
W —2046	No. 8 Shakeproof Washer (Plate Mtg.)
—31388	No. 8—32x 3/8 Screw (Plate Mtg.)
W —50588B	Adj. Clip (Heart Shaped)
W —45646B	Adj. Clip
—43882	1/4"—No. 8 P. K. Screw (Adj. Clip Mtg.)
MG24—50550	Rocker Plate Assembly
W —50561	1/8"—No. 6-40 Fil. Hd. Screw (Rocker Plate Bearing)
—50722	Push Button—A-168 only
—50755	Push Button—A-268 only
—50597	Call Letter Sheet (Gray) A-168
—50549	Call Letter Sheet (Brown) A-268
W —50551A	Celluloid Cover
—50721	Knob—A-168
—50754	Knob—A-268
D —50503D	Case—Rear Half
C —50554C	Case—Front Half—A-168
W —50765	Case—Front Half—A-268
W —50589	Felt—Dial Opening
Mounting Parts	
W —38038D	Distributor Suppressor
W —29754C	Generator Condenser
—25846	3/4" No. 10 P. K. Screw (Set Mtg.)
—6213	1/4"—20 Hex. Nut (Brkt. Mtg.)
—35065	1/4"—20 Screw (Brkt. Mtg.)
W —38205	1/4" Lock Washer (Brkt. Mtg.)
—32783	Ant. Cable (Accessory)
W —50167	Mtg. Bracket (Set)
W —50395	Ammeter Cond. (Accessory)
W —38935	Case Ground Clip

CROSLLEY RADIO CORP.

MODELS A168, A268
Sixer Roamios
Schematic, Voltage
Socket, Trimmers
Layout

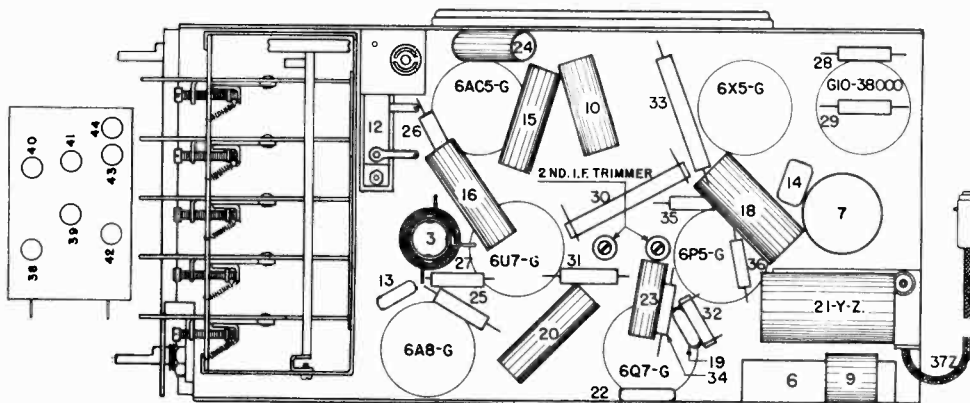


Fig. 3. Bottom View A-168 and A-268

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the receiver chassis. Voltage readings taken with a 1000 ohm per volt, 500 volt voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range D. C. voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

SPECIFICATIONS

The models A-168 and A-268 CROSLLEY SAFETY-TUNE SIXER ROAMIOS are single unit, six-tube superheterodyne receivers. They incorporate the new Crosley mechanical Push Button Tuning system. This system is unsurpassed for easy adjustment, accuracy, simplicity and ruggedness of design. The highly efficient superheterodyne circuit employs six tubes to the utmost advantage as follows: one 6A8-G as oscillator and modulator or mixer, one 6U7-G as intermediate frequency amplifier, one 6Q7-G as detector, A. V. C., and 1st. audio amplifier, one 6P5-G as second audio amplifier (driver), one 6AC5-G as power output and a 6X5-G as a rectifier. The vibrator is the full wave type.

Power Output (max.) 6 Watts—approx.
Battery Drain 6.5 Amperes—approx.
It will be noted that certain terminals on the sockets are used as junction blocks.

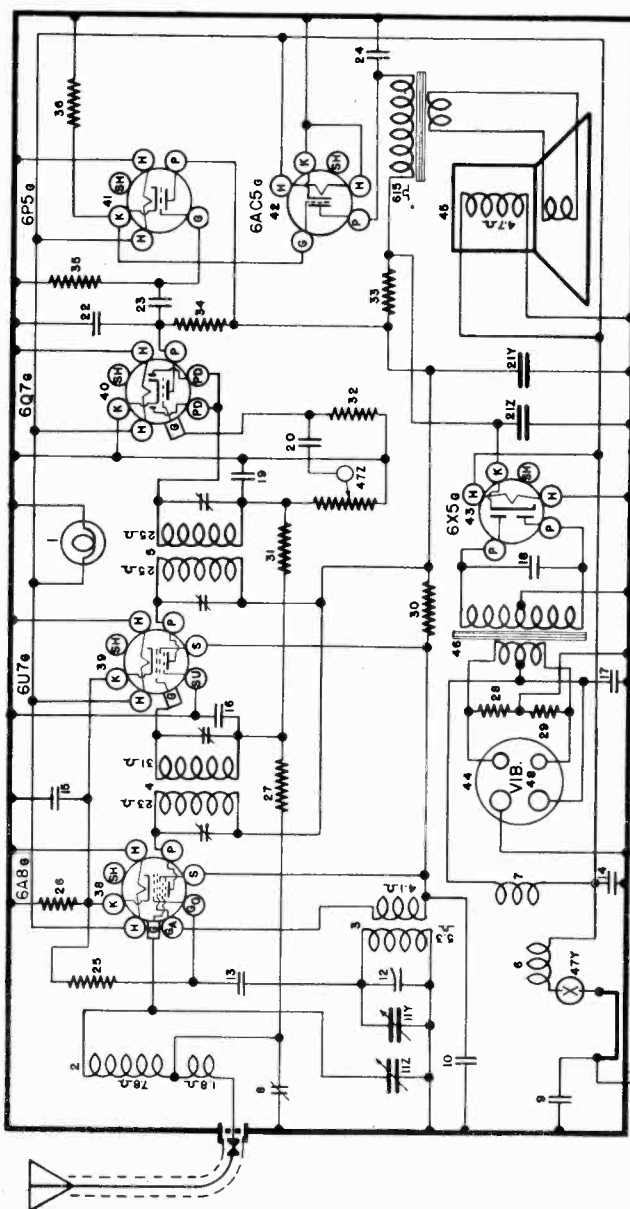


FIG. 1—WIRING DIAGRAM—MODELS A-168 and A-268

FIG. 2. Top View A-168 and A-268

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go	G
6A8-G	Oscillator-Modulator	6.0	220	100	—	3.5	100	—	—
6U7-G	I-F. Amplifier	6.0	220	100	—	3.5	—	—	—
6Q7-G	Det., A. V. C., 1st A.F. Amplifier	6.0	60	—	—	—	—	—	—
6P5-G	2nd A.F. Amplifier	6.0	200	—	—	11	—	—	—
6AC5-G	Output	6.0	225	—	—	240	—	—	—
6X5-G	Rectifier	6.0	—	—	—	—	—	—	11

June, 1938

MODEL - 168
455 K.C. I.F.

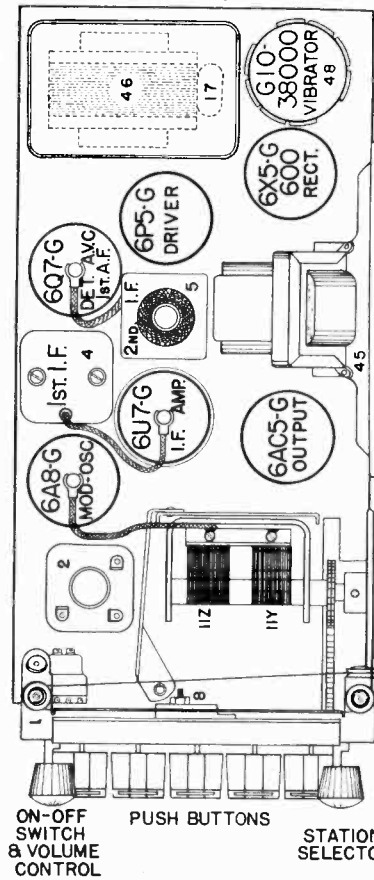


Fig. 2. Top View A-168 and A-268

MODELS A168, A268

Sixer Roamios

Alignment, Dial Data

CROSLEY RADIO CORP.

MODEL A-268 CROSLEY SAFETY-TUNE SIXER ROAMIO DELUXE
MODEL A-168 CROSLEY SAFETY-TUNE SIXER ROAMIO**SETTING PUSH BUTTONS**

Should it become necessary to realign the circuits of the receiver, it may also be necessary to reset the push buttons. The push buttons may be quickly and accurately set, either with the receiver in the case or with the case removed.

Insert a small screw driver in the hole through each push button and loosen (do not remove) the set screw in the bottom of the hole. By means of the conventional tuning knob, tune in AS ACCURATELY AS POSSIBLE the favorite station having the highest frequency—that is, the station nearest the left-hand end of the dial. Completely depress and hold the No. 1 push button on the left and tighten the set screw **SECURELY**.

The push button tuning system is now correctly set for the 1st station. Follow through with this same procedure, setting the other four stations in the order of their frequency (kilocycles).

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

One terminal of the output meter is connected to the plate of the 6A5-G output tube and the other terminal should be connected to the cathode of the 6X5-G rectifier tube. **BE SURE THE OUTPUT METER IS PROTECTED FROM D. C. BY CONNECTING A CONDENSER (1.1 MF. or larger—NOT electrolytic) IN SERIES WITH ONE OF THE LEADS.**

1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6U7-G I. F. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I. F. trimmer condensers for maximum output. Fig. 3.

(e) Transfer generator lead to top of 6A8-G Osc. Mod. tube, leaving the tube's grid clip in place.

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (d) and (f) for more accurate adjustments.

IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf.) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC." section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT." section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(g) Repeat operation (e) for more accurate adjustment.

3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, located between the control knobs on the front of the chassis, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

REPLACING DIAL DRIVE CORDS

Two dial drive cords are used and should the innermost cord break, it will be necessary to remove the outer cord and large pulley before the inner cord can be replaced.

To replace the inner cord:

(1) After removing the broken cord, place the

chassis on end with the push buttons "up" and the speaker toward you.

(2) Thread an 18" length of drive cord through the hook on one end of the tension spring which was removed from the pulley on the end of the push button rocker plate.

(3) Insert both ends of this cord through the eyelet in the rocker plate pulley from the inside. Pull the cord through until the tension spring is pulled into the pulley, then hook the free end of the spring over the catch in the pulley in the side opposite the eyelet.

(4) Open the condenser gang all the way.

(5) Pull all but approximately $4\frac{1}{2}$ " of the cord through the eyelet. Loop the $4\frac{1}{2}$ " end of the cord around the lower half of the pulley.

(6) Loop the long end of the cord over the top of the pulley and back over the brass idler pulley to the drive shaft. Continue the cord around the drive shaft, threading from the inside and over the top. Wrap four complete turns of the cord around the drive shaft and continue the cord over the top of the rocker plate pulley.

(7) Pull on the short end of the cord until the tension spring in the pulley is stretched to within $\frac{1}{8}$ " of the eyelet. Maintain this tension and tie a knot in the two ends of the cord over the catch which holds the spring. Loop the cord over the spring catch so that the knot is turned in. (A drop of bees' wax on the knot would be an added protection against coming untied.)

To replace the outer cord:

(1) Place the chassis in a horizontal position with the push buttons to the left and the speaker toward you.

(2) Close the condenser gang and mount the large drive pulley on the shaft. Place the pulley on the condenser shaft so that the shaft is flush with the outside of the pulley bushing and the eyelet in the pulley is horizontal with the shaft and toward the dial.

(3) Cut a 22" length of drive cord and tie a knot $\frac{1}{2}$ " from the two ends.

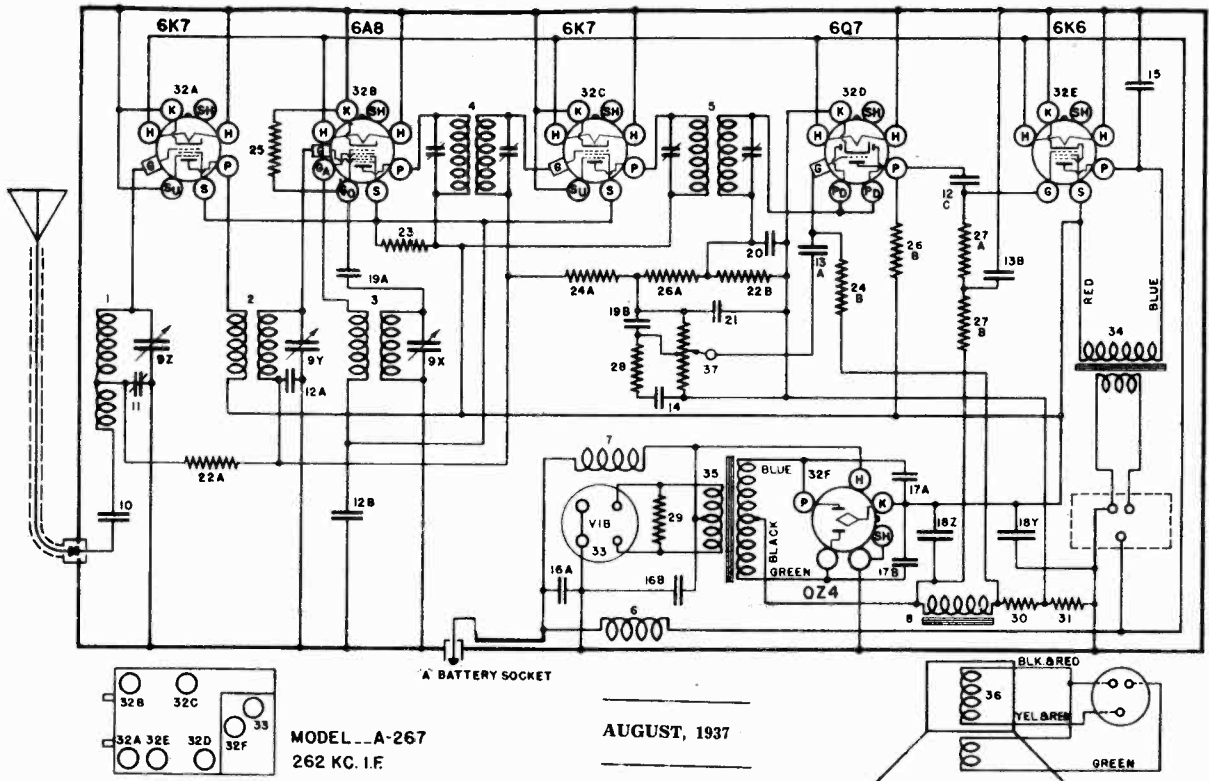
(4) Hook one end of the tension spring over the catch provided in the pulley and hook the other end over the drive cord at the knot.

(5) Thread the cord through the eyelet in the pulley and extend one side up and over the vertical brass pulley. Loop this lead around the horizontal idler pulley at the left-hand side of the dial and then around the idler pulley at the right-hand side of the dial and then over the top of the large drive pulley. The tension on the spring should be sufficient to stretch it to within approximately $\frac{1}{2}$ " of the eyelet.

(6) With the gang closed, move the pointer to the extreme right-hand end of the dial. Press the cord into the slots in the back of the pointer and check to see that the pointer travels from one end of the dial to the other as the gang is opened and closed. It may be advisable to place some Aratex or other liquid adhesive on the cord where it fits into the pointer.

CROSLY RADIO CORP.

MODEL A267
Schematic, Socket
Parts



A BATTERY SOCKET

MODEL A-267
262 KC. I.F.

AUGUST, 1937

Power output approximately 5 watts.
Battery drain approximately 6.3 amperes at 6 volts.
Speaker field current approximately 1.0 amperes.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G134-32000	Ant. Coil	W	-50023	Tube Shield (6K6-C) (2)
2	G93-32001	R-F. Coil	W	-31210	Tube Shield Ring
	MG23-50000	Shield and Brkt. Assy.	W	-50174	Tube Shield Base
	W	-32912	W	G105-28807	Socket-Vibrator
3	G143-32002	Osc. Coil	W	-50123	Vib. Ground Clip
4	G40-32005	1st I-F. Assy.	W	-24628	Output Transformer
5	G41-32005	2nd I-F. Assy.	W	-38991A	Speaker Socket. Part of G1-43619 Assy.
6	G17-32977	Motor Noise Choke	35	G17-32769	Power Transformer
7	G24-28067	"A" Filter Choke	36	456B99" M"	Speaker, Spec. No. 1-D-1075
8	G79-24628	"B" Filter Choke	W	-44548	V. C. and Cone Assy.
9ZYX	G57-33002	3 Sect. Var. Tuning Condenser	W	-44549	Field Coil
10	W	-50039B	W	-43676	Cone Mtg. Ring
11	W	-50054A	W	-50056	Volume Control (2 Mex. Tap 1 Mex.)
12A	W	-32380	W	-38455A	Case Mtg. Spacer
12B	W	-32380	W	-6213	Mtg. Nut (2)
12C	W	-32380	W	-32957	Mtg. Washer (2)
13A	W	-24049C	W	-32783A	24" Ant. Lead
13B	W	-24049C	W	-38038D	Distributor Suppressor
14	W	-50084	W	-29751C	Generator Condenser
15	W	-50043	W	-32956A	Mtg. Studs
16A	W	-50161	B	-38985C	Remote Cont. Head and Cables
16B	W	-50161	W	-43849	Vol. Cont. Head and Cable Assy.
17A	W	-50185	W	-50103	Vol. Cont. Head and Switch
17B	W	-50185	W	-43567	Dial Light
18YZ	W	-50194	W	-50100	Light Socket and Lead
19A	G1-34002	Condenser, 0.0025 Mf. Mica	W	-50099	"A" Lead to Set
19H	G1-34002	Condenser, 0.0025 Mf. Mica	W	-50097	"A" Lead—Head to Fuse
20	G3-34002	Condenser, 0.005 Mf. Mica	W	-50098	"A" Lead—Fuse to Ammeter
21	G2-34002	Condenser, .000. Mf. Mica	W	-50095	Vol. Cont. Flex. Drive Cable
22A	W	-35601	W	-50101	Drive Control Head
22B	W	-35601	W	-50206	Celluloid Gear Assy.
23	W	-37377	W	-50096	Cond. Flex. Drive Cable
24A	W	-35602	W	-50357	Fuse, 15 Amp.
24B	W	-35602	G10	-38000	Vibrator
25	W	-35928	MG2	-50267	Top Cover Assy. (Spk., etc.)
26A	W	-35600	W	-50180A	Ground Strip (Short)
26B	W	-35600	W	-50181A	Ground Strip (Long)
27A	W	-38976	B	-50187	Speaker Escutcheon
27B	W	-38976	B	-50188	Speaker Screen
28	W	-40757	B	-50189A	Speaker Grille Cloth
29	W	-38977	W	-50069A	Speaker Cable Clamp
30	W	-23012A	W	-31393A	"A" Connector on Chassis
31	W	-25357	W	-31303A	Bushing and Ferrule Used in "A" and Ant. Connections
32	G178-36400	Socket—8 Prong	W	-31301	Spring—Used in Ant. Socket
	W	-50021			
	W	-50022			

MODEL A267

Socket, Trimmers
Layout, Voltage
Alignment

CROSLLEY RADIO CORP.

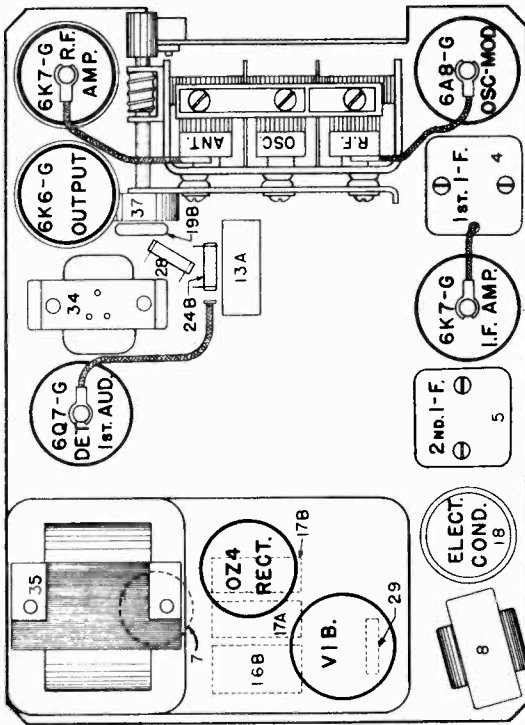


Fig. 2 Top View A-267

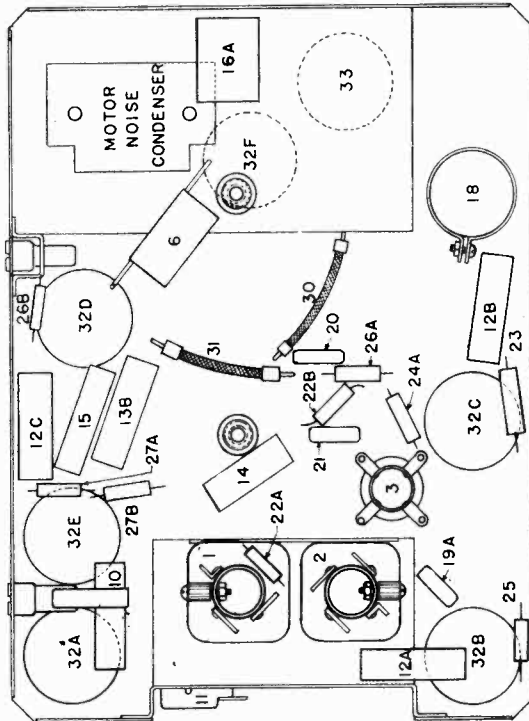


Fig. 3 Bottom View A-267

plates of the tuning condenser are completely in mesh, and turn the volume control full (ON).

(c) Set the signal generator to 262 kilocycles.

(d) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. **Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1530 kilocycles.

(c) With the condenser gang all the way open, adjust the "OSC" trimmer condenser so that the 1530 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune-in the 1400 kilocycle signal with the station selector (approximately 140 on the dial) for maximum reading on the output meter.

(f) Adjust the "R-F" trimmer condenser for maximum output.

(g) Adjust the "ANT" trimmer condenser for maximum output.

DO NOT READJUST THE "OSC" TRIMMER CONDENSER.

(h) Repeat operations (e), (f) and (g) for more accurate adjustments.

3. **Adjusting Antenna Compensating Condenser.**

(a) Set the signal generator to 600 kilocycles.

(b) Tune-in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Item No. 11, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

SPECIFICATIONS
The Crosley Model A-267 auto radio is a single unit, six-tube superheterodyne receiver. The power supply unit is built into a completely shielded compartment and is an integral part of the receiver chassis. The tuning range is from 540 to 1530 Kc.

TUBES AND VOLTAGE LIMITS
The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the receiver chassis. Voltage readings taken with a 1000 ohm per volt, 500 volt voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

NOTE: The negative bias applied to the first three tubes is -3.5 volts, measured across a 75 ohm resistor (Item 31). The 6Q7C tube has a negative bias of -1.9 volts measured across a 40 ohm resistor (Item 30). The 6K6G output tube has a negative bias of -20 volts applied to the grid and is measured from the high side of the "B" filter choke (Item 8) to chassis.

ALIGNMENT PROCEDURE
All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER
Connect the output meter to P and S of the 6K6G Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

NOTE: The receiver chassis should be in its case and a speaker similar to one used with the receiver must be connected to the chassis before making adjustments. It is advisable to use a spare control unit for making adjustments of the volume control and tuning condenser. A standard control unit with short cables (6" to 8") makes a very convenient and useful tool. If it is desired to shorten a pair of long cables it will be absolutely necessary to heavily tin the cables before cutting them.

1. **Tuning I-F Amplifier to 262 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor maximum volume in the speaker.

(c) Adjust the antenna compensating condenser for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

Tube	Function	H	S	K	G0	Ga
6K7C	R-F Amplifier	6.0	85	0	0	85
6A8C	Oscillator-Modulator	6.0	235	0	0	—
6K7C	I-F Amplifier	6.0	85	0	—	—
6Q7C	Det. AVC & A-F Amplifier	6.0	145	0	-3.5	—
6K6G	Output	6.0	235	0	—	—
OZ4	Rectifier	—	—	250	—	—

TUBE SOCKET VOLTAGE READINGS

CROSLLEY RADIO CORP.

MODEL A358, Roamio
Schematic, Socket
Trimmers, Layout
Voltage

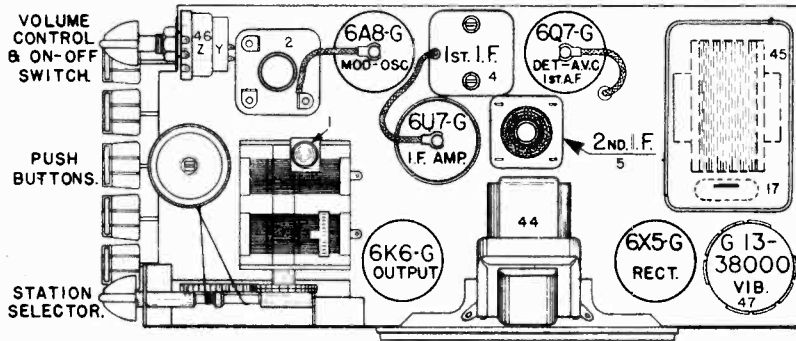


Fig. 2 Top View A-358

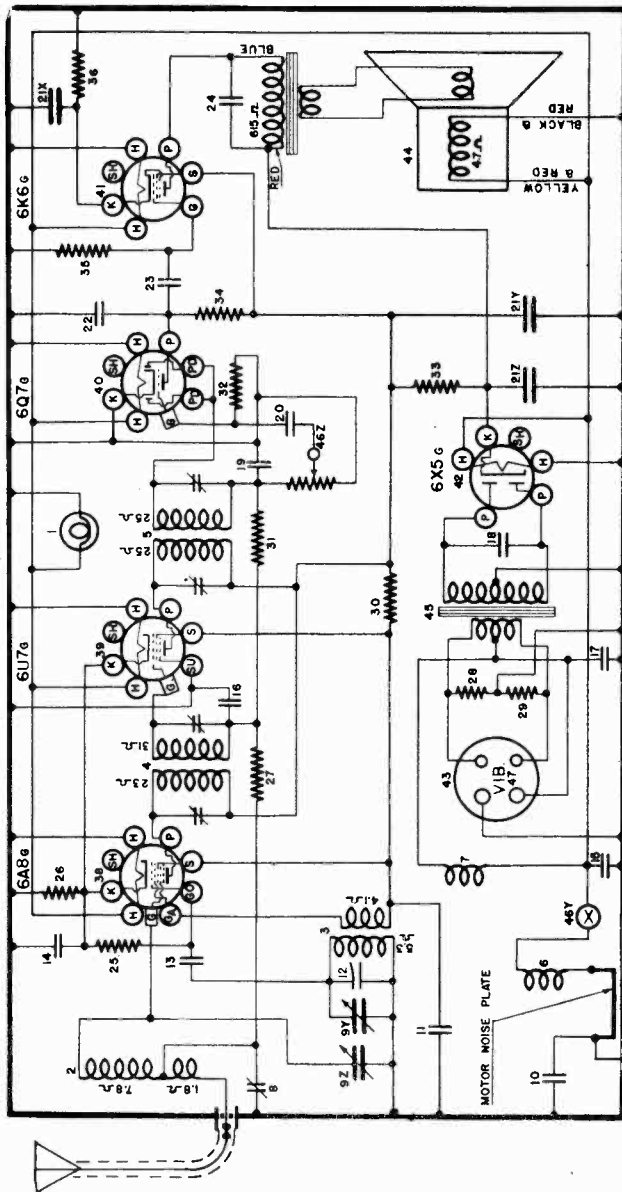


FIG. 1—WIRING DIAGRAM—MODEL A-358

JUNE, 1938

SPECIFICATIONS

This model Crosley Roamio is a single unit five-tube superheterodyne receiver. It incorporates an unusual push button tuning system of rugged mechanical design that is positive, accurate, and easy to adjust and operate. A highly efficient superheterodyne circuit employs five tubes to the utmost advantage as follows: one tube 6A8G as an oscillator and mixer or modulator, one 6U7G as an intermediate frequency amplifier, one 6Q7G meter (except filaments) with receiver in operating as detector, A. V. C. and 1st. A.F. amplifier, one 6K6G as power output amplifier and a 6X5G as a rectifier. A full wave vibrator is used. Bias for the 6A8G and should be measured with an accurate low range D.C. voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

TUBES AND VOLTAGE LIMITS
The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the receiver chassis. Voltage readings taken with a 1000 ohm per volt, 500 volt voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages are measured with an accurate low range D.C. voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

Tube	Function	H	P	S	Su	K	Ga	Co
6A8-G	Oscillator-Modulator	6.0	220	100	—	3.7	100	—
6U7-G	I-F Amplifier	6.0	220	100	—	3.7	100	—
6Q7-G	Diode Detector & A-F Amp.	6.0	65	220	—	16	—	—
6K6-G	Output	6.0	220	—	—	—	—	—
6X5-G	Rectifier	6.0	—	—	—	250	—	—

Power Output approximately 4 Watts. (Max.)
Battery Drain approximately 6.2 Amperes at 6 Volts.
It should be noted that some of the tugs on the sockets are used as junction blocks.

MODEL A-358
455 KC. I.F.

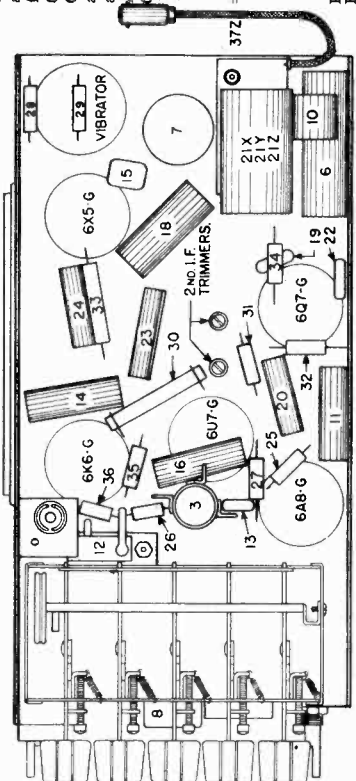


Fig. 3 Bottom View A-358

CROSLLEY RADIO CORP.

MODEL 418, Vanity Schematic, Socket Trimmers, Layout

MODEL 418 (VANITY) SPECIFICATIONS

This model Crosley is a four-tube Tuned Radio Frequency receiver designed for operation on 110 volt circuits, either A.C. or D.C. The features incorporated are, Push Button Tuning, Dynamic Speaker, Pentode Output and a highly efficient T. R. F. circuit. The frequency range is from 1725 to 540 kilocycles. The tubes used are, one 6D6 as R-F amplifier, one 6C6 as detector, one 25A7G as Pentode output and Rectifier, and one W-45788 Ballast tube. The volume control changes the bias on the 6D6 and, at the same time the amount of signal fed to the antenna coil primary. The bias for the 6C6 is obtained from the voltage drop across item 17 (25000 ohm resistor) and the bias for the 25A7G is obtained from the drop in the speaker field (525 ohm), which is in the negative leg. This voltage is filtered by item 19 (200,000 ohm resistor) before it is applied to the output grid.

This receiver incorporates a certain amount of fixed regeneration to improve selectivity and sensitivity. With a normal antenna the receiver is stable and the performance approaches that of a three gang T. R. F. receiver in spite of the fact that only a two gang condenser is used. However with no antenna or a very small antenna the receiver will oscillate but this oscillation can readily be controlled by the volume control.

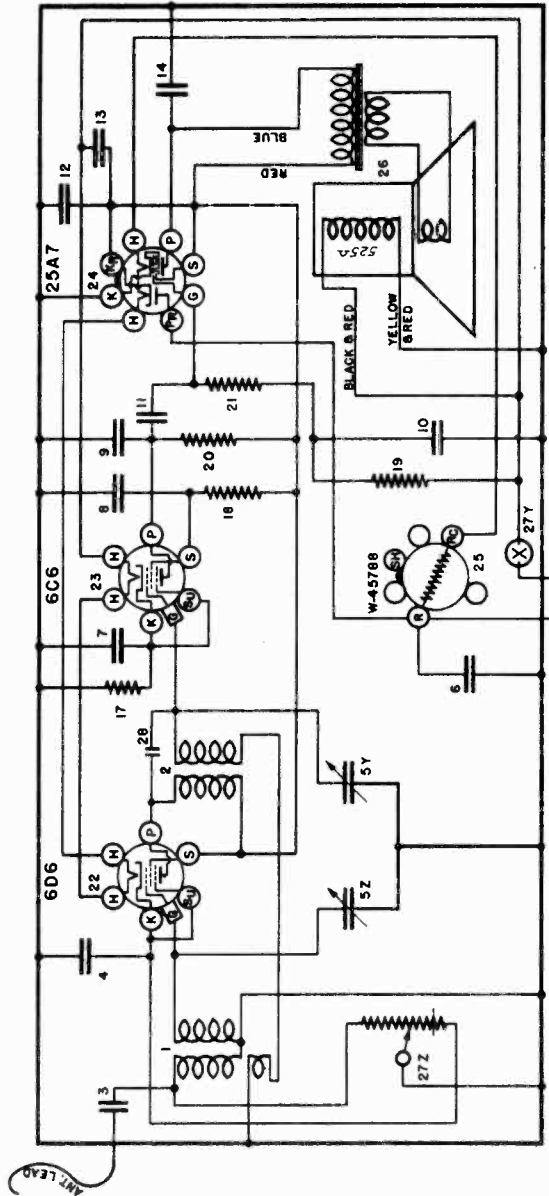


FIG. 1—WIRING DIAGRAM—MODEL 418

JUNE, 1938

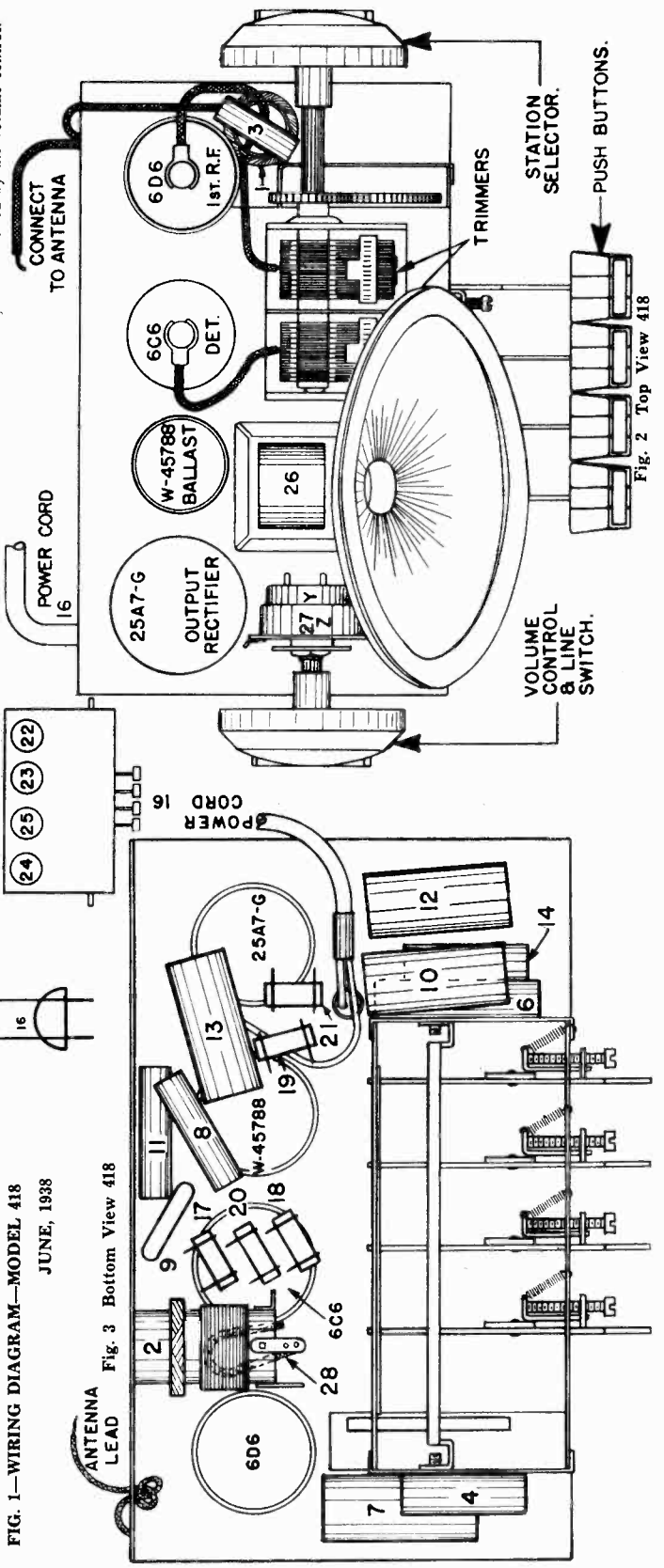


Fig. 3 Bottom View 418

Fig. 2 Top View 418

MODEL 418, Vanity
Tuner, Alignment
Voltage, Parts

CROSLY RADIO CORP.

SETTING THE PUSH BUTTONS

The push buttons may be quickly and accurately set from the front of the receiver. Insert a small screw driver in the hole in the front of each push button to be set and loosen (DO NOT REMOVE) the set screw at the bottom of the hole.

Determine the favorite broadcasting stations whose call letters are to be placed in the push buttons. By means of the station selector knob, tune-in AS ACCURATELY AS POSSIBLE the station having the highest frequency (kilocycles), that is the one nearest the 150 marking on the knob. Completely depress and hold the right hand push button in that position, while you SECURELY TIGHTEN THE SET SCREW.

The push button system is now set for the first station. Follow through with this same procedure, setting the other stations in the order of their frequency (kilocycles).

Cut the call letters of the stations selected, from the list supplied with your receiver and press them into the openings in the front of the push buttons. Four pieces of clear celluloid are supplied in a small envelope and should be snapped into place over the call letters to protect and hold them in place.

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with volume control full on and no signal input. The filament voltages should be measured with an accurate low range voltmeter. Voltage limits may vary plus or minus 10% of values given.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6D6	R. F. Amplifier	6.3	103	104	2.5-25	2.5-25	—
6C6	Detector	6.3	24	8	10	10	—
25A7-G	Output	25	95	104	—	—	-10
	Rectifier	25	—	—	124	—	—
W-45788	Ballast	80 A. C.					

Power Output approximately 1.0 watts @ 125 Line. Drop across field 20 volts.
Power consumption at 117.5 volts A. C. = 44 watts.
All readings except filaments will be approx. 15% lower at 117.5 D. C.

PARTS LIST — MODEL 418 Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G173-32000	Antenna Coil		—46045	Output Transformer
2	G102-32001	Oscillator Coil		W —45900A	Speaker Mtg. Brkt.
3	W —45780B	Condenser, .02 Mf. 160 Volt	27Z }		Volume Control (40,000 Ohm)
4	W —45780B	Condenser, .02 Mf. 160 Volt	27Y }	—45786	
5Z }	G53 —33001	2 Section Gang Condenser	28	W —45789A	Line Switch
5Y }				G3 —50640	V. C. Mtg. Brkt.
6	W —45782B	Condenser, .05 Mf. 400 Volt		G6 —45683	Condenser, 7-10 Mmf.
7	W —45781B	Condenser, .25 Mf. 160 Volt		G27 —45683	Push Button Unit
8	W —45780B	Condenser, .02 Mf. 160 Volt		G26 —45683	Rocker Plate Assy.
9	G2 —34002	Condenser, .0001 Mf. Molded		W —50542C	Key Assy.
10	W —45781B	Condenser, .25 Mf. 160 Volt		W —45717	Key Clip (Lock Clamp)
11	W —45780B	Condenser, .02 Mf. 160 Volt		W —50607B	Adjusting Screw
12	W —45783	Condenser, 16 Mf. 150 Volt		W —50561	Spring (Key Return)
13	W —45783	Condenser, 16 Mf. 150 Volt		W —50547	Bearing Screw (Rocker Plate)
14	W —45780B	Condenser, .02 Mf. 160 Volt		W —50547	Key Plate (Rear Guide)
15	—None			W —45788	Ballast Tube
16	B —45784	Power Cord & Plug		W —46259	Cabinet Assy. 8BB (Brown)
	W —45902	Clamp—Power Cord		W —45828B	Back Cabinet 8BB (Brown)
17	—24990	Resistor, 25,000 Ohm 1/3 W.		W —45930C	Rubber Foot (Bottom)
18	—37583	Resistor, 2.5 Megohm 1/3 W.		W —45931	Rubber Foot (Screw Type)
19	—34018	Resistor, 200,000 Ohm 1/3 W.			(Back)
20	—23785	Resistor, 500,000 Ohm 1/3 W.		W —45852	Baffle Board
21	—21455	Resistor, 300,000 Ohm 1/3 W.		W —45853	Grille Cloth
22	G21 —28807	Socket, 6 Prong		—45553B	Push Button (Brown)
23	G21 —28807	Socket, 6 Prong		—45822	Dial Knob (Brown)
24	G178-36400	Socket, 8 Prong (Octal)		—45825A	Vol. Cont. Knob (Brown)
25	G178-36400	Socket, 8 Prong (Octal)		—50549	Station Call Letter List
	W —34175	Tube Shield Half (Slotted)		W —50551A	Celluloid Protector (Cover)
	W —34174	Tube Shield Half			
	W —31210	Ring—Tube Shield			
26	282-BL-4	Speaker Mfg. Spec. No. 5-B-129			

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25A7G output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd., or larger—not electrolytic) in series with one of the leads.

ALIGNMENT PROCEDURE

The chassis of this receiver is connected through the speaker field to one side of the power line and should be isolated in order that the power supply will not be short-circuited while the receiver is being aligned.

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead on the set and the other lead through a .001 mf. condenser to the chassis (if your signal generator is A.C. operated).

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kc.

(d) Adjust the trimmers on the gang until the 1725 Kc. signal is heard. Gang does not have to tune through this signal.

(e) Set the generator to 1400 Kc.

(f) Tune set to 1400 signal, then alternately adjust trimmers on gang until no further improvement can be noted.

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

Keep the two grid leads as far as possible from each other.

Check Push Buttons to see if they need resetting.

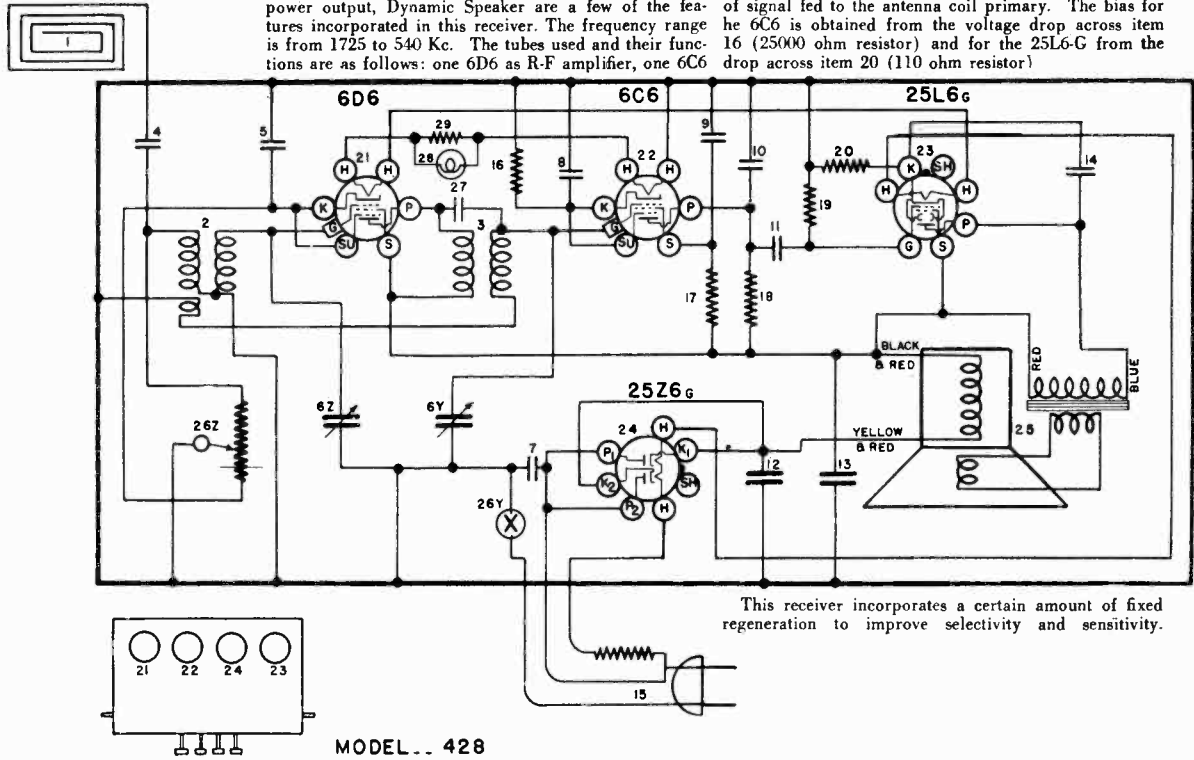
CROSLY RADIO CORP.

MODEL 428
Schematic, Socket
Trimmers, Layout

SPECIFICATIONS

This model, Crosley is a four-tube Tuned Radio Frequency receiver designed for operation on 110 volt circuits, either A. C. or D. C. Push Button tuning, Beam power output, Dynamic Speaker are a few of the features incorporated in this receiver. The frequency range is from 1725 to 540 Kc. The tubes used and their functions are as follows: one 6D6 as R-F amplifier, one 6C6

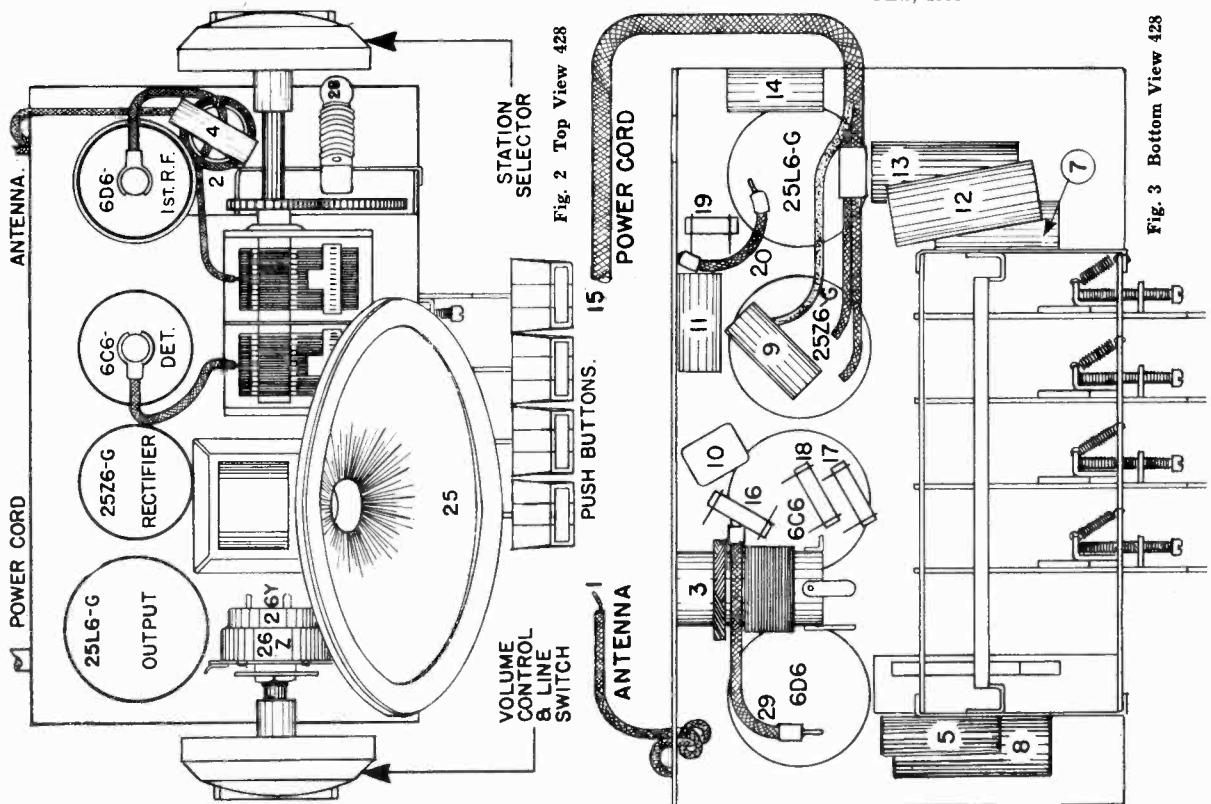
as biased detector, one 25L6-G as beam power output and one 25Z6-G as rectifier. The volume control varies the bias on the 6D6 and at the same time the amount of signal fed to the antenna coil primary. The bias for the 6C6 is obtained from the voltage drop across item 16 (25000 ohm resistor) and for the 25L6-G from the drop across item 20 (110 ohm resistor)



This receiver incorporates a certain amount of fixed regeneration to improve selectivity and sensitivity.

FIG. 1—WIRING DIAGRAM—MODEL 428

JULY, 1938



MODEL 428
Tuner, Alignment
Voltage, Parts

CROSLEY RADIO CORP.

**MODEL 428 VANITY DE LUXE
CONNECTING OUTPUT METER**

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6-G Output tube. Be sure the output meter is protected from D. C. by connecting a condenser (.1 mfd. or larger —NOT electrolytic) in series with one of the leads.

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an A. C. operated signal generator for alignment the following precaution should be taken.

- (a) Connect the output lead of the signal generator through a .0001 Mf. condenser to the antenna lead on the receiver (after the antenna has been completely unrolled. The ground lead of the generator should be connected through a .001 Mf. condenser to the chassis.
- (b) Open the gang condenser all the way.
- (c) Set the generator to 1725 Kilocycles.
- (d) Adjust the trimmer condensers on the gang until the 1725 Kc signal is heard. The gang does not have to tune through this signal.
- (e) Set the generator to 1400 Kc.
- (f) Tune the set to the 1400 Kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

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

With a normal antenna the receiver is stable and the performance approaches that of a three gang T. R. F. receiver in spite of the fact that only a two gang condenser is used. However with no antenna or a very small antenna the receiver will oscillate but this oscillation can readily be controlled by the volume control.

Keep the two grid leads as far as possible from each other.

If the receiver has been re-aligned it may be necessary to readjust the setting of the push buttons.

SETTING THE PUSH BUTTONS

See MODEL 418

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with volume control full on and no signal input. The filament voltages should be measured with an accurate low range voltmeter. Voltage limits may vary plus or minus 10% of values given.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6D6	R-F Amplifier	6.3	97	98	2.5-25	2.5-25	—
6C6	Detector	6.3	20	10	7	—	—
25L6-G	Output	25	85	98	6	—	—
25Z6-G	Rectifier	25	—	—	126	—	—

Power output approximately 2 watts.

Power consumption at 117.5 volts line 45 watts (A.C.).

All readings except filaments will be approximately 15% lower on 117.5 D. C.

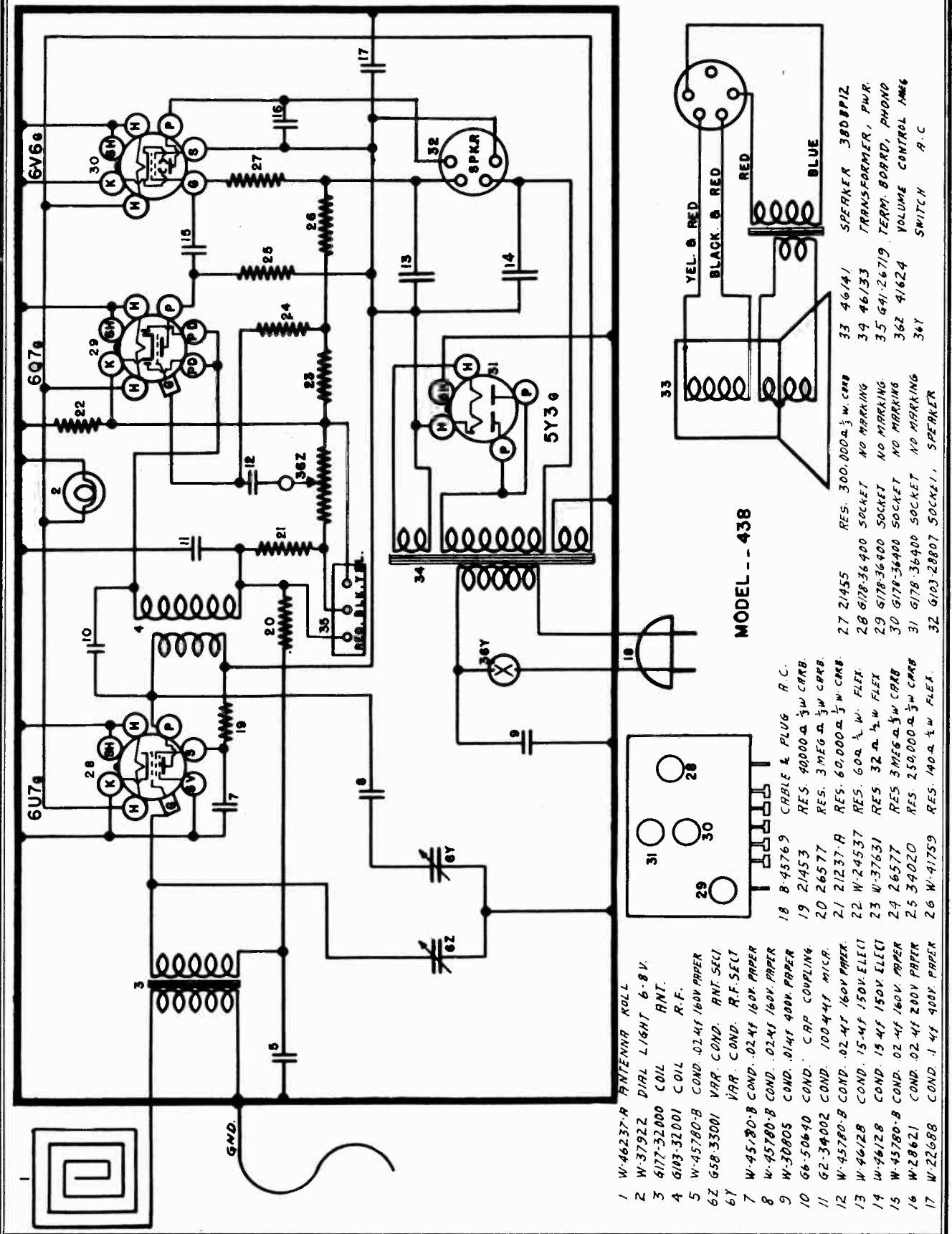
Drop across field 28 volts.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —45577	Antenna Roll	27	G3 —50640	Condenser Assembly
2	G180—32000	Antenna Coil	28	W —44337	Dial Light, 6-8 Volt
3	G104—32001	R. F. Coil		W —40570	Dial Light Shield
4	W —45780B	{ Condenser, .02 Mf. 160 V. Condenser, .02 Mf. 160 V.	29	G6 —27134	Dial Light Socket
5			W —44396	Resistor, 40 Ohms 3½W. Flex.	
6Z 6Y	G53 —33001	2 Section Gang Condenser		PUSH BUTTON PARTS	
7	W —45782B	Condenser, .05 Mf. 400 V.	G6 —45683	Push Button Unit Assembly	
8	W —45781B	Condenser, .25 Mf. 160 V.	G26 —45683	Key and Toggle Assembly	
9	W —45780B	Condenser, .02 Mf. 160 V.	W —50542C	Key Clip (Lock Clamp)	
10	G2 —34002	Condenser, .0001 Molded		Adjusting Screw	
11	W —45780B	Condenser, .02 Mf. 160 V.	G27 —45683	Rocker Plate Assembly	
12	W —45783	Condenser, 16 Mf. 150 V. Elect.	W —50561	½" —No. 6 x 40 Screw (Rocker Plate Bearing)	
13	W —45783	Condenser, 16 Mf. 150 V. Elect.		Key Plate (Rear Guide)	
14	W —45817A	Condenser, .05 Mf. 160 V.	W —50547	Spring (Push Button Slide)	
15	B —46114	Power Cord (165 Ohm 15W Lead)	W —50607B	Push Button	
	W —45902	Cord Clamp		—45832 Dial Knob	
16	—24990	Resistor, 25,000 Ohms ½W.		—45830 Knob, V. C.	
17	—37583	Resistor, 2.5 Meg Ohms ½W.		—45831A Call Letter Sheet	
18	—23785	Resistor, 500,000 Ohms ½W.		—50549 Celluloid Cover	
19	—23785	Resistor, 500,000 Ohms ½W.	W —50551A	Cabinet Assy. Complete	
20	W —45965	Resistor, 110 Ohms ½W. Flex.	W —46260	Cabinet	
21	G21 —28807	6 Prong Socket		—45814C Cabinet Back	
22	G21 —28807	6 Prong Socket		—45829B Grille Cloth	
23	G178—36400	8 Prong Socket	W —45853	Rubber Mounting Foot	
24	G178—36400	8 Prong Socket	W —45930C	Mounting Screw and Foot	
	W —34175	Tube Shield Half (Slotted)	W —45931	Baffle Board	
	W —34174	Tube Shield Half (Plain)	W —45852	Cabinet Assembly	
	W —31210	Tube Shield Ring		—46260	
25	281-BL-5-U	Speaker Spec. 5-B-130			
	W —45900A	Speaker Mtg. Bracket			
26Z 26Y	—45786	{ Volume Control, 40,000 Ohms On-Off Switch			
			W —45789A	V. C. Mtg. Bracket	

CROSLY RADIO CORP.

MODEL 438
Schematic
Parts



- 1 W-46237-A ANTENNA KOLL
- 2 W-37922 DIAL LIGHT 6-8 V.
- 3 6177-32000 COIL ANT. R.F.
- 4 6103-32001 COIL R.F.
- 5 W-45780-B COND. 02.4F 160V PAPER
- 6Z 658-33001 VAR. COND. ANT. SECT
- 6Y W-30805 VAR. COND. R.F. SECT
- 7 W-45780-B COND. 02.4F 160V PAPER
- 8 W-45780-B COND. 02.4F 160V PAPER
- 9 W-30805 COND. 01.4F 400V PAPER
- 10 66-50640 COND. CAP COUPLING
- 11 G2-34002 COND. 100.44F MICR.
- 12 W-45780-B COND. 02.4F 160V PAPER
- 13 W-46128 COND. 15.4F 150V. ELEC
- 14 W-46128 COND. 15.4F 150V. ELEC
- 15 W-45780-B COND. 02.4F 160V PAPER
- 16 W-28621 COND. 02.4F 200V PAPER
- 17 W-22688 COND. 1.4F 400V PAPER

- 18 B-45769 CABLE & PLUG A.C.
- 19 21453 RES. 40000 Ω 1/2W CARB.
- 20 26577 RES. 3 MEG Ω 1/2W CARB.
- 21 21237-A RES. 60,000 Ω 1/2W CARB.
- 22 W-24537 RES. 60 Ω 1/2W FLEX.
- 23 W-37631 RES. 32 Ω 1/2W FLEX.
- 24 26577 RES. 3 MEG Ω 1/2W CARB.
- 25 34020 RES. 250,000 Ω 1/2W CARB.
- 26 W-41759 RES. 140 Ω 1/2W FLEX.
- 27 21455 RES. 300,000 Ω 1/2W CARB.
- 28 6178-36400 SOCKET NO MARKING
- 29 6178-36400 SOCKET NO MARKING
- 30 6178-36400 SOCKET NO MARKING
- 31 6178-36400 SOCKET NO MARKING
- 32 G103-28807 SOCKET, SPEAKER
- 33 46141 SPEAKER 300BP12
- 34 46133 TRANSFORMER, PWR.
- 35 641-26719 TERM. BOARD, PHONO
- 36Z 41624 VOLUME CONTROL KMG
- 36Y SWITCH A.C.

MODEL -- 438

MODELS 517,547 Late
5517
Voltage, Data, Changes
Alignment

CROSLLEY RADIO CORP.

output. Readjust the station selector slightly so that the generator signal is tuned in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE "OSC" TRIMMER.

NOTE 1: When shunt aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune in the signal both at the generator frequency, as indicated in the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned in at both positions but much stronger at the correct frequency.

NOTE 2: If at any time the H.F. coils are replaced, it may be necessary to vary the inductance of the "OSC" coil by moving the cross-over turn of wire at the gap to make the set track at the 6 megacycle end. Moving the turn toward the short end of the coil will decrease the inductance and moving it toward the long end will increase the inductance. If the signal is weak at 6 megacycles, a similar slight change in the inductance of the "ANT" coil should bring up the signal strength. THIS IS A CRITICAL OPERATION AND SHOULD NOT BE DONE ON ANY SET UNLESS CHANGING COILS MAKES IT NECESSARY.

**CHANGES IN PARTS LIST,
SERVICE SUPPLEMENT NO. 163**
Item 6, Part No. G136-32004 superseded by G138-32004.
Item 7, Part No. G137-32004 superseded by G139-32004.
Item 24, Part No. W-33012A superseded by W-23012A.
Item 36, Part No. 43569 Power Transformer—110 V., 50 cycles (Added).
Item 36, Part No. 43570 Power Transformer—220 V., 50 cycles (Added).
Part No. 40486, Pointer Screw (Added).

SHUNT ALIGNMENT FREQUENCIES
1400 Kilocycles
15000 Kilocycles

denser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

d. c. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning I-F Amplifier To 455 Kilocycles.
(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8C tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh and turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (Broadcast Band).

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. See Fig. 2.

(f) Adjust both trimmers located on the top of the 1st I-F transformer for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C), is heard. It is not necessary that the receiver tune through this signal.

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output.

(C) SIGNAL INPUT FREQUENCIES
Minimum Capacity
1725 Kilocycles
15400 Kilocycles

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underside side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang con-

can and Foreign broadcast reception. The tuning range is divided into two bands as follows:

(American Broadcast Band)
5.9-15.3 Megacycles or 51-18 Metres
(High Frequency or Foreign Band)
resistor, item 24, and the bias voltage for the 6K6G output tube is developed across a 275 ohm resistor, item 23. Items 23, 24 and 25 are located between the speaker field and ground.

SOCKET VOLTAGES

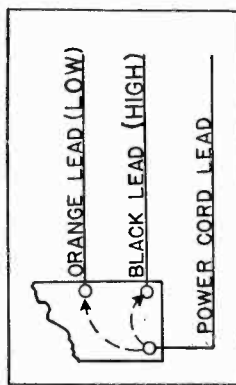
The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt 500 volt d. c. voltmeter (except filaments) with the receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range a. c. voltmeter (approximately 0-10 volts). Readings may vary plus or minus 10% of values given.

TUBE SOCKET VOLTAGE READINGS						
Tube	Function	H	P	S	K	Ga
6A8C	Oscillator-Modulator	6.3	160	115	0	160
6A7G	I-F Amplifier	6.3	160	115	0	-1.2
6Q7G	Detector & A-F Amplifier	6.3	80	160	25	-2.5
6K6G	Output	6.3	160	160	225	-5.9
5Y3G	Rectifier	5.0	—	—	—	—

Power output approximately 2 watts.
Power consumption approximately 40 watts at 117.5 volts.
Voltage drop across speaker field 35 volts.

50 CYCLE POWER TRANSFORMER ADJUSTMENT

Receivers equipped with a 50 cycle power transformer have a "high" and "low" voltage tap on the under side



of the chassis. The "high" voltage lead (BLACK) and the "low" voltage lead (ORANGE) are connected to a terminal strip near the transformer.

The voltage range of the "low" tap of the 95-130 volt transformer is from 95 to 112½ volts and of the "high" tap is from 112½ to 130 volts. The range of the "low" tap of the 190-260 volt transformer is from 190 to 225 volts and of the "high" tap is from 225 to 260 volts.

The accompanying illustration shows the connections for changing from high to low or low to high line voltage. Note the "jumper" wire which is attached to the terminal at which one side of the power cord is connected. The other end of this jumper wire should be attached to the ORANGE or BLACK lead of the transformer primary, according to the line voltage the receiver is to be used on.

NOTE: Any change made in the power supply circuit of the receiver should be plainly stamped or otherwise permanently recorded on the rear of the chassis.

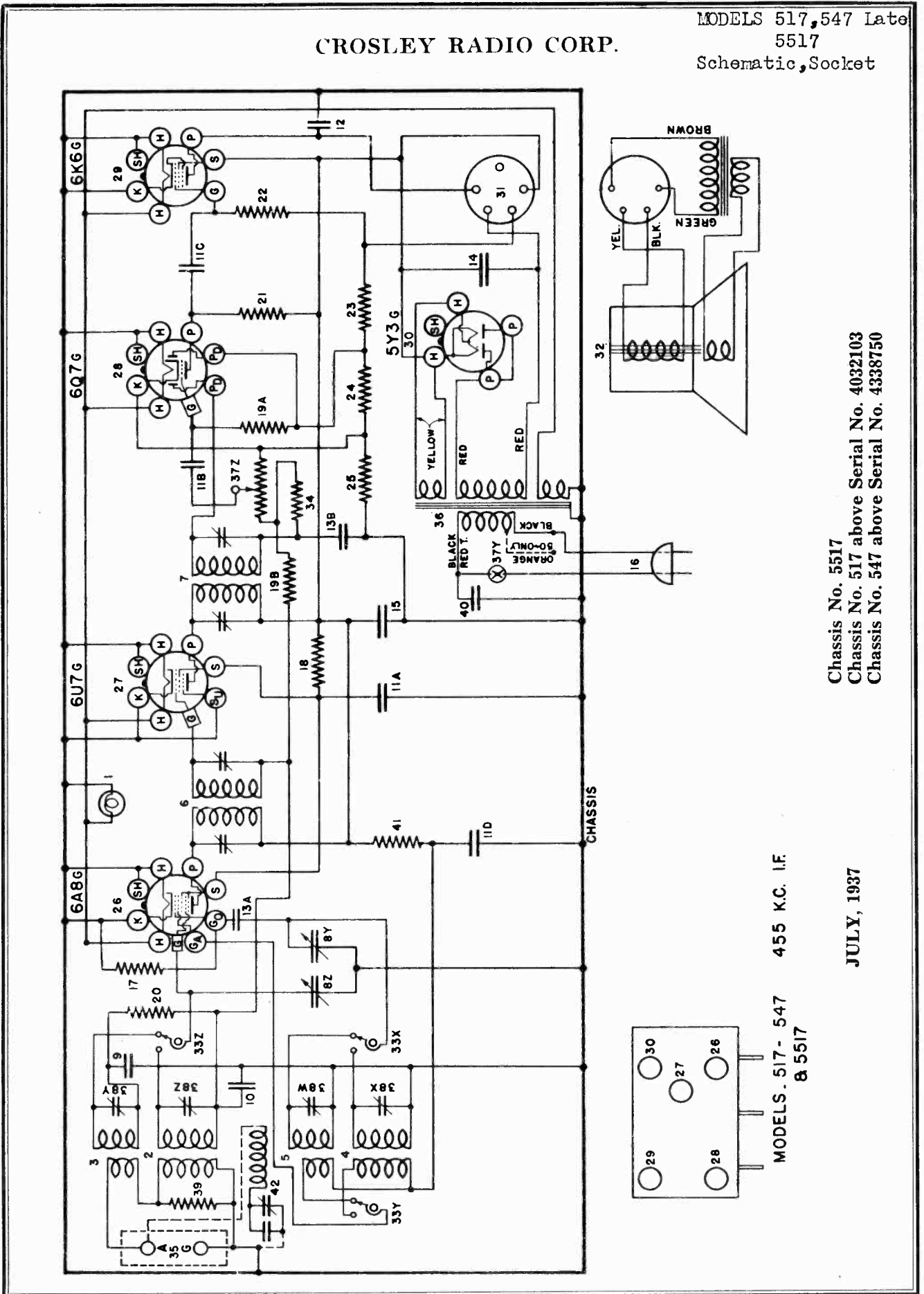
ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and output meter.

CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6G output tube. Be certain that the meter is protected from

CROSLEY RADIO CORP.



Chassis No. 5517
 Chassis No. 517 above Serial No. 4032103
 Chassis No. 547 above Serial No. 4338750

455 K.C. I.F.

JULY, 1937

MODELS 517- 547
 & 5517

MODELS 517, 547 Lato
5517

CROSLEY RADIO CORP.

Socket, Trimmers
Layout, Parts

PARTS LIST—MODEL 517, 547 and 5517

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-43567	Dial Light Bulb	32	7AE	Cab., Horizontal Table (517 and 547) Superseding 7H and 7HA
2	G2-44252	Light Socket Assy.		7B	Cab., Horizontal Table (517) Moulded Front
3	G132-32000	Ant. Coil, 1725-540 Kc.		7M	Cab., Console (517 and 547)
4	G133-32000	Ant. Coil, 6-15 Mc.		7MB	Cab., Console (5517)
5	G132-32002	Osc. Coil, 1725-540 Kc.		7MA	Cab., Vertical Table (517)
6	C132-32002	Osc. Coil, 6-15 Mc.		6KA	Cab., Vertical Table (547) Superseding 6K
7	G132-32004	1st I.F. Assy., 465 Kc.		7AD	Cab., Horizontal Table (547)
8	G132-32004	1st I.F. Assy., 465 Kc.		7A	Cab., Horizontal Table (547)
9	G132-32001	2 Section Gating Cond. (517) Quiltune		42927	Speaker, Spec. No. 51-A-5
10	B-44296C	Dial Face (517)		41473	V. C. and Cone Assy. for 257BP11"B"
11	B-44296C	Dial Face (547) Quiltune		257BP18"B	Output Trans. for 257BP11"B"
12	W-44001A	Face Support Ring (517)		43539	Speaker, Spec. No. 51-A-5
13	W-43778B	Face Support Ring (547) Quiltune		43586	V. C. and Cone Assy. for 257BP11"B"
14	W-43500A	Pointer Mtg. Screw (517 only)		462CP11"M"	Speaker, Spec. No. 1-D-971 (Cab.-6FF)
15	W-43968	Pointer Mtg. Screw (547)		40405	V. C. and Cone Assy. for 462CP11"M"
16	W-44267	Paper Dial Mask		43989	Output Trans. for 462CP11"M"
17	B-43544D	Dial Mtg. Bracket		44888	Field Coil for 462CP11"M"
18	W-44134	Drive Shaft		44889	Speaker, Spec. No. 1-D-1017 (Cab.-7M and 7MB)
19	W-43542B	Drive Shaft Bracket		43993	V. C. and Cone Assy. for 46BP15"M"
20	W-43549	Shaft Retaining Ring		43994	Output Trans. for 46BP15"M"
21	W-43561	Drive Cable		43448A	Band Selector Switch
22	W-43561	Tension Spring (Cable)		35500	Field Coil for 464BP15"M"
23	W-44085B	Dial Face (517)		43479	Resistor, 100,000 Ohm 1/4 W. Ins. Carb.
24	W-44085B	Dial Face (547)		43479	Ant. and Grid. Terminal Assy.
25	W-44085B	Dial Glass Support Ring (517)		43479	Power Trans., 110 V. 25 Cy.
26	W-44085B	Dial Glass Support Ring (547)		43479	Power Trans., 110 V. 25 Cy.
27	W-44085B	Glass Support Ring (5517)		43479	Power Trans., 220 V. 25 Cy.
28	W-44085B	Pointer Spacer (5517)		43479	Power Trans., 220 V. 25 Cy.
29	W-44833	Pointer Mtg. Screw (5517)		43479	Volume Control, 1 Meg.
30	W-44833	Drive Cord (18 inches) (5517)		43479	Line Switch
31	G12-34002	Condenser, .02 Mf. 150 V.		43479	4 Section Shunt Trimmer Cond. Assy.
32	W-36941	Condenser, .02 Mf. 400 V.		43479	Resistor, 20,000 Ohm 1/4 W. Carb.
33	W-36941	Condenser, .02 Mf. 400 V.		43479	Resistor, 10 Mf. 400 V. Carb.
34	W-36941	Condenser, .02 Mf. 400 V.		43479	Resistor, 50 Mf. 400 V. Carb.
35	W-36941	Condenser, .02 Mf. 400 V.		43479	Resistor, 50 Mf. 400 V. Carb.
36	W-36941	Condenser, .02 Mf. 400 V.		43479	Knob (3) 6K, 6FF, 7AC, 7AE, 7B, 7H, 7KD, 7MA, (7M-517)
37	W-36941	Condenser, .02 Mf. 400 V.		43479	Executcheon-6FF, 7AC, 7AE, 7B, (7M-517)
38	W-36941	Condenser, .02 Mf. 400 V.		43479	Executcheon-7MB Cab.
39	W-36941	Condenser, .02 Mf. 400 V.		43479	Knob (3) 7MB Cab.
40	W-36941	Condenser, .02 Mf. 400 V.		43479	Executcheon (Quiltune) Assy. (547)
41	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
42	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
43	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
44	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
45	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
46	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
47	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
48	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
49	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
50	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
51	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
52	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
53	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
54	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
55	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
56	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
57	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
58	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
59	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
60	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
61	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
62	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
63	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
64	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
65	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
66	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
67	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
68	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
69	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
70	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
71	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
72	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
73	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
74	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
75	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
76	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
77	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
78	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
79	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
80	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
81	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
82	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
83	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
84	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
85	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
86	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
87	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
88	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
89	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
90	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
91	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
92	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
93	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
94	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
95	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
96	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
97	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
98	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
99	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)
100	W-36941	Condenser, .02 Mf. 400 V.		43479	Calluloid Disc. (Brown) (547)

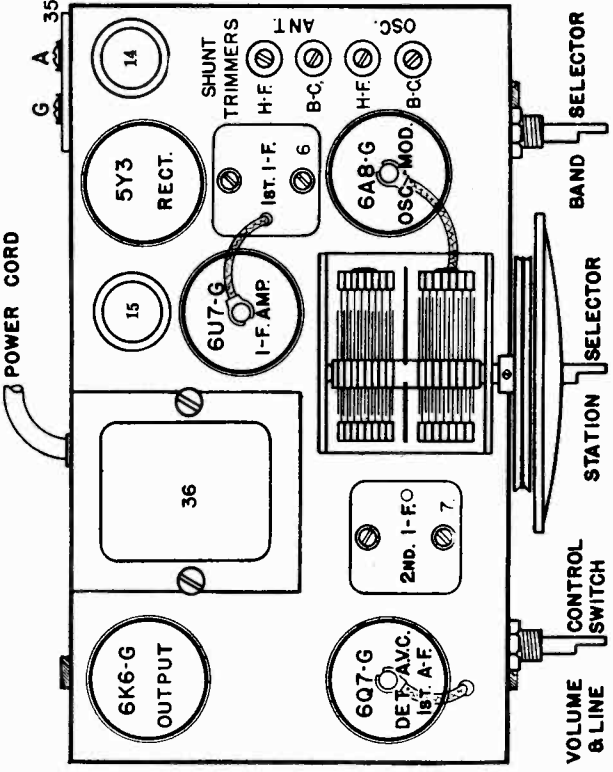


Fig. 2 Top View Models 517, 547 and 5517

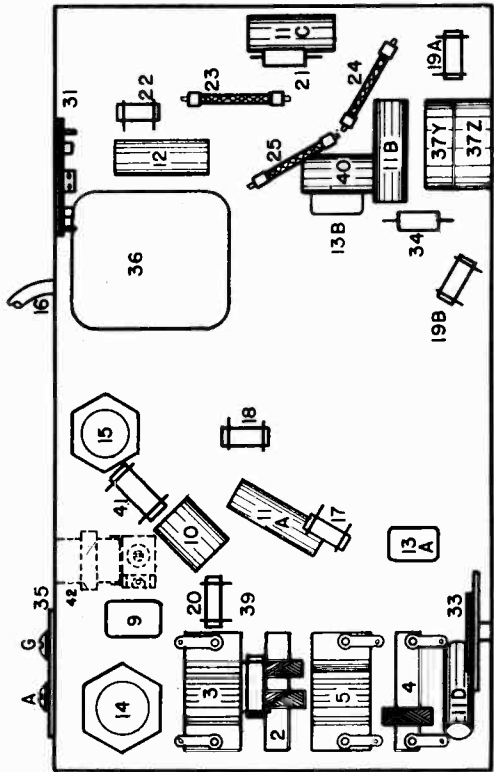


Fig. 3 Bottom View Models 517, 547 and 5517

Voltage

CROSLY RADIO CORP.

MODEL 527
Schematic, Socket

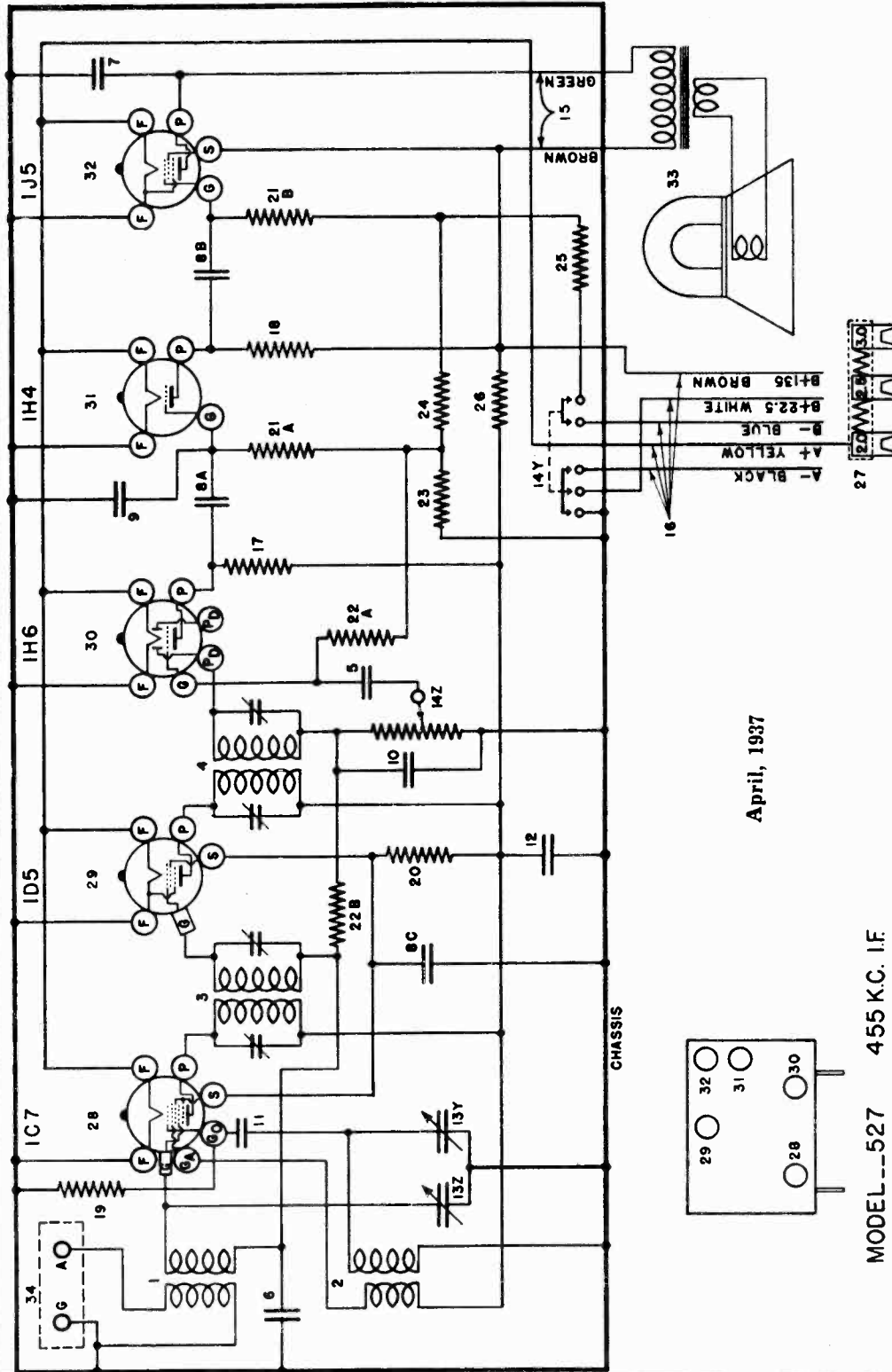
SPECIFICATIONS

The Crosley Model 527 radio is a five-tube superheterodyne receiver designed for operation from batteries. The method of connecting the battery cable to the batteries shown on the Wiring Diagram. The batteries required are: one two-volt storage battery or air cell battery and three plug-in type 45 volt "B" batteries.

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes

used, together with the voltage readings between the tube socket contacts and the negative side of the "A" battery circuit. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and the volume control full on and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter (Approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.



April, 1937

MODEL--527 455 K.C. I.F.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	C	Ga	Go
1C7-G	Oscillator-Modulator	2.0	112	37	0	112	-4**
1D5-G	I-F Amplifier	2.0	112	37	0	112	---
1H6-G	Detector & 1st A-F Amp.	2.0	56	---	0	---	---
1H4-G	2nd A-F Amplifier	2.0	43	---	0	---	---
1J5-G	Output	2.0	110	112	-4*	---	---

Power Output approximately 5 Watt.
 "A" Battery Drain approximately .42 Amperes at 2 Volts.
 "B" Battery Drain approximately 16 Milliamperes at 135 Volts.
 *Measured at Grid Terminal through 500,000 Ohm Grid Resistor.
 **Measured at Go Terminal with Dial Set at approximately 1000 Kc.

MODEL 527

Socket Trimmers
Layout, Parts
Alignment

CROSLLEY RADIO CORP.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.
(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.
(f) Check operations (d) and (e) for more accurate adjustments.
ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.
(b) Set the signal generator to 1400 kilocycles.
(c) Adjust the station selector to 140 on the dial.
(d) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output. Fig. 3.
(e) Adjust the trimmer located on the "Ant" section of the condenser gang for maximum output.
(f) Tune the station selector to the generator signal for maximum output.
(g) Repeat operation (e) for more accurate adjustment.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1J5G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 1C7G Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.
(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).
(c) Set the signal generator to 455 kilocycles.

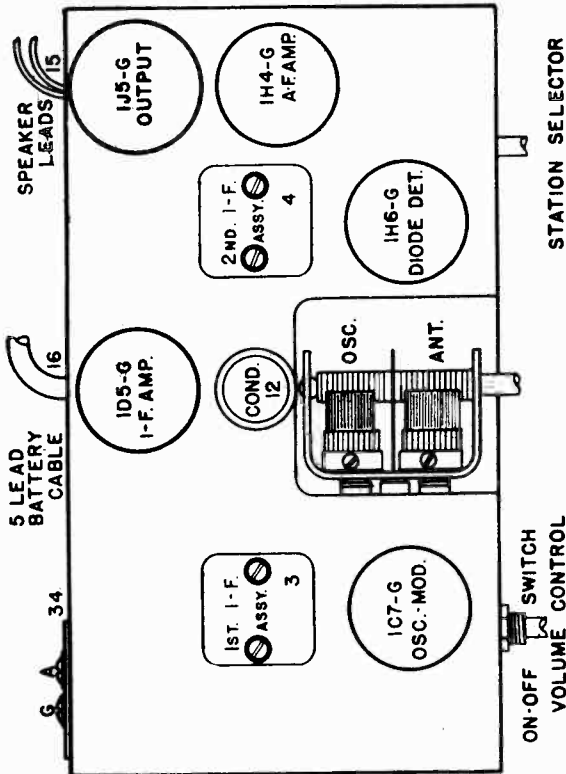


Fig. 2 Top View 527

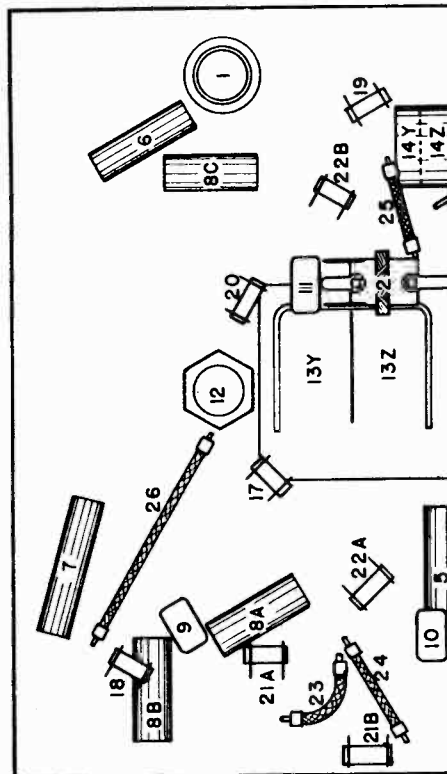


Fig. 3 Bottom View 527

PARTS LIST—MODEL 527

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G136-32000	Antenna Coil 540-1725 Kc.	28	G1	Socket Type 1C7
2	G136-32002	Oscillator Coil 540-1725 Kc.	29	G2	Socket Type 1D5
3	G146-32004	1st I-F Assembly, 455 Kc.	30	G3	Socket Type 1H6
4	G147-32004	2nd I-F Assembly, 455 Kc.	31	G4	Socket Type 1H4
5	W	Condenser .01 Mf. 200 V.	32	31P13 "B"	Speaker and V.C. Assembly
6	W	Condenser .02 Mf. 200 V.	33	43666	Mfg. Ring (Cone)
7	W	Condenser .02 Mf. 200 V.		43667	Output Trans.
8	8ABC	Condenser .02 Mf. 200 V.		26719	Ant. & Gnd. Terminal Assembly
9	G3	Condenser 500 Mmf. (.0005)	G1	W	Mask—Dial
10	G11	Condenser 175 Mmf. (.000175)	B	W	Dial Face
11	G2	Condenser 100 Mmf. (.0001)	W	W	Roller Drive
12	G2	Condenser 16 Mf. 250 V.	W	W	Bracket Dial Gls Support
13	G55	2 Sect. Var. Tuning Cond.	W	W	Ring—Retaining (Shalt)
14	W	Vol. Cont.—1 Meg.	W	W	Pointer
15	MG11	Spektry Switch Assembly	W	W	Spring—Cable Tension
16	B	Battery Cable, 5 Lead	W	W	Cable—Drive
17	23403	Resistor 150,000 Ohm 1/2 W.	W	W	"A"—Cable Marker
18	21237A	Resistor 60,000 Ohm 1/2 W.	W	W	"B"—Cable Marker
19	21875	Resistor 100,000 Ohm 1/2 W.	W	W	"B1"—Cable Marker
20	37472	Resistor 50,000 Ohm 1/2 W.	W	W	"B1135"—Cable Marker
21	25785	Resistor 3 Megohm 1/2 W.	W	W	Knob
22	26577	Resistor 40 Ohm 1/2 W. Flex.			
23	28106	Resistor 50 Ohm 1/2 W. Flex.			
24	22514	Resistor 750 Ohm 1/2 W. Flex.			
25	30960	Resistor 2600 Ohm 1/2 W. Flex.			
26	41955A	File, Reg. Resistor 1.83 Ohm Tap.			
27	W	1.1 Ohm			

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MODEL 557
Schematic
Socket

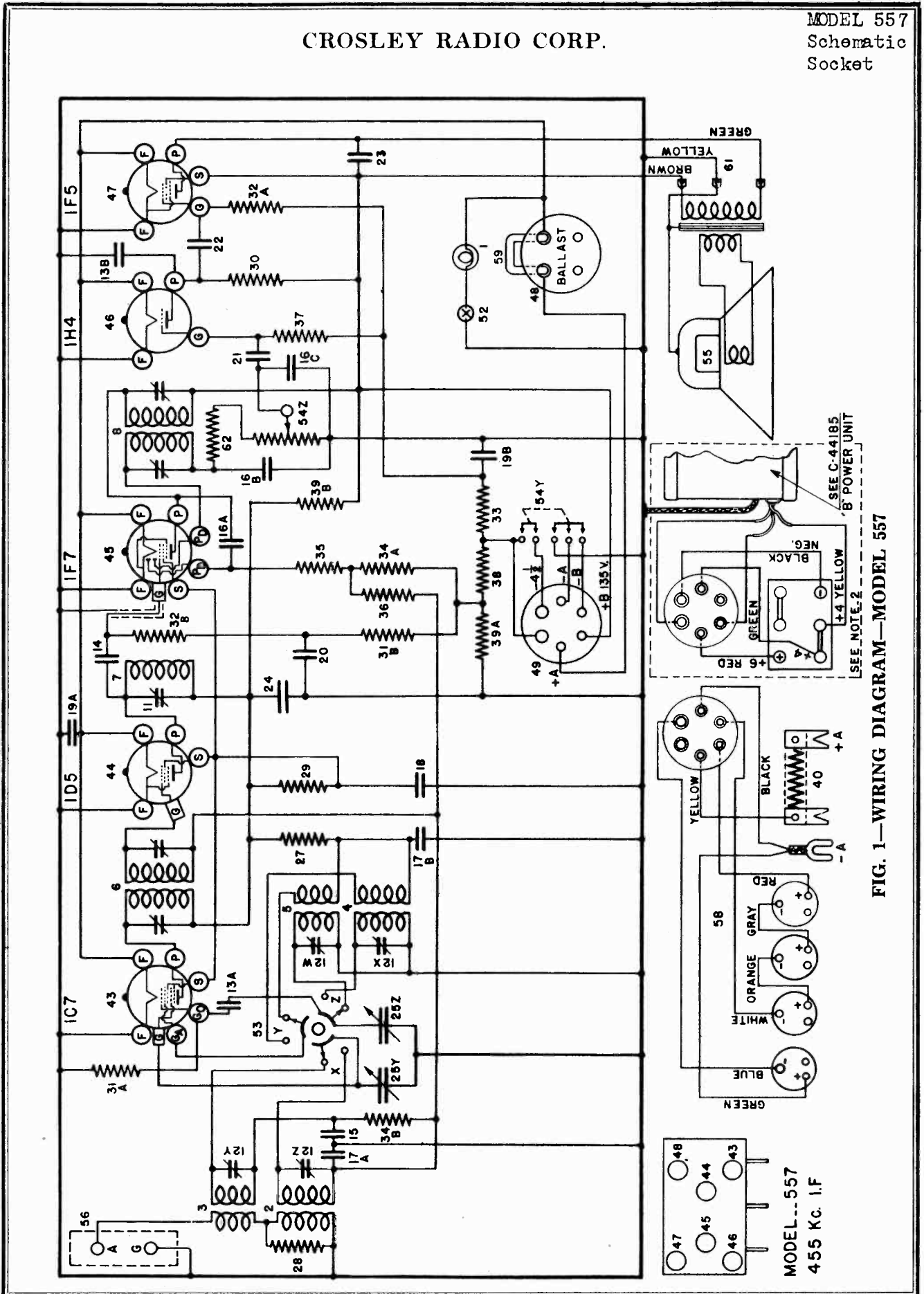


FIG. 1—WIRING DIAGRAM—MODEL 557

MODEL 557
Alignment
Voltage, Data

CROSLLEY RADIO CORP.

CHASSIS MODEL 557

JULY, 1937

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1F5G output tube. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning The I-F Amplifier To 455 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 1C7G oscillator-modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground (G) terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control to the right (ON).
- (c) Turn the band selector switch to the left (Broadcast Band).
- (d) Set the signal generator to 455 kilocycles.
- (e) Adjust both trimmers located on top of the 3rd I-F assembly for maximum output. (See Fig. 2 item 8).
- (f) Adjust the 2nd I-F trimmer condenser, Fig. 2 item 11, for maximum output.
- (g) Adjust both trimmers located on top of the 1st I-F assembly, item 6, for maximum output.
- (h) Check operations (e), (f) and (g) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(C) SIGNAL INPUT FREQUENCIES

American Broadcast Band	Minimum Capacity Signal
High Frequency Band	1725 Kilocycles
	15500 Kilocycles

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Go	Ga
1C7G	Oscillator-Modulator	2.0	120	54	Neg	84
1D5G	1st I-F Amplifier	2.0	120	54		
1F7G	2nd I-F Amplifier	2.0	135	54		
1H4G	AVC and Detector	2.0	72			
1F5G	1st A-F Amplifier	2.0	130	135		
	Output					

Power output approximately .5 watt.
"A" battery drain approximately .42 ampere—less dial light current.
"B" battery drain approximately .24 mls.
Power Supply Unit drain approximately 1.15 amperes at 4 volts.

This model Crosley Radio is a five-tube, 2-band superheterodyne receiver. It is primarily designed for operation from a 2-volt "A" battery. However, it may be used with a 3-volt "A" battery if a Crosley W-44118 ballast tube is used in the socket provided, or it may be operated from a six-volt storage battery in conjunction with the Crosley Model 117 power supply unit. No "B" or "C" batteries are required if the six-volt battery and power supply unit are used.

The frequency ranges covered are from 540 to 1725 kilocycles in the American Broadcast Band and from 3800 to 15000 kilocycles in the High Frequency or Foreign Band.

Circuit Description

Five octal base glass tubes are employed in a superheterodyne circuit which consists of a combination oscillator-modulator tube, two stages of I-F amplification—the second transformer of which is single tuned, and two stages of audio amplification. The 1F7G tube serves as the 2nd I-F amplifier and detector and supplies delayed AVC voltage to the 1C7G and 1D5G tubes. The two flexible resistors, items 38 and 39A, supply bias voltage to the 1C7G, 1D5G and 1F7G tubes and also serve to reduce the "C" battery drain in proportion to the drop in "B" voltage caused by usage.

Battery Connections

If the receiver is to be operated from individual "A", "B" and "C" batteries, the "A" battery may be an air cell type, a two-volt storage battery or a three-volt dry "A" battery. Three plug-in type 45-volt "B" batteries and one plug-in type 4½-volt "C" battery are required.

CAUTION: Do not connect or disconnect batteries or insert or remove ballast tube with the "ON-OFF" switch in the "ON" position.

Fig. 2 shows the proper method of connecting the battery cable to the batteries. The YELLOW lead should be connected to the positive (+) terminal and

the BLACK lead to the negative (-) terminal of the "A" battery. The resistor supplied on the YELLOW lead is to be used only if the "A" battery is an air cell type. The plug having two small pins and one large pin should be inserted in the 4½-volt "C" battery and the three plugs having three small pins are to be inserted in the "B" batteries.

If a three-volt battery is to be used, a Crosley W-44118 ballast tube should be used in the ballast tube socket on the receiver chassis. It will be necessary to pry the connector out of the ballast tube socket before the tube can be inserted. THE AIR CELL RESISTOR SHOULD NOT BE USED with three-volt "A" battery and ballast tube, nor with a two-volt storage battery.

Six-Volt Power Supply Unit

The Crosley Model 117 Power Supply Unit, Fig. 4, is designed to permit the Model 557 receiver to operate from a six-volt storage battery without the use of "B" and "C" batteries. It cannot be used with any other type 2-volt receiver without redesigning the receiver.

Dial Light

If it becomes necessary to replace the dial light bulb, use only part No. W-37188 which is rated at 6/100 ampere. Dial lights which use more current than this will reduce the life of the "A" battery.

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the negative side of the "A" battery circuit. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and the volume control full on and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter (approximately 0.10 volts). Voltage limits may vary plus or minus 10% of values given.

Aligning The R-F Amplifier.
When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (c) is heard (it is not necessary that the receiver tune through this signal).
(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

NOTE: When shunt aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

Shunt Alignment Signal	1400 Kilocycles
Minimum Capacity Signal	15500 Kilocycles

MODEL 117 S.P.U.
Layout, Connections

CROSLY RADIO CORP.

MODEL 557
Socket, Trimmers
Layout

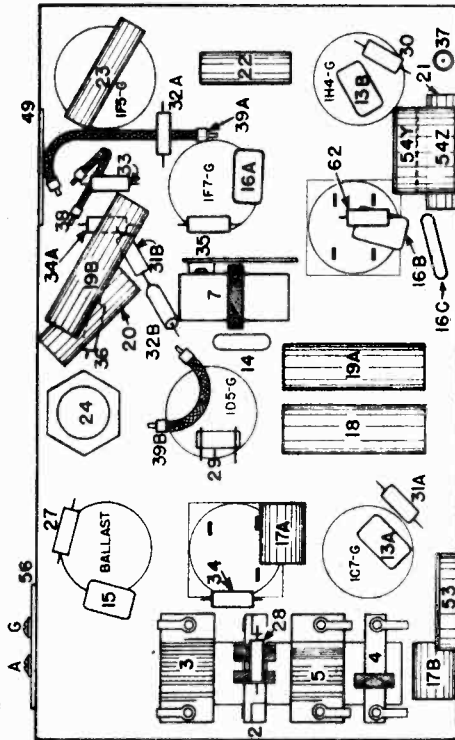


Fig. 3 Bottom View Model 557

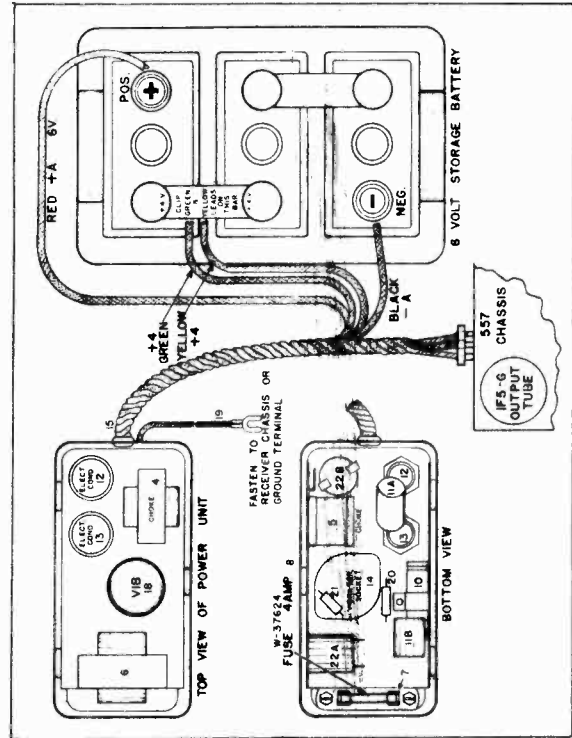


Fig. 4 Model 117 Six Volt Power Supply

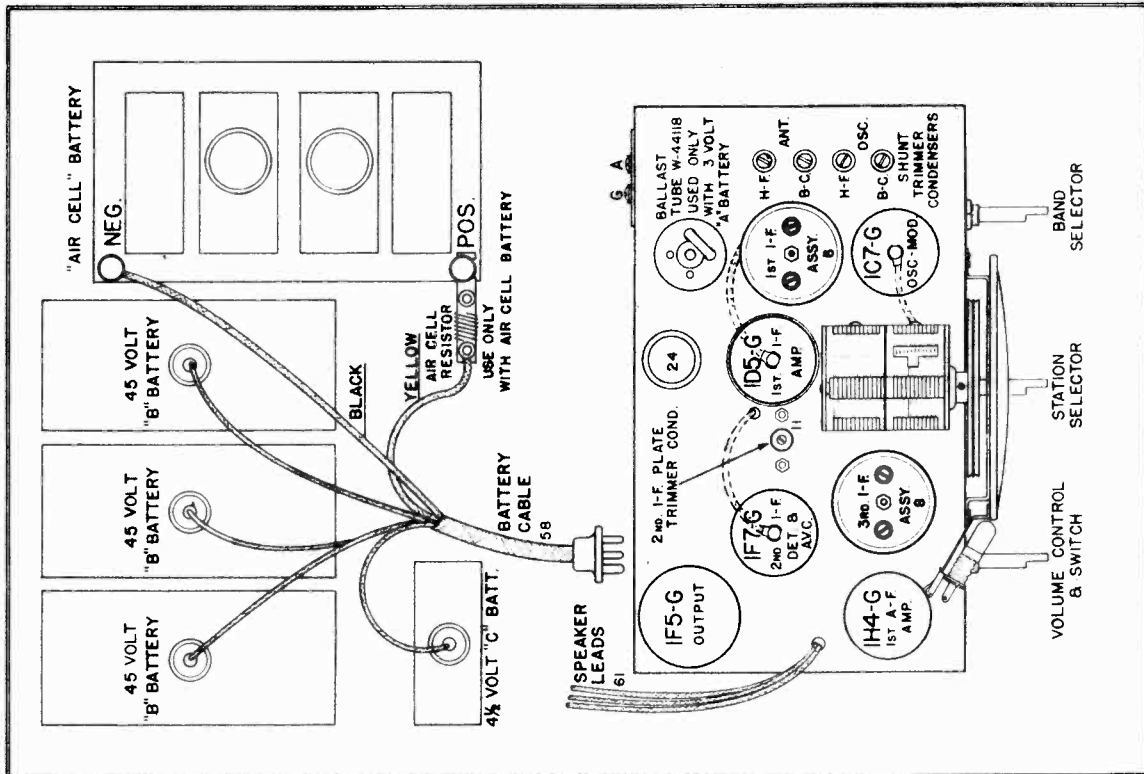


Fig. 2 Top View Model 557

MODEL 557

Parts

MODEL 117 S.P.U.

Schematic

CROSLEY RADIO CORP.

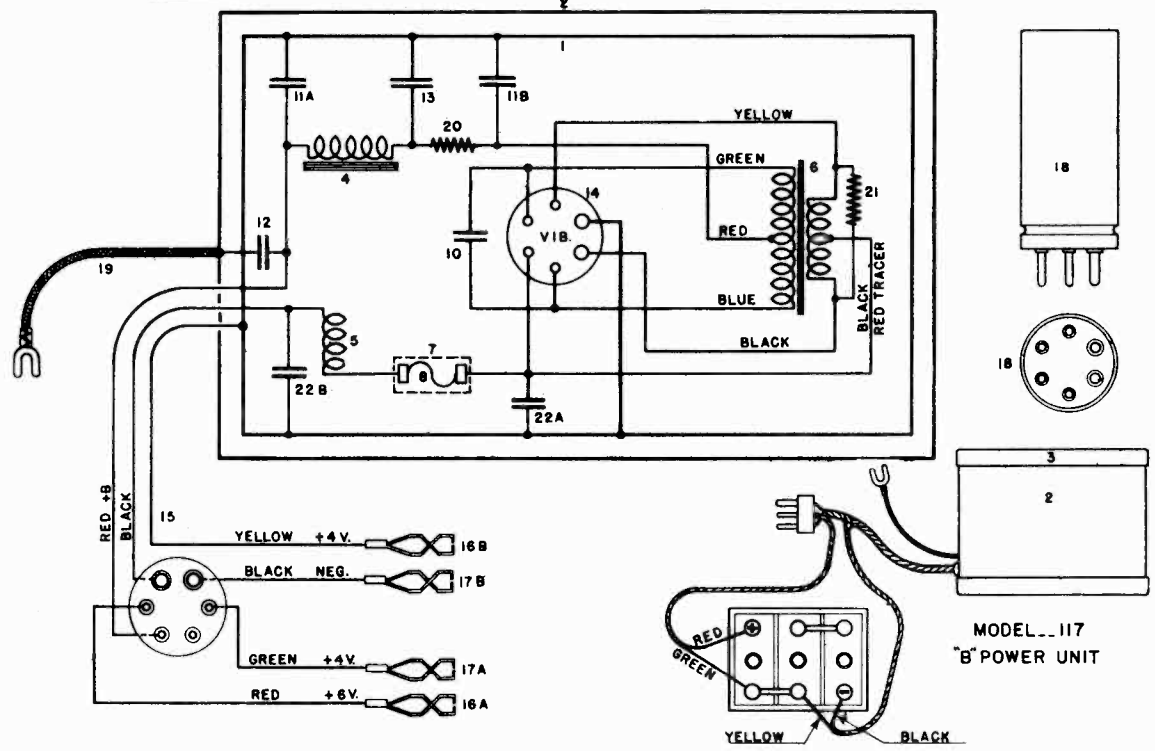
PARTS LIST—MODEL 557

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-37188	Dial Light Bulb, 2 V. .06 Amp.	52	MG12-44140	Dial Light Switch and Brkt. Assy.
2	G6-27134	Light Brkt. Assy.	53	W-43448A	Band Selector Switch
3	G132-32000	Ant. Coil, B. C.	54Z	W-43854A	Volume Control (1 Meg.)
4	G132-32000	Ant. Coil, H. F.	54Y	31P13 "A"	Batt. Switch
5	G132-32002	Osc. Coil, H. F.	55	31P13 "A"	Speaker, Spec. No. R-6000, C8 and V. C. and Cone Assy. for 31P13 "A"
6	G191-32004	1st I.F. Assy., 455 Kc.			Output Trans. for 31P13 "A" Spkr.
7	G191-32004	2nd I.F. Assy., 455 Kc.			Cone Mounting Ring for 31P13 "A" Spkr.
8	G180-32004	3rd I.F. Assy., 455 Kc.			Speaker, Spec. No. R-8000, B2, B"
9	NONE	NONE			V. C. and Cone Assy. for 41P13 "A"
10	W-44142A	2nd I.F. Trimmer Condenser			Spkr.
11	W-41247A	4 Section Trimmer Condenser			Spkr. Mounting Ring for 41P13 "A"
12	G1-34002	Condenser, .00025 Mf. Molded			Spkr.
13AB	G3-34002	Condenser, .0005 Mf. Molded			Output Trans. for 41P13 "A" Spkr.
14	G3-34002	Condenser, .0005 Mf. Molded			Ant. and Gnd. Terminal Assy.
15	G2-34002	Condenser, .0001 Mf. Molded			Spkr.
16ABC	W-38541	Condenser, .02 Mf. 250 V.	56	G1	Spkr.
17AB	W-37723	Condenser, .02 Mf. 160 V.	57		Ant. and Gnd. Terminal Assy.
18	W-24048C	Condenser, .02 Mf. 200 V.	58	C	Battery Cable
19AB	W-29621	Condenser, .02 Mf. 200 V.	59	W	Battery Cable
20	W-27216	Condenser, .02 Mf. 200 V.	60	W	Ballast Tube
21	W-25435	Condenser, .03 Mf. 400 V.	61	W	Speaker Cable
22	W-44012	Condenser, 16 Mf. 250 V.	62	W	Resistor, 200,000 Ohm 1/4 W.
23	W-33001	2 Section Var. Tun. Cond.			Cabinet—Table
24	W-44414B	Glass Dial Face			Cabinet—Console
25	W-44285	Dial Mask (Paper)			Knob—Lower—Dial Light Switch
	W-44287	Dial Mask (Metal Disc)			Knob—Upper—Station Selector
	W-4401A	Dial Support Ring			Knob—V. C. and Band Switch
	W-4350A	Dial Pulley			Rubber Mtg. Foot
	W-43560	Dial Pulley			Station on 7D Cab.
	W-44130	Drive Shaft			Grille—for 7D Cab.
	W-43561	Cable Tension Spring			Grille—for 7MA Cab.
	W-41582	Drive Cable—17 1/2 Inches			
	W-40486	Pointer Mounting Screw			
26	W-36317	Resistor, 10,000 Ohm 1/4 W.			
27	W-36760	Resistor, 20,000 Ohm 1/4 W.			
28	W-33590	Resistor, 30,000 Ohm 1/4 W.			
29	W-36761	Resistor, 40,000 Ohm 1/4 W.			
30	W-36318	Resistor, 50,000 Ohm 1/4 W.			
31AB	W-35216	Resistor, 75,000 Ohm 1/4 W.			
32AB	W-35600	Resistor, 100,000 Ohm 1/4 W.			
33	W-35601	Resistor, 100,000 Ohm 1/4 W.			
34AB	W-36322	Resistor, 300,000 Ohm 1/4 W.			
35	W-35602	Resistor, 500,000 Ohm 1/4 W.			
36	W-35927	Resistor, 1 Megohm 1/4 W.			
37	W-27503	Resistor, 2 Megohm 1/4 W. Flex.			
38	W-23013	Resistor, 4,000 Ohm 1/4 W. Flex.			
39AB	W-23500	Resistor, 2,000 Ohm 1/4 W. Flex.			
40	W-43900	Socket, Type 1C7			
43	W-43900	Socket, Type 1D5			
44	W-43900	Socket, Type 1E4			
45	W-43900	Socket, Type 1F5			
46	W-43900	Socket, Type 1F6			
47	W-28807	Tube Ballast			
48	W-40911	Tube Shield			
49	W-28807	Socket (Power Cable)			
50	W-44186	NONE			
51	W-44284	NONE			

Parts List For 117 Converter

1	C	44133	Chassis Pan
2	C	44138	Case Body
3	W	44132A	Cover
4	G76	24628	"B" Filter Choke
5	G23	25067	"A" Filter Choke
6	C16	32039	Power Transformer
7	C17	32039	Power Transformer
8	W	37624	Fuse Panel Assy.
9	W	31622A	NONE
10	W	31622A	Condenser, .01 Mf. 1,000 V.
11AB	W	35536	Condenser, .05 Mf. 200 V.
12	W	44131B	Condenser, 20 Mf. 150 V.
13	W	44217	Condenser, 16 Mf. 200 V.
14	C92	28807	Socket for Vibrator
15	C	44139	Cable and Plug
16AB	W	34903	Batt. Clip—Pos.
17AB	W	34904	Batt. Clip—Neg.
18	W	44145	Vibrator—A Volt
19	W	33403	Bracket for Vibrator
20	W	33403	Bracket for Vibrator
21	W	38915	Grommet
22	W	38977	Resistor, 100 Ohm 1/2 W.
23	W	50161	Resistor, 220 Ohm 1/2 W.
24	W	50161	Condenser, 5 Mf. 120 V.
25	W	44186	Cushion Strap
26	W	44284	End Plate 1 1/2" x 3/8" (2)



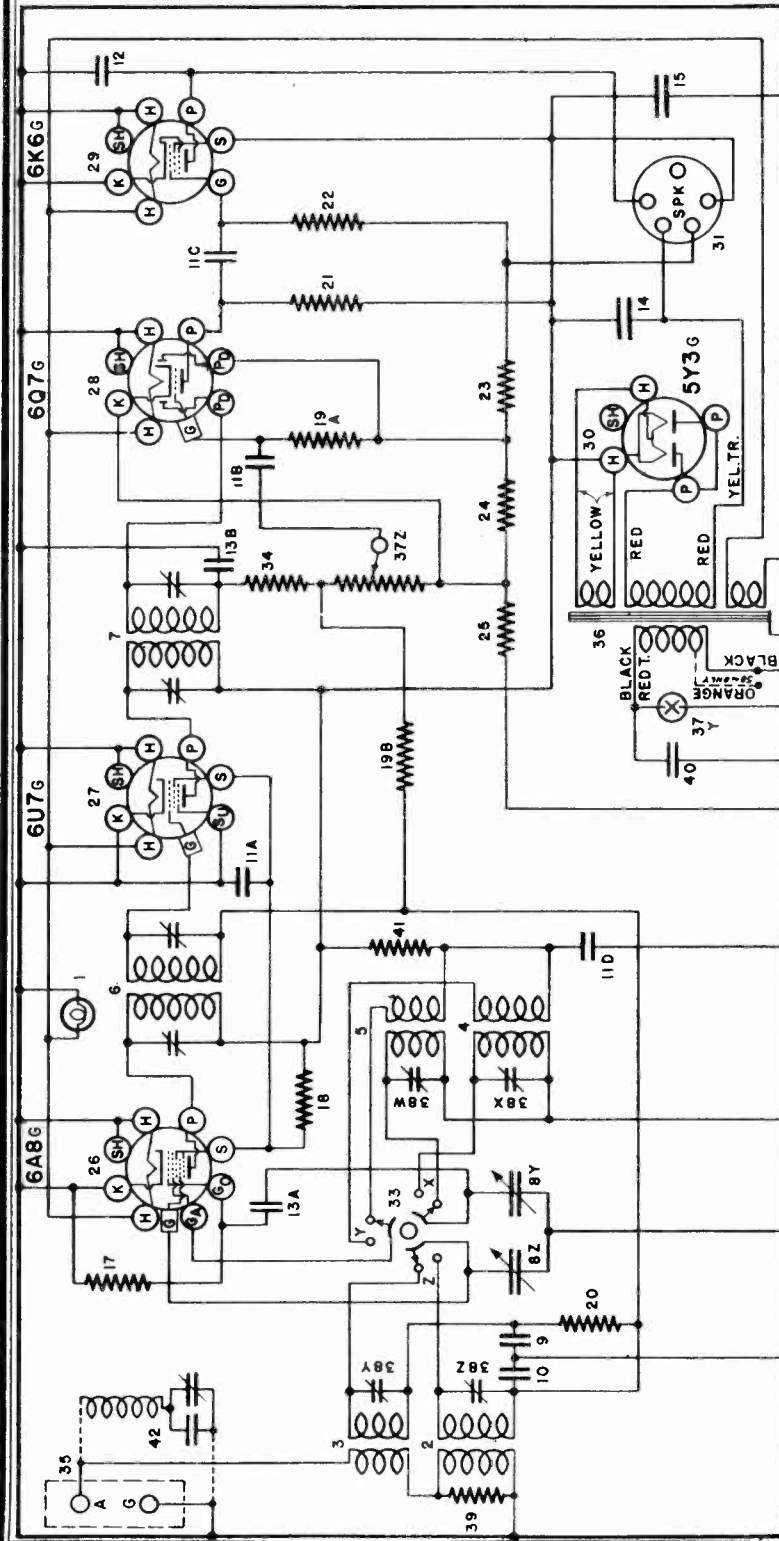
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TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Detector & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-5.0	—
5Y3G	Rectifier	5.0	—	—	225	—	—

Power output approximately 2 watts.
 Power consumption approximately 40 watts at 117.5 volts.
 Voltage drop across speaker field 35 volts.

MODEL 567
 Schematic, Voltage
 Socket, Data

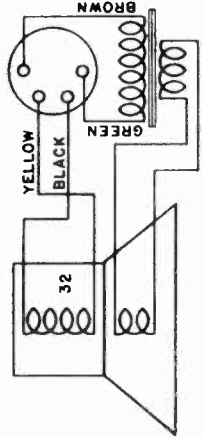


MODEL---567

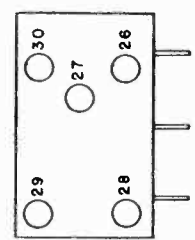
455 Kc. I.F. WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.



Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.



JULY, 1937

MODEL 567

Socket, Trimmers
Layout, Alignment

CROSLEY RADIO CORP.

- (b) Set the station selector so that the tuning condenser plates are completely out of mesh and turn the volume control knob to the right (ON).
- (c) Turn the band selector switch to the left (Broadcast Band).
- (d) Set the signal generator to 455 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. See Fig. 2.
- (f) Adjust both trimmers located on the top of the 1st I-F transformer for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

- (a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C), is heard. It is not necessary that the receiver tune through this signal.
- (b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE "OSC" TRIMMER.

NOTE 1: When shunt aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

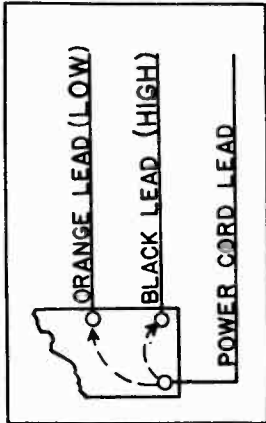
NOTE 2: If at any time the H-F coils are replaced, it may be necessary to vary the inductance of the "OSC" coil by moving the cross-over turn of wire at the gap to make the set track at the 6 megacycle end. Moving the turn toward the short end of the coil will decrease the inductance and moving it toward the long end will increase the inductance. If the signal is weak at 6 megacycles, a similar slight change in the inductance of the "ANT" coil should bring up the signal strength. THIS IS A CRITICAL OPERATION AND SHOULD NOT BE DONE ON ANY SET UNLESS CHANGING COILS MAKES IT NECESSARY.

Shunt Alignment
1400 Kilocycles
15000 Kilocycles

(C) SIGNAL INPUT FREQUENCIES
Minimum Capacity
1725 Kilocycles
15400 Kilocycles

50 CYCLE POWER TRANSFORMER ADJUSTMENT

Receivers equipped with a 50 cycle power transformer have a "high" and "low" voltage tap on the under side



of the chassis. The "high" voltage lead (BLACK) and the "low" voltage lead (ORANGE) are connected to a terminal strip near the transformer.

The voltage range of the "low" tap of the 95-130 volt transformer is from 95 to 112½ volts and of the "high" tap is from 112½ to 130 volts. The range of the "low" tap of the 190-260 volt transformer is from 190 to 225 volts and of the "high" tap is from 225 to 260 volts.

The accompanying illustration shows the connections for changing from high to low or low to high line voltage. Note the "jumper" wire which is attached to the terminal at which one side of the power cord is attached. The other end of this jumper wire should be connected to the ORANGE or BLACK lead of the transformer primary, according to the line voltage the receiver is to be used on.

NOTE: Any change made in the power supply circuit of the receiver should be plainly stamped or otherwise permanently recorded on the rear of the chassis.

CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6G output tube. Be certain that the meter is protected from d. c. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning I-F Amplifier To 455 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

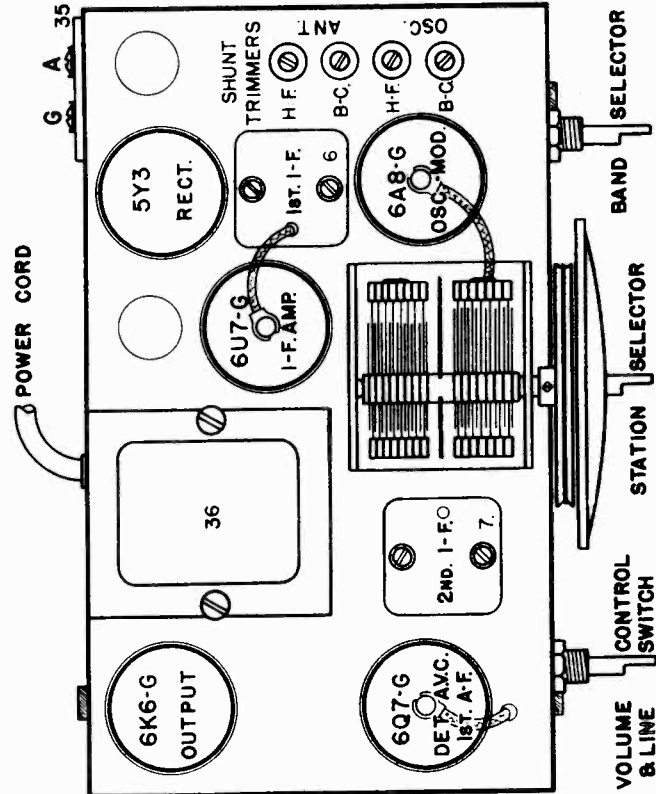


Fig. 2 Top View Model 567

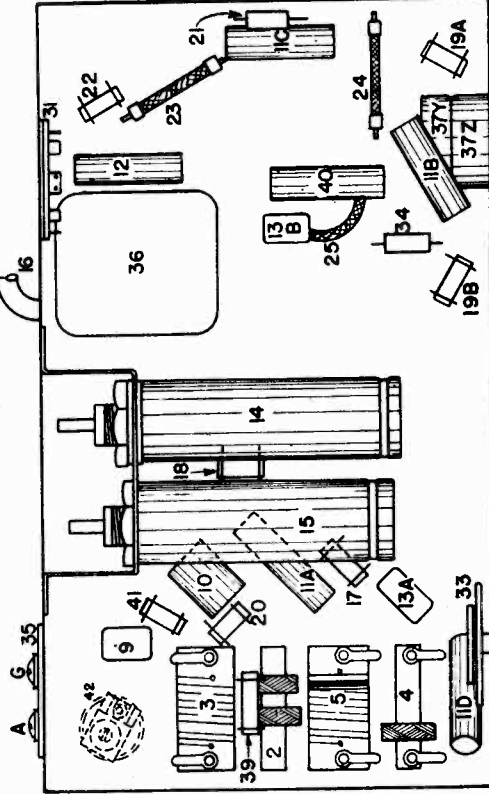


Fig. 3 Bottom View Model 567

CROSLY RADIO CORP.

MODEL 567
MODEL 577
Parts Lists

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43567	Dial Light, 6-8 V.	27	G171—36400	Socket, Type 6U7
	G2 —44252	Socket Assy. Dial Light	28	G160—36400	Socket, Type 6Q7
2	G132—32000	Ant. Coil, B. C.	29	G172—36400	Socket, Type 6K6
3	G133—32000	Ant. Coil, H-F.	30	G173—36400	Socket, Type 5Y3
4	G132—32002	Osc. Coil, B. C.	31	G103—28807	Socket Speaker
5	G133—32002	Osc. Coil, H-F.		W —40911	Tube Shield
6	G138—32004	1st I-F Assy.	32	257BP11"U"	Speaker, Spec. 5-B-5
7	G139—32004	2nd I-F Assy.		—44537	V. C. and Cone Assy.—257BP11"U"
	W —36139A	Dual I-F Trimmer		—44538	Output Trans.—257BP11"U"
8	G37 —33001	2 Section Gang Cond.		257BP11"B"	Speaker, Spec. 51-A-5
	B —44286C	Dial Face (Glass)		—42927	V. C. and Cone Assy.—257BP11"B"
	—44267	Dial Mask (Metal)		—41473	Output Trans.—257BP11"B"
	W —44285	Dial Mask (Paper)		—44681	Speaker Plug
	B —43544D	Support—Dial Glass	33	W —43448A	Band Switch
	W —43550A	Pointer	34	—35600	Resistor, 100,000 Ohm 1/4 W.
	W —40486	Screw—Pointer Mtg.	35	G1 —26719	Ant. and Gnd. Terminal Assy.
	W —44403	Ring—Dial Glass Support	36	—43479	Power Trans., 110 V. 60 Cy.
	G1 —43564	Pulley and Hub Assy.		—43569A	Power Trans., 110 V. 50 Cy.
	W —43542B	Bracket—Drive Shaft		—43570A	Power Trans., 220 V. 50 Cy.
	W —44134	Drive Shaft		—43480A	Power Trans., 110 V. 25 Cy.
	W —43549	Retaining Spring (Shaft)		—43481A	Power Trans., 220 V. 25 Cy.
	—41582	Drive Cord	37	—43449A	Vol. Cont. (1 Meg.) and Switch
	W —43561	Spring—Cord Tension	38	W —41247A	4 Section Shunt Trimmer Assy.
9	G12 —34002	Condenser, 500 Mmf. Molded	39	—22196	Resistor, 20,000 Ohm 1/4 W.
10	W —36541	Condenser, .02 Mf. 160 V.	40	W —30805	Condenser, .01 Mf. 400 V.
11A	W —28621	Condenser, .02 Mf. 200 V.	41	—30137	Resistor, 3,500 Ohm 1/4 W.
11B	W —28621	Condenser, .02 Mf. 200 V.		—7BB	Cabinet (Black Body)
11C	W —28621	Condenser, .02 Mf. 200 V.		—7BC	Cabinet (Brown Body)
11D	W —28621	Condenser, .02 Mf. 200 V.		—7BD	Cabinet (Wood Grain Body)
12	W —34647	Condenser, .006 Mf. 400 V.		—44106B	Cover (Used on 7BC and 7BD) Black
13A	G1 —34002	Condenser, 250 Mmf. Molded		W—44044A-FS1	Foot—Black
13B	G1 —34002	Condenser, 250 Mmf. Molded		—44045C	Cover (Used on 7BB) Red
14	W —44012	Condenser, 16 Mf. 250 V.		W—44044A-FS46	Foot—Red
15	W —44013	Condenser, 16 Mf. 200 V.		—44552	Knob (Black)
16	B —44004	Cord and Plug		—44268A	Escutcheon
17	—33390	Resistor, 30,000 Ohm 1/4 W.		W —44436	Felt Pad (Escutcheon) (4 Req.)
18	—24990	Resistor, 25,000 Ohm 1/4 W.		W —44015A	Chassis Support Brkt. (Upper)
19A	—26577	Resistor, 3 Megohm 1/4 W.		W —44016	Chassis Support Brkt. (Lower)
19B	—26577	Resistor, 3 Megohm 1/4 W.		W —44041A	Sound Baffle
20	—21455	Resistor, 300,000 Ohm 1/4 W.		MG44—44026	Grille Cloth Assy.—7BB
21	—35601	Resistor, 300,000 Ohm 1/4 W.		MG43—44026	Baffle Assy.—7BB
22	—23785	Resistor, 500,000 Ohm 1/4 W.		MG42—44026	Grille Cloth Assy.—7BC and 7BD
23	W —25937	Resistor, 275 Ohm 1/2 W.		MG41—44026	Baffle Assy.—7BC and 7BD
24	W —23012A	Resistor, 40 Ohm 1/2 W.	42	G164—32004	Wave Trap
25	W —25357	Resistor, 75 Ohm 3/4 W.			
26	G156—36400	Socket, Type 6A8			

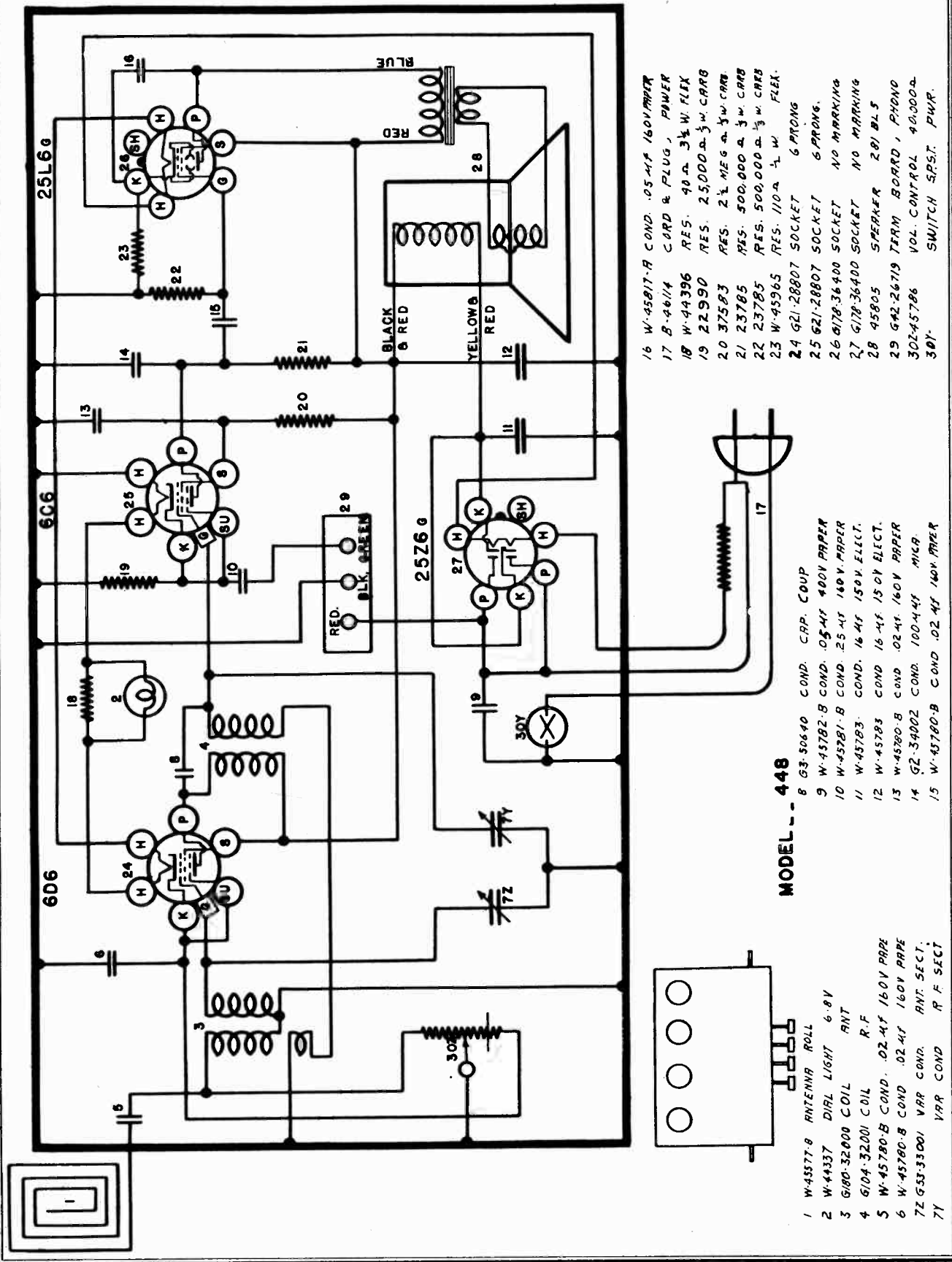
PARTS LIST—MODEL 567

Item	Part No.	Description	Item	Part No.	Description
1	W —31765B	Antenna Roll	21	—35928	Resistor 60,000 Ohm 1/4 W.
2	G 16—29535	"B" Filter Choke (Before Serial No. 1417951)	22	—21453	Resistor 40,000 Ohm 1/3 W.
3	G144—32000	Ant. Coil	23A	—21455	Resistor 300,000 Ohm 1/3 W.
4	G147—32002	Osc. Coil	23B	—21455	Resistor 300,000 Ohm 1/3 W.
5	G158—32004	1st I-F Assy.	24	—34883	Resistor 2 Megohm 1/3 W.
6	G159—32004	2nd I-F Coil Assy.	25	—21454	Resistor 1. Megohm 1/3 W.
7A	W —43280	Condenser 25 Mf. 150 V.	26	—33490	Resistor 10. Megohm 1/3 W.
7B	W —43280	Condenser 25 Mf. 150 V.	27A	—23785	Resistor 500,000 Ohm 1/3 W.
8A	G 1—34002	Condenser .00025 Mf. Molded	27B	—23785	Resistor 500,000 Ohm 1/3 W.
8B	G 1—34002	Condenser .00025 Mf. Molded			(After Serial No. 1417950)
9	G 3—34002	Condenser .0005 Mf. Molded	28	W —21964	Resistor 165 Ohm 1/2 W. Flex.
10A	W —28621	Condenser .02 Mf. 200 V.	29	W —44396	Resistor 40 Ohm 3/2 W. Flex.
10B	W —28621	Condenser .02 Mf. 200 V.	30	G156—36400	Socket Type 6A8
10C	W —28621	Condenser .02 Mf. 200 V.	31	G171—36400	Socket Type 6U7
11	W —32380	Condenser .05 Mf. 200 V.	32	G160—36400	Socket Type 6Q7
12	W —23615	Condenser .05 Mf. 400 V.	33	G161—36400	Socket Type 25A6
13	W —30323	Condenser .01 Mf. 200 V.	34	G162—36400	Socket Type 25Z6
14	W —34712	Condenser .25 Mf. 160 V.		W —40911	Tube Shield
15	W —35936	Condenser .05 Mf. 160 V.	35	—255BL6"Q"	Speaker Spe. No. 23393 (2000 Ohm Field) Used Before Serial No. 1417951.
16					
17	W —44142	2nd I-F Trimmer			
	W —28129	Spacer (Mtg. W-44142)		—43464	V. C. & Cone Assy. } Used
18	G 43—33001	2 Sect. Var. Tuning Cond.		—43465	Output Transformer } 255BL6
	B —44400C	Dial Face (Glass)		—43466	Cone Mtg. Ring } 273BL6
	B —44307A	Dial Glass Brkt.			'Q' Only
	W —44285	Dial Mask (Paper)		B —44374A	Baffle Board
	—44267	Dial Mask (Metal)		—273BL6"Q"	Speaker Spec. No. 26253 (525 Ohm Field) Used After Serial No. 1417950
	W —44001A	Dial Support Ring			
	W —44306	Drive Shaft Bracket			
	W —44918	Drive Shaft	36Z }	—43449	Vol. Control 1/2 Meg.
	W —43549	Ret. Ring (Shaft)	36Y }		On-Off Switch
	G 3—43564	Pulley & Hub Assy.	37	G169—32004	Wave Trap Assy.
	—41582	Drive Cord	38	G 5—34002	Condenser .00005 Mf. Molded
	W —43561	Drive Cord Spring		—7 DC	Cabinet
	W —43550A	Pointer		—44330	Grille Cloth
	W —40486	Screw FS20 Pointer Mtg.		—44268A	Escutcheon
19	B —44192	Power Cord & Plug		W —44381B	Knob
	B —30772B	Power Cord & Plug for adapting set to 220 V. Power Sup.		B —44373A	Cabinet Back
20	W —44337	Dial Light 6-8 V.			
	G 6—27134	Socket Assy. Dial L.			

PARTS LIST—MODEL 577

MODEL 448
Schematic
Parts

CROSLEY RADIO CORP.



- 16 W-45817-A COND. .05-MF 160V PAPER
- 17 B-461/4 CORD & PLUG, POWER
- 18 W-44396 RES. 40 Ω 3 1/2 W FLEX
- 19 22990 RES. 25,000 Ω 1/2 W CARB
- 20 37583 RES. 2 1/2 MEG Ω 1/2 W CARB
- 21 23785 RES. 500,000 Ω 1/2 W CARB
- 22 23785 RES. 500,000 Ω 1/2 W CARB
- 23 W-45965 RES. 110 Ω 1/2 W FLEX.
- 24 G21-28807 SOCKET 6 PRONG
- 25 G21-28807 SOCKET 6 PRONG.
- 26 G178-36400 SOCKET NO MARKING
- 27 G178-36400 SOCKET NO MARKING
- 28 45805 SPEAKER 28J BLS
- 29 G42-26719 TERM BOARD, PHONO
- 30Z-45786 VOL. CONTROL 40,000 Ω
- 30Y. SWITCH SPST. PWR.

MODEL 448

- 8 G3-50640 COND. CARB. COUP
- 9 W-45782-B COND. .05-MF 400V PAPER
- 10 W-45781-B COND. .25-MF 160V PAPER
- 11 W-45783 COND. 16-MF 150V ELECT.
- 12 W-45783 COND. 16-MF 150V ELECT.
- 13 W-45780-B COND. .02-MF 160V PAPER
- 14 G2-34002 COND. 100-4-MF MICR.
- 15 W-45780-B COND. .02-MF 160V PAPER

- 1 W-45577-B ANTENNA ROLL
- 2 W-44337 DIAL LIGHT 6-V
- 3 G180-32000 COIL ANT
- 4 G104-32001 COIL R.F
- 5 W-45780-B COND. .02-MF 160V PAPER
- 6 W-45780-B COND. .02-MF 160V PAPER
- 7Z G33-33001 VAR COND. ANT. SECT.
- 7Y VAR COND R.F. SECT

Voltage, Changes

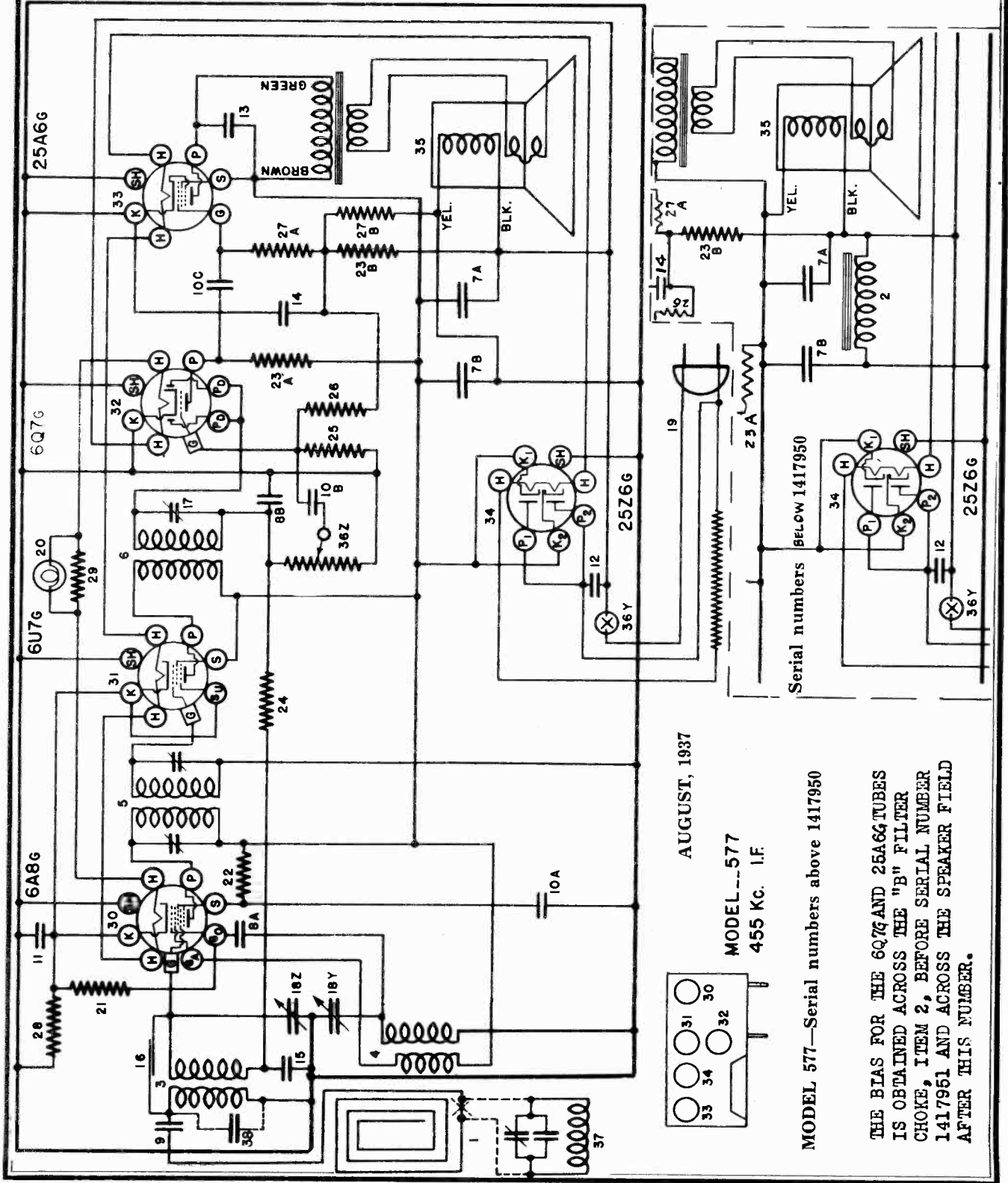
CROSLY RADIO CORP.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	105	60	—	3	-12	105
6U7G	I-F Amplifier	6.3	105	105	3	3	—	—
6Q7G	Det, AVC, A-F Amplifier	6.3	105	—	—	0	—	—
25A6G	Output	25.0	100	105	—	0	—	—
25Z6G	Rectifier	25.0	117.5	—	—	110	—	—

MODEL 577
Early, Late
Schematic, Socket

Power output approximately 1 watt.
Power consumption approximately 60 watts.
Voltage drop across speaker field 110 volts.
All voltages except filaments will be approximately 10% lower if measured on 117.5 volts DC power supply.



MODEL 577

Early, Late
Socket, Trimmers
Layout, Alignment

CROSLLEY RADIO CORP.

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25A6G output tube. Be certain that the meter is protected from DC by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning the I-F Amplifier to 455 Kilocycles.

(a) Disconnect the antenna roll from the receiver and connect the output of the signal generator through a 50 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, Item 17,

located at the rear of the chassis, for maximum reading on the output meter.

(e) Adjust the trimmer condensers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

Aligning the R-F Amplifier.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

Note: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

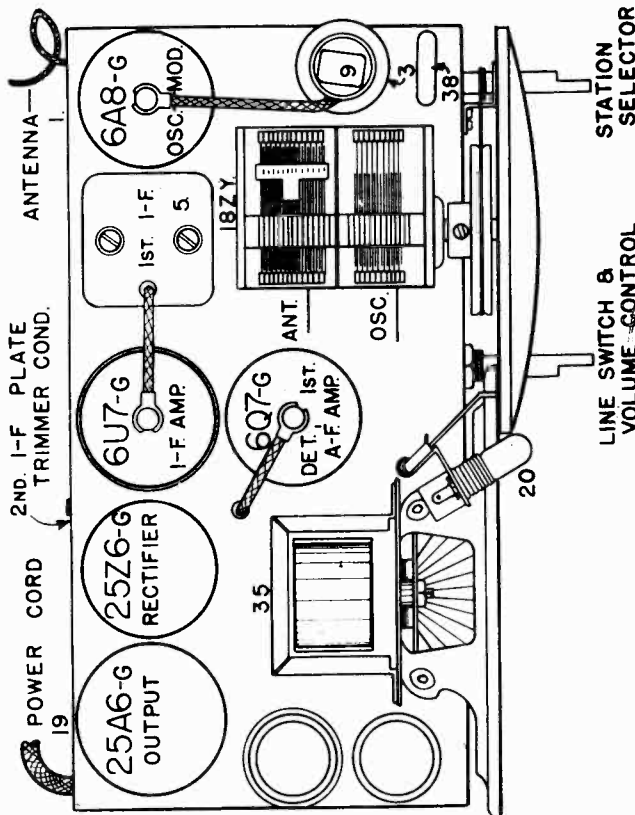


Fig. 2—Top View Model 577

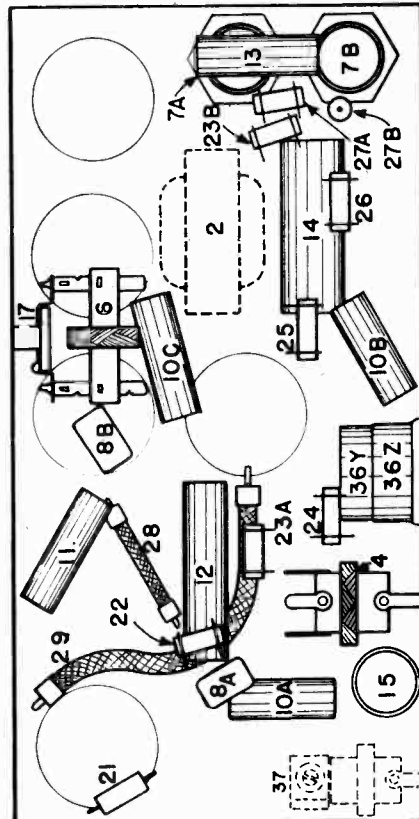
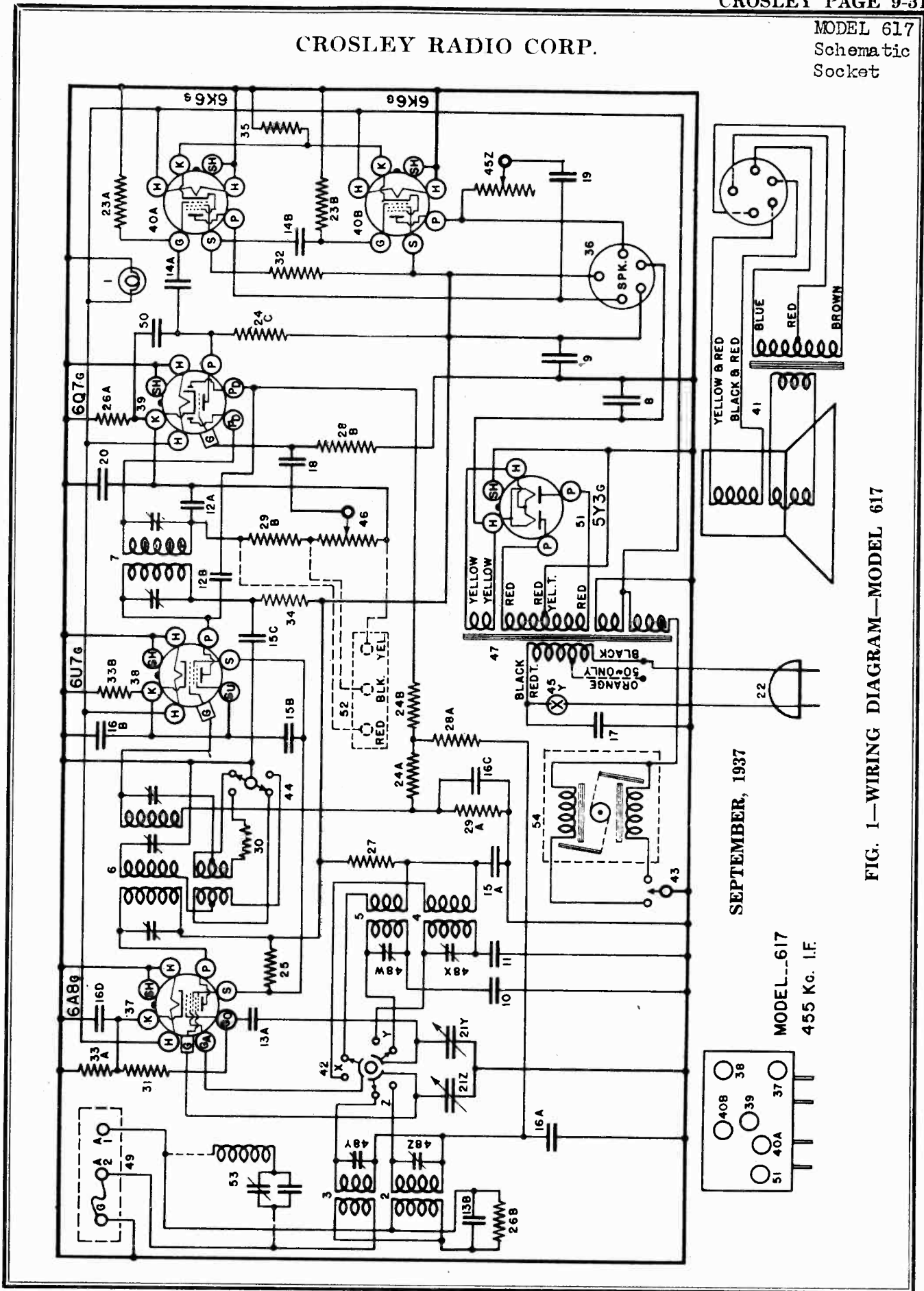


Fig. 3 Bottom View Model 577

CROSLY RADIO CORP.

MODEL 617
Schematic
Socket



SEPTEMBER, 1937

MODEL--617
455 Kc. I.F.

FIG. 1—WIRING DIAGRAM—MODEL 617

MODEL 617

Socket, Trimmers
Layout, Voltage

CROSLEY RADIO CORP.

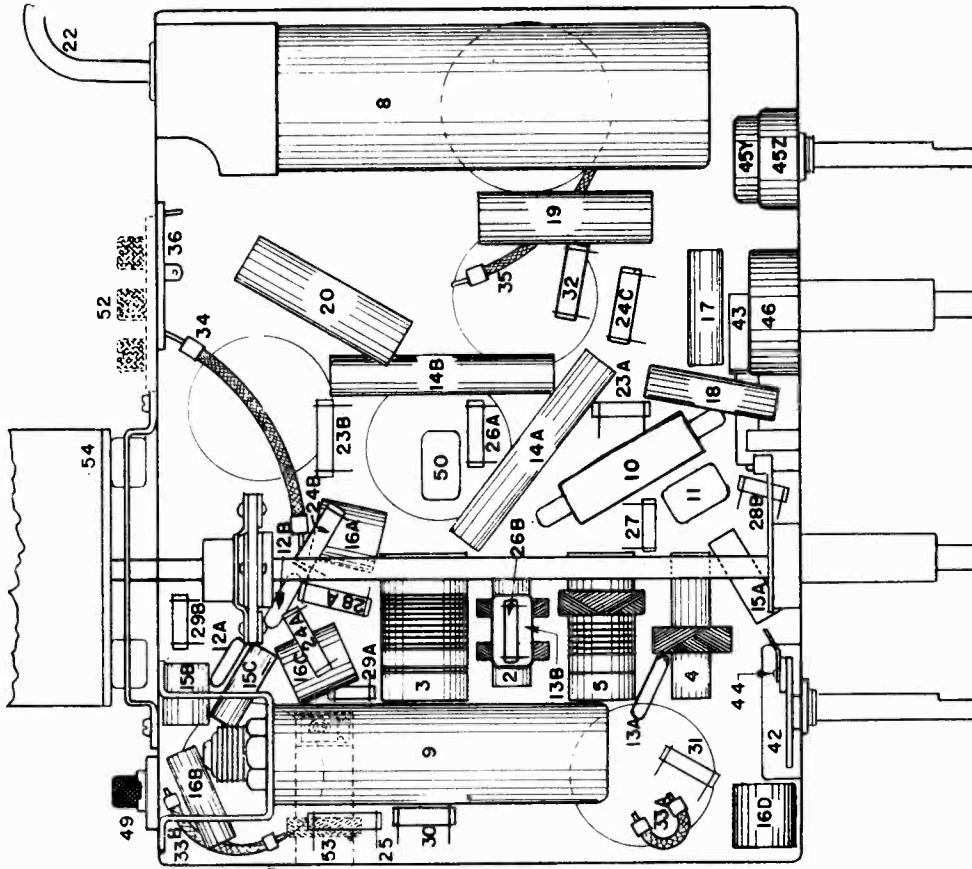


Fig. 3 Bottom View Model 617

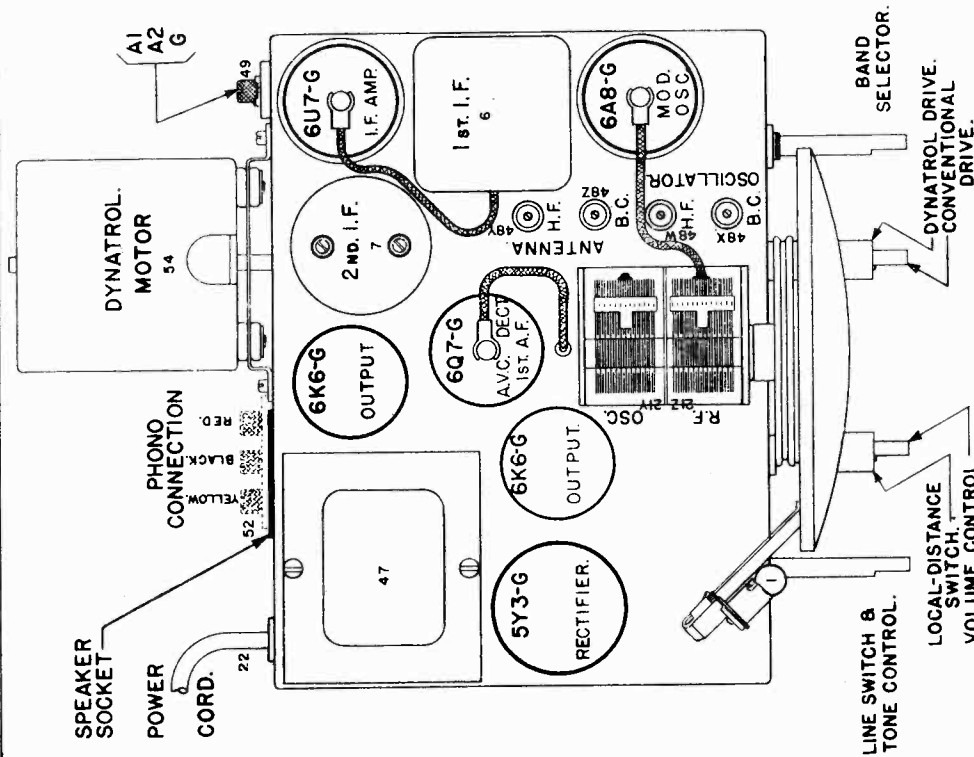


Fig. 2 Top View Model 617

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	220	100	3	-15	156
6U7G	I-F Amplifier	6.3	206	100	2.5	—	—
6Q7G	Det. AVC & Af Amp.	6.3	68	—	1.5	—	—
6K6G	(2) Output	6.3	216	214	18	—	—
5Y3G	Rectifier	5.0	—	—	280	—	—

Power output approximately 4.5 watts.
Power consumption approximately 55 watts at 117.5 volts.
Voltage drop across speaker field 60 volts.

CROSLEY RADIO CORP.

MODEL 617
Alignment, Tuner
Phono., Data

SPECIFICATIONS

This model Crosley radio is a 6-tube AC receiver designed for American and Foreign broadcast reception. Electric tuning is accomplished in this model by means of 535-1725 Kilocycles or 550-173 Metres or 32-163 Megacycles or 32-163 Metres

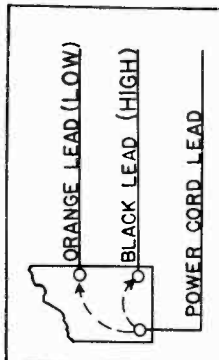
CIRCUIT DESCRIPTION

Six octal base glass tubes are employed in a super-heterodyne circuit which consists of a combination oscillator-modulator tube, 455 kilocycle I-F amplifier, push pull pentode output and power supply. The 6Q7G tube serves as the detector and 1st A-F amplifier and supplies AVC voltage to the grids of the 6A8G and 6U7G tubes. The speaker field is located in the negative leg of the power supply. Phase inversion is ob-

SPECIAL POWER TRANSFORMER

In localities where the voltage variation on 50 or 60 cycle power supply lines is greater than customary commercial limits, special 50-60 cycle power transformers are available. These transformers have a "high" and "low" voltage tap on the under side of the chassis. The "high" voltage lead (BLACK) and the "low" voltage lead (ORANGE) are connected to a terminal strip near the transformer.

The voltage range of the "low" tap of the 95-130 volt transformer is from 95 to 112½ volts and of the "high" tap is from 112½ to 130 volts. The range of the "low" tap of the 190-260 volt transformer is from 190 to 225 volts and of the "high" tap is from 225 to 260 volts. The accompanying illustration shows the connections



of the Dynatrol motor which is a vibrating type. Other features include automatic volume control, Local-Distance switch and push pull pentode output. The tuning range is divided into two bands as follows:

(American Broadcast Band)
(High Frequency or Foreign Band)

tained in the output circuit by the voltage developed across a 3000 ohm resistor, item 32.

SOCKET VOLTAGES

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500-volt D. C. voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A. C. voltmeter (approximately 0-10 volts). Readings may vary plus or minus 10% of values given.

for changing from high to low or low to high line voltage. Note the "jumper" wire which is attached to the terminal at which one side of the power cord is attached. The other end of this jumper wire should be connected to the ORANGE or BLACK lead of the transformer primary, according to the line voltage the receiver is to be used on.

NOTE: Any change made in the power supply circuit of the receiver should be plainly stamped or otherwise permanently recorded on the rear of the chassis.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits may be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to the plates of the two 6K6; output tubes. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning The I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. KEEP THE GENER-

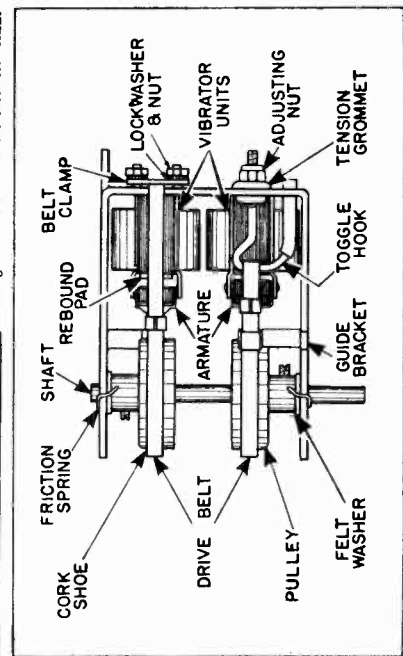


Fig. 5

ATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(a) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the tone control knob to the right (ON) and turn the band selector knob to the left (TREBLE).

(b) Turn the band selector switch to the Broadcast Band.

(c) Turn the Local-Distance switch to the "Distance" position.

(d) Turn the signal generator to 455 kilocycles.

(e) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output. DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8C TUBE.

(f) Transfer the signal generator lead to the top cap of the 6A8C tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer of the 1st I-F transformer. Do not force adjustment screw.

(h) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(i) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

(C) SIGNAL INPUT FREQUENCIES

American Broadcast Band
High Frequency Band
16,300 Kilocycles

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underside of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 53).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, lead a 455 kilocycle signal from the signal generator through a 200 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 200 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 250 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer to the MINIMUM CAPACITY SIGNAL (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

NOTE: When about aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

Shunt Alignment Signal
1,400 Kilocycles
18,000 Kilocycles

DYNATROL MOTOR

Should either vibrator unit of the Dynatrol motor need readjustment, the following procedure should be followed:

(a) Loosen the adjusting nut until the drive shaft can be rotated freely between the thumb and forefinger. The gap between the armature and "E" laminations should be approximately 3/16".

(b) With the motor running, tighten the adjusting nut until chatter stops. Care should be taken, however, not to tighten this adjustment too tight as an unstable condition will be reached wherein a slight change may result in a locked motor.

(c) Check the time required for the dial pointer to travel from each end of the dial to the other. The adjusting screws should be set so that approximately eight seconds are required in each direction.

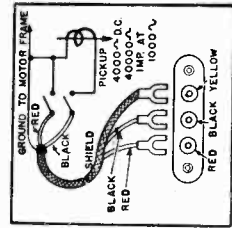


Fig. 4 Phonograph Pickup

MODEL 617

Parts

CROSLEY RADIO CORP.

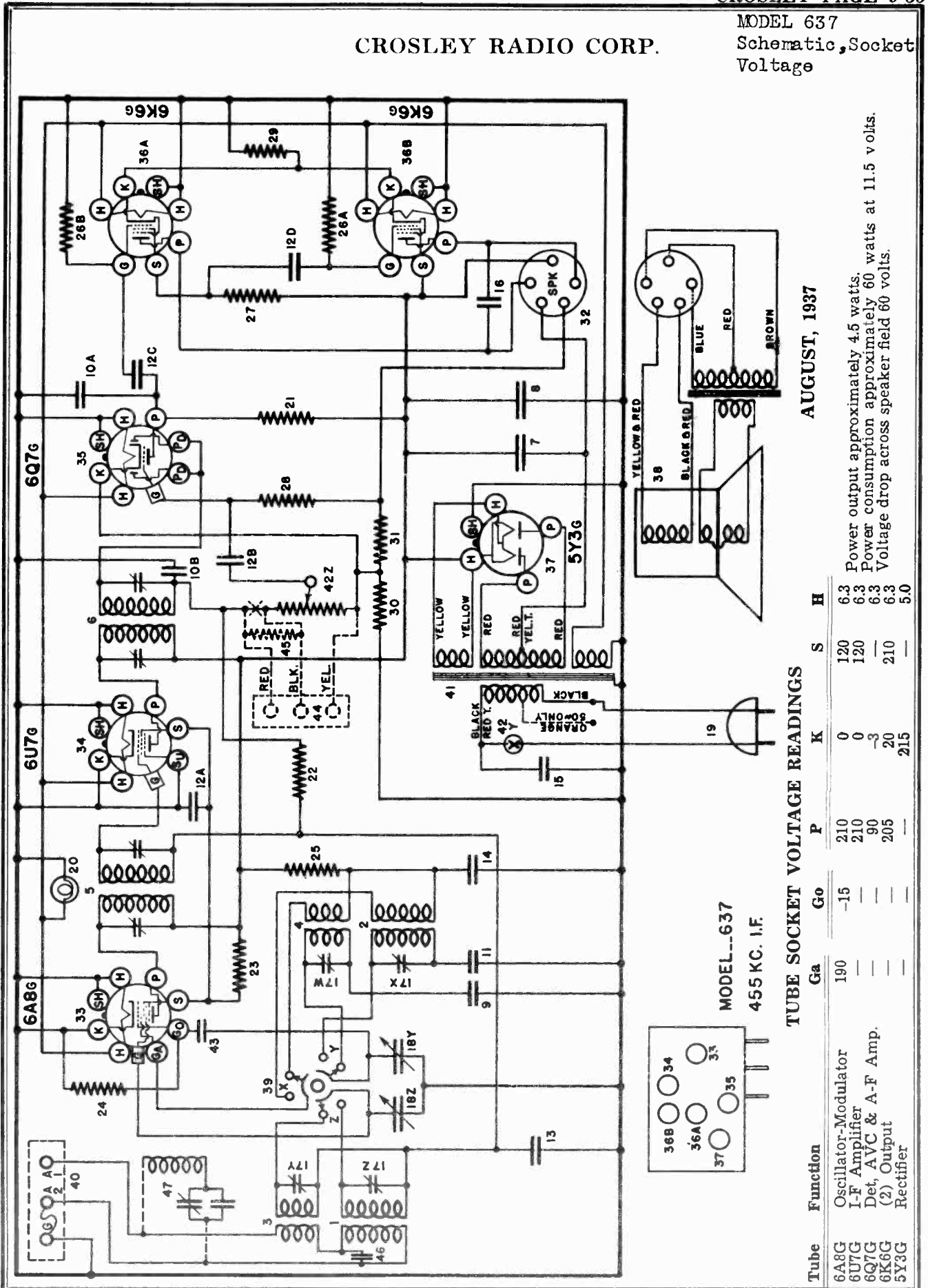
PARTS LIST—MODEL 617

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	W —43567	Dial Light Bulb	29B	—33474	Resistor 120,000 Ohm 1/3 W. Carb.
	G6 —44363	D. L. Socket Assy.	30	—42401B	Resistor 99 Ohm 1/4 W. Ins.
2	G148 —32000	Ant. Coil B-C.	31	—21237A	Resistor 60,000 Ohm 1/3 W. Carb.
3	G142 —32000	Ant. Coil H-F.	32	—44009	Resistor 3,000 Ohm 1/4 W. Ins.
4	G145 —32002	Osc. Coil B-C.	33A	W —25937	Resistor 275 Ohm 1/2 W. Flex.
5	G144 —32002	Osc. Coil H-F.	33B	W —25937	Resistor 275 Ohm 1/2 W. Flex.
6	G161 —32004	1st I-F Trans. 455 Kc.	34	W —23013	Resistor 2,000 Ohm 1 1/4 W. Flex.
7	G166 —32004	2nd I-F Trans. 455 Kc.	35	W —21965	Resistor 375 Ohm 1 W. Flex.
8	W —44438A	Condenser 40 Mf. 300 V.	36	G103 —28807	Socket Speaker
9	W —44012	Condenser 16 Mf. 250 V.	37	G156 —36400	Socket Type 6A8
10	G16 —34000	Condenser 3800 Mmf. H-F. Osc. Series	38	G171 —36400	Socket Type 6U7
11	G14 —34002	Condenser 400 Mmf. B-C. Osc. Series	39	G160 —36400	Socket Type 6Q7
12A	G2 —34002	Condenser .0001 Mf. Molded	40A	G172 —36400	Socket Type 6K6
12B	G2 —34002	Condenser .0001 Mf. Molded	40B	G172 —36400	Socket Type 6K6
13A	G13 —34002	Condenser .000035 Mf. Molded		W —40911	Tube Shield
13B	G13 —34002	Condenser .000035 Mf. Molded	41	—465BP15 "M"	Speaker M'fg. Spec. 1-D-1197 V. C. & Cone Assy.
14A	W —23142	Condenser .02 Mf. 400 V.		—45186	Field Coil (750 Ohm)
14B	W —23142	Condenser .02 Mf. 400 V.		—45187	Output Transformer
15A	W —28621	Condenser .02 Mf. 200 V.		—45188	Spk. Plug
15B	W —28621	Condenser .02 Mf. 200 V.	42	—44955	Band Selector Switch
15C	W —28621	Condenser .02 Mf. 200 V.	43	G2 —44476	Dynatrol Switch
16A	W —36541	Condenser .02 Mf. 160 V.		G5 —44470	Toggle Arm (Dynatrol Sw.)
16B	W —36541	Condenser .02 Mf. 160 V.	44	—44796	Local-Distance Switch
16C	W —36541	Condenser .02 Mf. 160 V.		G4 —44470	Toggle Arm & Clamp Assem
16D	W —36541	Condenser .02 Mf. 160 V.	45	—44024B	Tone Control & Line Switch
17	W —30805	Condenser .01 Mf. 400 V.	46	—44467	Volume Control (1 Meg.)
18	W —30323	Condenser .01 Mf. 200 V.	47	—44695	Power Trans. 110 V. 60 Cy.
19	W —23615	Condenser .05 Mf. 400 V.		—44697	Power Trans. 110 V. 50 Cy.
20	W —34712	Condenser .25 Mf. 160 V.		—44696	Power Trans. 110 V. 25 Cy.
21	G42 —33001	2 Section Var. Tuning Cond.		—44698	Power Trans. 220 V. 50 Cy.
	—44790	Dial Face (Glass)		—44694	Power Trans. 220 V. 25 Cy.
	W —44085B	Dial Mask	48	W —41247A	4 Sect. Shunt Trimmer Assy.
	W —44299	Dial Hand (Pointer)	49	G27 —26719	Ant.-Gnd. Terminal Assy.
	W —40486	Pointer Mtg. Screw	50	G3 —34002	Condenser .0005 Mf. Molded
	C —44687A	Support—Dial Glass	51	G173 —36400	Socket Type 5Y3
	W —44084A	Ring—Glass Support	52	G39 —26719	Phono. Terminal Assy.
	—41582	Drive Cord	53	G170 —32004	Wave Trap Assy.
	W —43561	Tension Spring	54	G3 —44416	Dynatrol Motor
	G1 —43564	Pulley & Hub Assy.		W —45218	Vibrator Drive Unit (Left or Right)
	MG19 —44575	Shaft & Coupling Assy.		W —44317A	Pulley (Dyn. Motor)
	W —44479A	Bracket—Drive Shaft		W —43622	Felt Washer
	W —44480A	Sleeve, Drive Shaft		W —44382	Friction Spring (Shaft)
22	B —44004	Line Cord & Plug		W —44319	Toggle Hook (Belt)
23A	—23785	Resistor 500,000 Ohm 1/3 W. Carb.		—7593	Tubing 3/8" (For Hook)
23B	—23785	Resistor 500,000 Ohm 1/3 W. Carb.		W —44701C	Grommet (Tension)
24A	—33344C	Resistor 400,000 Ohm 1/3 W. Carb.		W —24074	Adjusting Nut
24B	—33344C	Resistor 400,000 Ohm 1/3 W. Carb.		W —44384A	Rubber Pad (Rebound)
24C	—33344C	Resistor 400,000 Ohm 1/3 W. Carb.		W —44745	Clamp Plate (Belt)
25	—24990	Resistor 25,000 Ohm 1/3 W. Carb.		W —43552	Clamp Spk. Plug
26A	—24814	Resistor 7,000 Ohm 1/3 W. Carb.		—7N	Cabinet
26B	—24814	Resistor 7,000 Ohm 1/3 W. Carb.		W —44685A	Call Letter Clip
27	—21876	Resistor 10,000 Ohm 1/3 W. Carb.		W —44866	Call Letter Magn. Lens
28A	—26577	Resistor 3 Megohm 1/3 W. Carb.		—45264	Call Letter List
28B	—26577	Resistor 3 Megohm 1/3 W. Carb.		W —44431	Knob Local-Distance
29A	—33474	Resistor 120,000 Ohm 1/3 W. Carb.		—44387B	Knob Dynatrol Motor
				—44386	Knob Sta. Select.-Vol. Cont.
				W —44432	Knob Band Select.—T. C. & Line Switch
				B —44869A	Escutcheon
				C —44972A	Cabinet Back
				—44819	Grille Cloth

CROSLY RADIO CORP.

MODEL 637
Schematic, Socket
Voltage



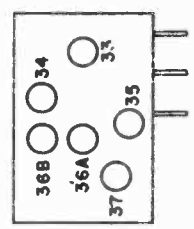
AUGUST, 1937

TUBE SOCKET VOLTAGE READINGS

Tube	Function	Ga	Go	P	K	S	H
6A8G	Oscillator-Modulator	190	-15	210	0	120	6.3
6U7G	I-F Amplifier	---	---	210	0	120	6.3
6Q7G	Det. AVC & A-F Amp.	---	---	90	-3	---	6.3
6K6G	(2) Output	---	---	205	20	210	6.3
5Y3G	Rectifier	---	---	---	215	---	5.0

Power output approximately 4.5 watts.
Power consumption approximately 60 watts at 11.5 volts.
Voltage drop across speaker field 60 volts.

MODEL-637
455 KC. I.F.



MODEL 637

Alignment, Phono.
Data

CROSLEY RADIO CORP.

Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 100 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL \uparrow (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output.

Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

NOTE: When shunt aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

(C) SIGNAL INPUT FREQUENCIES

	Minimum Capacity Signal	Shunt Alignment Signal
American Broadcast Band	1,725 Kilocycles	1,400 Kilocycles
High Frequency Band	18,300 Kilocycles	18,000 Kilocycles

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 47).

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 100 mmf. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang con-

denser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

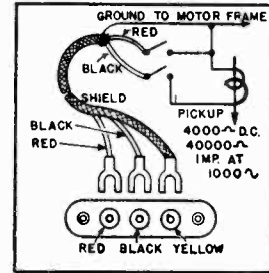


Fig. 4 Phonograph Pickup

signed for American and Foreign broadcast reception. The tuning range is divided into two bands as follows: (American Broadcast Band) (High Frequency or Foreign Band)

29. Items 30 and 31 are located between the speaker field and ground. Phase inversion is obtained in the output circuit by the voltage developed across a 3000 ohm resistor, item 27.

SOCKET VOLTAGES

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500-volt D. C. voltmeter. (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A. C. voltmeter (approximately 0-10 volts). Readings may vary plus or minus 10% of values given.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits may be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to the plates of the two 6K6G Output tubes. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning I-F Amplifier to 455 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8C tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- (c) Turn the band selector switch to the Broadcast Band.
- (d) Set the signal generator to 455 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 6, Fig. 2).
- (f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 5, Fig. 2).
- (g) Check operations (e) and (f) for more accurate adjustment.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

SPECIFICATIONS
This model Crosley radio is a 6-tube AC receiver designed for 535-1725 Kilocycles or 550-173 Metres (High Frequency or Foreign Band) or 5.8-18.3 Megacycles or 52-16.3 Metres

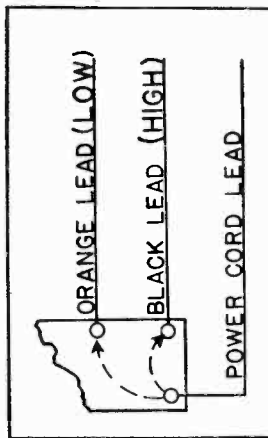
Circuit Description.

Six octal base glass tubes are employed in a super-heterodyne circuit which consists of a combination oscillator-modulator tube, 455 kilocycle I-F amplifier, push pull pentode output and power supply. The 6Q7G tube serves as the detector and 1st A-F amplifier and supplies AVC voltage to the grids of the 6A8C and 6U7G tubes. The speaker field is located in the negative leg of the power supply. The bias voltage for the 6A8C and 6U7G tubes is obtained across a 40 ohm resistor, item 30, the bias for the 6Q7G tube is obtained across a 32 ohm resistor, item 31, and the bias for the output tubes is obtained across a 375 ohm resistor, item

50 CYCLE POWER TRANSFORMER ADJUSTMENT

Receivers equipped with a 50 cycle power transformer have a "high" and "low" voltage tap on the under side of the chassis. The "high" voltage lead (BLACK) and the "low" voltage lead (ORANGE) are connected to a terminal strip near the transformer.

The voltage range of the "low" tap of the 95-130 volt transformer is from 95 to 112½ volts and of the "high" tap is from 112½ to 130 volts. The range of the "low"



tap of the 190-260 volt transformer is from 190 to 225 volts and of the "high" tap is from 225 to 260 volts.

The accompanying illustration shows the connections for changing from high to low or low to high line voltage. Note the "jumper" wire which is attached to the terminal at which one side of the power cord is attached. The other end of this jumper wire should be connected to the ORANGE or BLACK lead of the transformer primary, according to the line voltage the receiver is to be used on.

NOTE: Any change made in the power supply circuit of the receiver should be plainly stamped or otherwise permanently recorded on the rear of the chassis.

CROSLEY RADIO CORP.

MODEL 637
Socket, Trimmers
Layout, Parts

PARTS LIST—MODEL 637

Figures in first column refer to parts in Diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G143—32000	Ant. Coil, E-C.	25	—30137	Resistor, 3,500 Ohm 1/2 W. Carbon
2	G145—32002	Osc. Coil, E-C.	26A	—33344	Resistor, 400,000 Ohm 1/2 W. Carbon
3	G142—32000	Ant. Coil, H-F.	26B	—33344	Resistor, 400,000 Ohm 1/2 W. Carbon
4	G144—32002	Osc. Coil, H-F.	27	—44009	Resistor, 3,000 Ohm 1/2 W. Ins.
5	G156—32004	1st I-F. Assy.	28	—34883	Resistor, 2 Megohm 1/2 W. Carbon
6	G157—32004	2nd I-F. Assy.	29	—43462	Resistor, 375 Ohm 2 1/2 W. Flex.
7	W —36057B	Condenser, 40 Mf. 300 V.	30	W —23012A	Resistor, 40 Ohm 1/2 W. Flex.
8	W —41081	Condenser, 16 Mf. 250 V.	31	W —37631	Resistor, 32 Ohm 1/2 W. Flex.
9	G16 —34000	Condenser, 3,800 Mmf. (H-F. Osc. Series)	32	G103—28807	Socket—Speaker
10A	G1 —34002	Condenser, .00025 Mf. Molded	33	G156—36400	Socket, Type 6A8
10B	G1 —34002	Condenser, .00025 Mf. Molded	34	G171—36400	Socket, Type 6U7
11	G14 —34002	Condenser, .0004 Mf. (B-C. Osc. Series)	35	G160—36400	Socket, Type 6Q7
12A	W —28621	Condenser, .02 Mf. 200 V.	36AB	G172—36400	Socket, Type 6K6
12B	W —28621	Condenser, .02 Mf. 200 V.	37	G173—36400	Socket, Type 5Y3
12C	W —28621	Condenser, .02 Mf. 200 V.	W —40911	Tube Shield	
12D	W —28621	Condenser, .02 Mf. 200 V.	W —43552	Spk. Plug Clamp	
13	W —36541	Condenser, .02 Mf. 160 V.	38	365BP12" M"	Speaker—Spec. 1-D-1089
14	W —23615	Condenser, .05 Mf. 400 V.	—44542	—44273	V. C. and Cone Assy. Used on Field Coil
15	W —30805	Condenser, .01 Mf. 400 V.	—44274	—43672	Output Trans. 365BP12" M" Cardboard Ring Spk.
16	W —28619	Condenser, .006 Mf. 200 V.	39	W —33448A	Band Switch
17	W —41274A	4 Sect. Shunt Trimmer Assy.	40	G27 —26719	Ant. and Gnd. Terminal
18	G42 —33001	2 Sect. Gang, Cond.	41	—44356	Pwr. Trans., 60 Cy.—110 V.
	—44343D	Dial Face (Glass)		—44359	Pwr. Trans., 50 Cy.—220 V.
	—44085B	Dial Mask		—44357	Pwr. Trans., 25 Cy.—110 V.
	—44379A	Support Brkt. (Dial Glass)		—44358	Pwr. Trans., 25 Cy.—220 V.
	—44084A	Support Ring (Dial Glass)		—43449A	Vol. Cont. (1/2 Meg.) and Switch
	—43542B	Drive Shaft Bracket	42	G13 —34002	Cond., .000035 Mf. Molded
	—44134	Drive Shaft	43	G37 —26719	Phono-Terminal Board
	—43549	Retaining Ring (Shaft)	45	—21875	Res., 100,000 Ohm 1/2 W. Used only on Sets with Phono-Terminals
	—43564	Pulley and Hub Assy.	46	G5 —34002	Cond., .00005 Mf. Molded
	—44299	Pointer	47	G165—32004	Wave Trap Assy. (460 Kc.)
	—40486	Screw FS 2x (Pointer Mtg.)		7E	Cabinet
	—43561	Tension Spring		—44226B	Escutcheon
	—1582	Drive Cord (18 1/2")		W —44381B	Knob (3 Req.)
	—44004	Pwr. Cord and Plug		W —43553	Rubber Mtg. Foot
19	B	Dial Light, 3-8 V.			
20	W	Light Socket Assy.			
21	G5	Resistor, 300,000 Ohm 1/2 W. Carbon			
22	—21455	Resistor, 3 Megohm 1/2 W. Carbon			
23	—26577	Resistor, 15,000 Ohm 1/2 W. Carbon			
24	—37485	Resistor, 15,000 Ohm 1/2 W. Carbon			
	—35928	Resistor, 60,000 Ohm 1/2 W. Ins.			

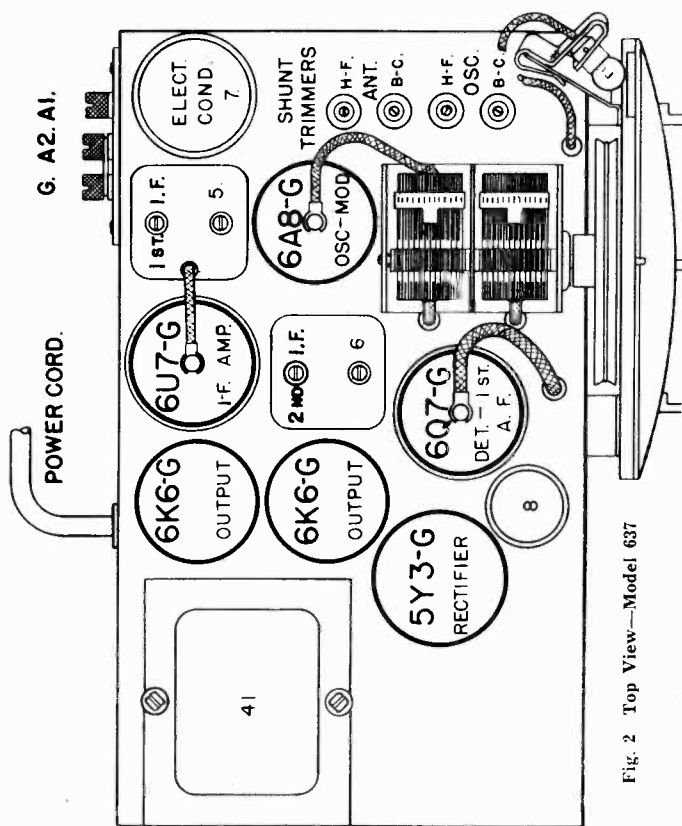


Fig. 2 Top View—Model 637

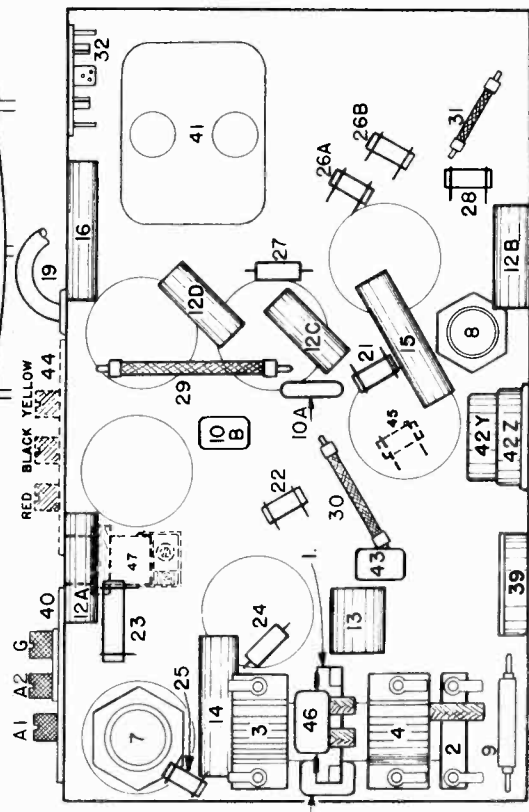
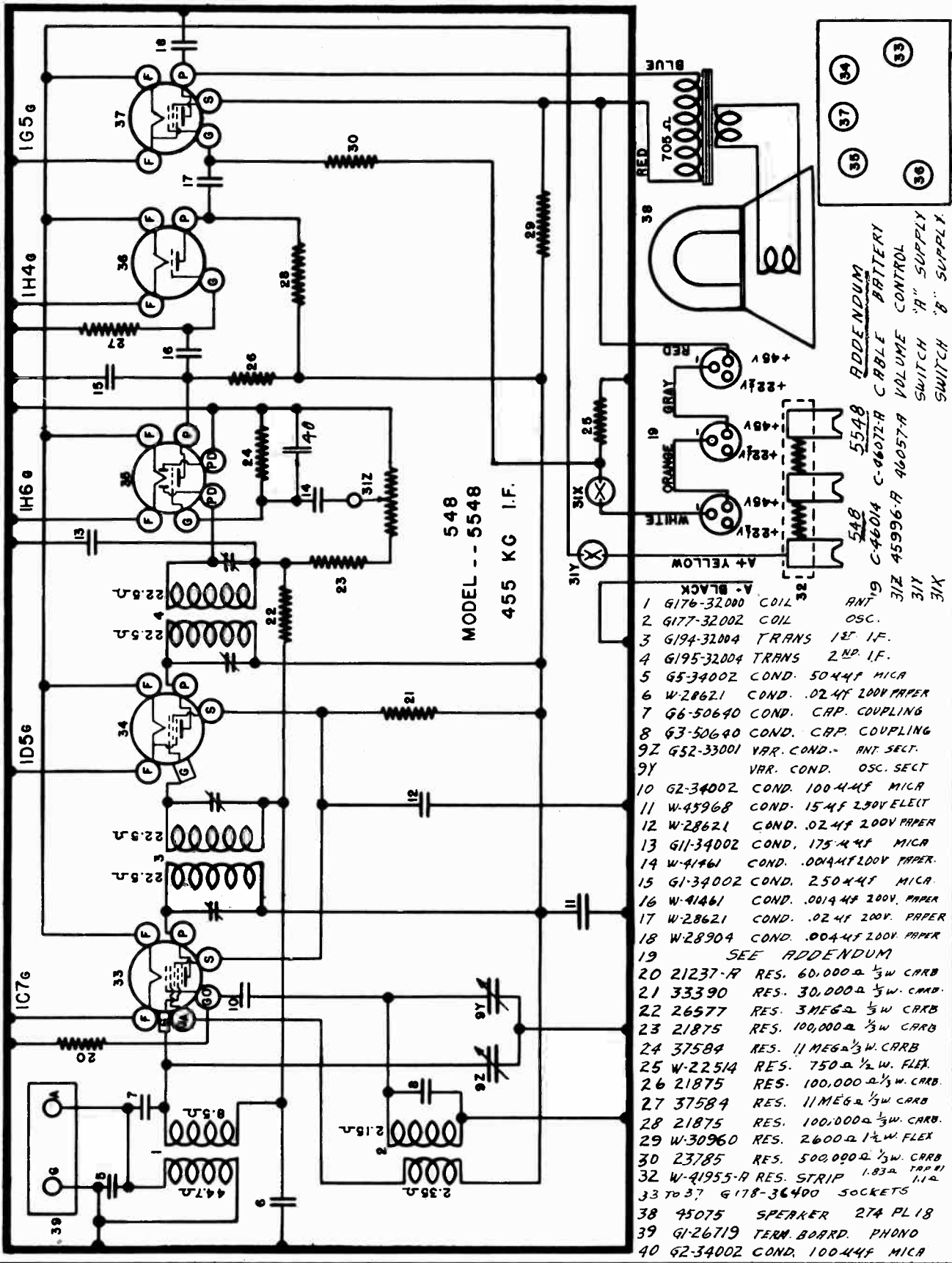


Fig. 3 Bottom View—Model 637

MODELS 548, 5548
Schematic, Socket
Parts

CROSLLEY RADIO CORP.



- ADDENDUM
- 1 G176-32000 COIL ANT
 - 2 G177-32002 COIL OSC.
 - 3 G194-32004 TRANS 1ST I.F.
 - 4 G195-32004 TRANS 2ND I.F.
 - 5 G5-34002 COND. 50.4UF MICA
 - 6 W-28621 COND. .024F 200V PAPER
 - 7 G6-50640 COND. CAP. COUPLING
 - 8 G3-50640 COND. CAP. COUPLING
 - 9Z G52-33001 VAR. COND. ANT. SECT.
 - 9Y VAR. COND. OSC. SECT.
 - 10 G2-34002 COND. 100.4UF MICA
 - 11 W-45968 COND. 15.4F 250V ELECT
 - 12 W-28621 COND. .024F 200V PAPER
 - 13 G11-34002 COND. 175.4UF MICA
 - 14 W-41461 COND. .0044F 200V PAPER.
 - 15 G1-34002 COND. 250.4UF MICA.
 - 16 W-41461 COND. .0014UF 200V. PAPER
 - 17 W-28621 COND. .024F 200V. PAPER
 - 18 W-28904 COND. .0044F 200V PAPER
 - 19 SEE ADDENDUM
 - 20 21237-A RES. 60,000Ω 1/2W CARB
 - 21 33390 RES. 30,000Ω 1/2W CARB.
 - 22 26577 RES. 3MEGΩ 1/2W CARB
 - 23 21875 RES. 100,000Ω 1/2W CARB
 - 24 37584 RES. 11MEGΩ 1/2W CARB
 - 25 W-22514 RES. 750Ω 1/2W FLEX.
 - 26 21875 RES. 100,000Ω 1/2W CARB.
 - 27 37584 RES. 11MEGΩ 1/2W CARB
 - 28 21875 RES. 100,000Ω 1/2W CARB.
 - 29 W-30960 RES. 2600Ω 1/2W FLEX
 - 30 23785 RES. 500,000Ω 1/2W CARB
 - 32 W-41955-A RES. STRIP 1.83Ω 1.12"
 - 33 TO 37 G178-36400 SOCKETS
 - 38 45075 SPEAKER 274 PL 18
 - 39 G1-26719 TERM. BOARD. PHONO
 - 40 G2-34002 COND. 100.4UF MICA

CROSLEY RADIO CORP.

MODEL 647
Schematic
Socket

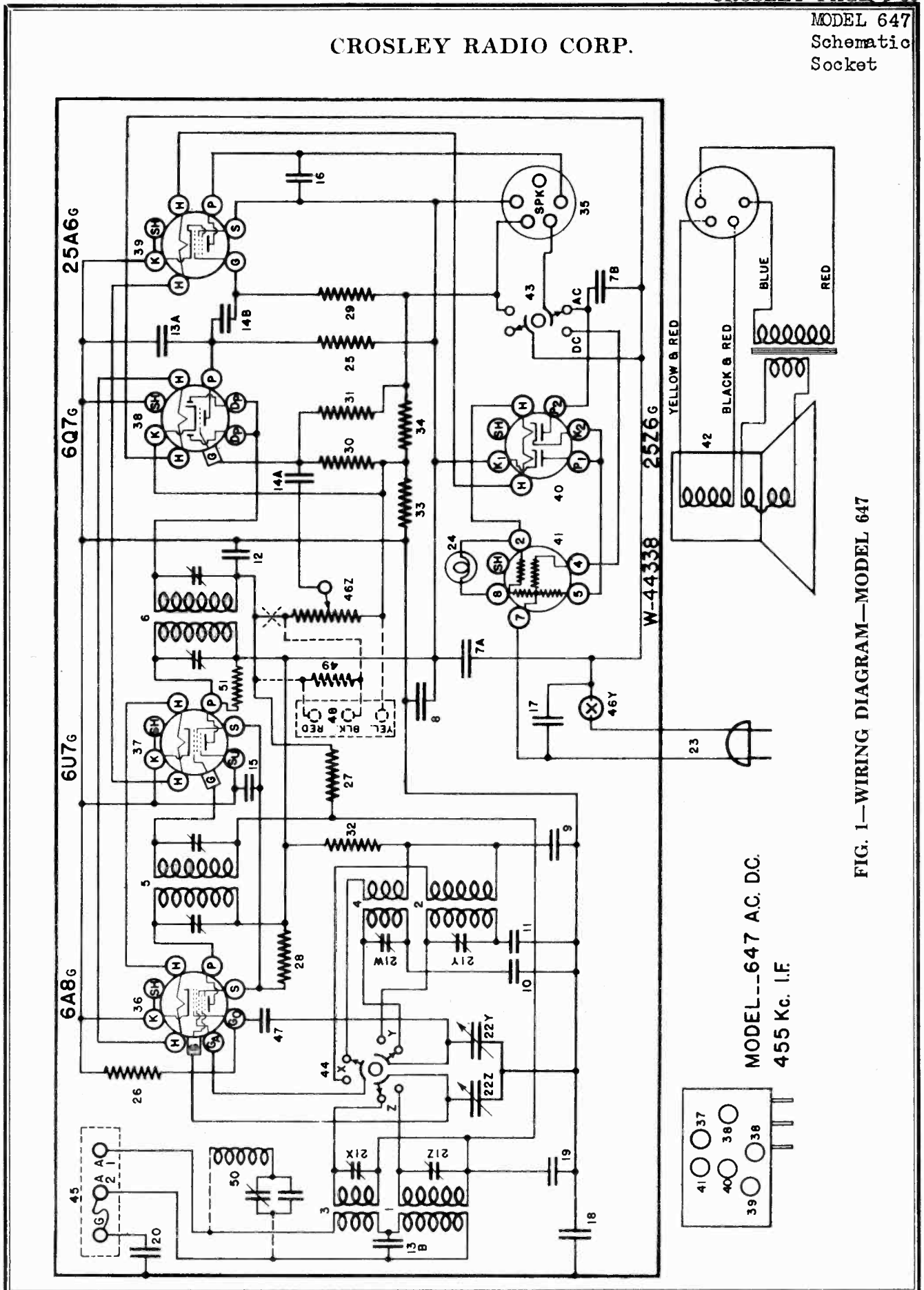
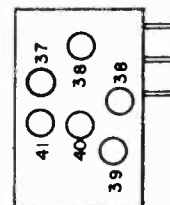


FIG. 1—WIRING DIAGRAM—MODEL 647

MODEL--647 AC. DC.
455 Kc. I.F.



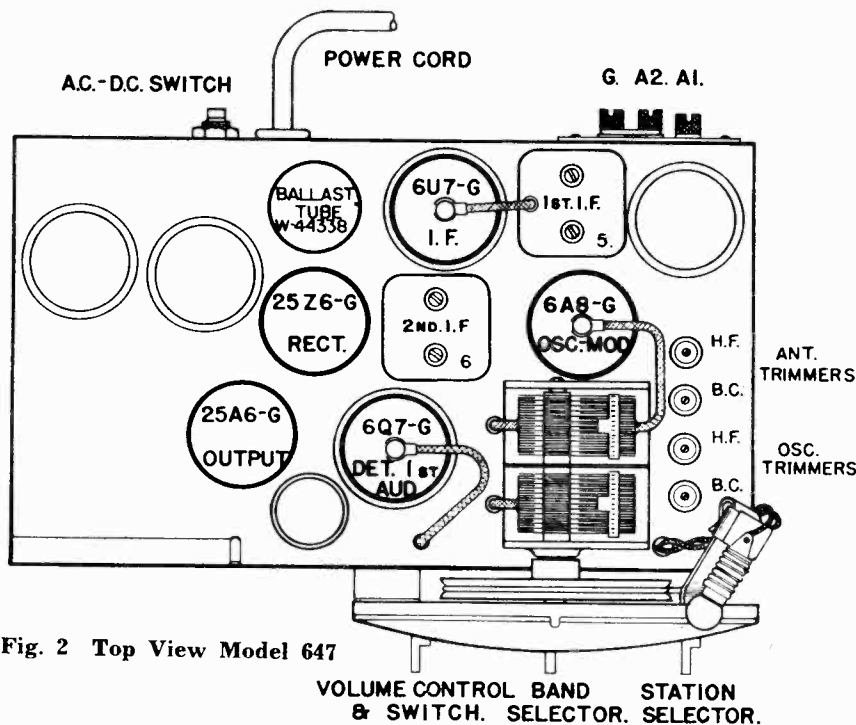
MODEL 647
Voltage, Socket
Trimmers, Layout

CROSLLEY RADIO CORP.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	145	85	0	-10	135
6U7G	I-F Amplifier	6.3	145	85	0	—	—
6Q7G	AVC, Detector & A. F. Amplifier	6.3	70	—	0	—	—
25A6G	Output	25.0	130	145	0	—	—
25Z6G	Rectifier	25.0	110 (P1)	—	145 (K1)	—	—
W-44338	Ballast	—	—	Variable	—	—	—

Power output approximately 2.5 watts.
Power consumption approximately 55 watts at 117.5 volts AC or 45 watts at 117.5 volts DC.
Voltage drop across speaker field 50 volts.
All voltage readings given above except filaments will be approximately 40% less if set is measured on 117.5 volt DC power supply.



SOCKET VOLTAGES

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the frame of the condenser gang. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with the volume control full "ON" and no signal input. The filament voltages should be measured with an accurate low range voltmeter. Voltage limits may vary plus or minus 10% of the values given.

The tuning range is divided into two bands as follows:
(American Broadcast Band)
(High Frequency or Foreign Band).

Fig. 2 Top View Model 647

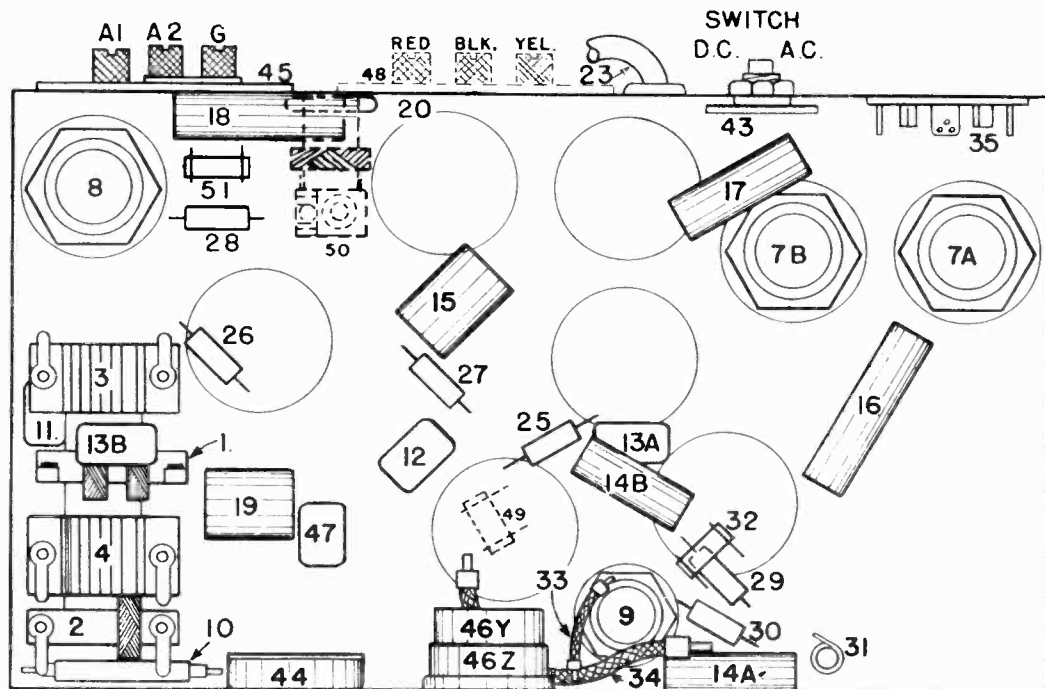


Fig. 3 Bottom View Model 647

SPECIFICATIONS
This model Crosley radio is an AC-DC receiver designed for 100 to 125 volt operation. The tuning range is divided into two bands as follows:
535-1725 Kilocycles or 550-173 Metres
(American Broadcast Band)
5.8-18.3 Megacycles or 52-16.3 Metres
(High Frequency or Foreign Band).

CROSLY RADIO CORP.

MODEL 647
Alignment
Parts

PARTS LIST — MODEL 647

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	G143-32000	Ant. Coil B. C.	29	-33344	Resistor 400,000 Ohm
2	G145-32002	Osc. Coil H. C.			1/3 W. Carb.
3	G142-32000	Ant. Coil H. B.	30	-37590	Resistor 750,000 Ohm
4	G144-32002	Osc. Coil H. F.			1/3 W. Carb.
5	G156-32004	1st I-F Assy.	31	-37584	Resistor 11 Megohm
6	G157-32004	2nd I-F Assy.			1/3 W. Carb.
7A	W -40325	Condenser 50 Mf. 150 V.	32	-31093	Resistor 2700 Ohm
7B	W -40325	Condenser 50 Mf. 150 V.			1/3 W. Carb.
8	W -36057B	Condenser 40 Mf. 300 V.	33	W -37287	Resistor 20 Ohm 1/2 W. Flex
9	W -41081	Condenser 16 Mf. 250V.	34	W -43462	Resistor 375 Ohm
10	G16 -34000	Condenser 3900 Mmf.			2 1/2 W. Flex
11	G14 -34002	Condenser .0004 Mf.	35	G103-28807	Socket Speaker
12	G1 -34002	Condenser .00025 Mf.	36	G156-36400	Socket Type 6A8
13A	G2 -34002	Condenser .0001 Mf.	37	G171-36400	Socket Type 6U7
13B	G2 -34002	Condenser .0001 Mf.	38	G160-36400	Socket Type 6Q7
14A	W -28621	Condenser .02 Mf. 200 V.	39	G161-36400	Socket Type 25A6
14B	W -28621	Condenser .02 Mf. 200 V.	40	G162-36400	Socket Type 25Z6
15	W -35936	Condenser .05 Mf. 200 V.	41	G183-36400	Socket W-44338 Ballast
16	W -30323	Condenser .01 Mf. 200 V.			Tube Shield
17	W -23191A	Condenser .01 Mf. 400 V.	42	W -40911	Speaker Spec. No. 1-D-1088
18	W -24049C	Condenser 1 Mf. 200 V.			V. C. &
19	W -36541	Condenser .02 Mf. 100 V.			Lone Assy. } Used
20	G3 -34002	Condenser .0005 Mf.			Field Coil } Output
21	W -41247A	4 Sect. Shunt Trim. Assy			on } 346BP12"M"
22	G42 -33001	2 Sect. V. Tuning Cond.			Cone Mtg. } Spk.
		Dial Face (Glass)			Ring
C	-44293	Support Brkt. (Dial Glass)			Spk. Plug Clamp
W	-44084A	Support Ring (Dial)	43	W -43552	A.C.-D.C. Switch
W	-43542B	Bracket—Drive Shaft			Lock Brkt (AC-DC Switch)
W	-43649	Drive Shaft			Band Switch
W	-43134A	Pulley & Hub. Assy.	44	W -43448A	Trans. & Term. Assy.
G1	-44299	Pointer	45	G27 -26719	Volume Cont. 500,000 Ohm
W	-40486	Screw FS20 (Pointer Mtg.)	46Z		Line Switch
W	-43561	Tension Spring	47	G13 -34002	Condenser .000035 Mf.
W	-44085B	Dial Mask	48	G37 -26719	Phono. Terminal Assy.
W	-41582	Drive Cord	49	W -21875	Resistor 100,000 Ohm 1/3 W.
W	-42666	Insulating Bushing (Shaft)			Escutcheon
23	W -44304	Cord & Plug	B	-44226B	Knob (3 Req.)
24	W -44337	Dial Light 6-8 V.	W	-44381B	Knob Mtg. Foot
25	G6 -27134	Dial Light Socket			Cabinet
		Resistor 200,000 Ohm	B	-44375B	Back—Cabinet
26	-35928	1/3 W. Carb.			Wave Trap
		1/4 W. Ins.	50	G165-32004	Resistor 500,000 Ohm
27	-26577	Resistor 3 Megohm			1/3 W. Carb.
		1/3 W. Carb.	51		
28	-22831	Resistor 15,000 Ohm			
		1/3 W. Carb.			

TOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

Aligning R-F Amplifier.
When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 100 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch is set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C), is heard. It is not necessary that the receiver tune through this signal.

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE "OSC" TRIMMER.

NOTE 1: When shunt aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

NOTE 2: If at any time the H.F. coils are replaced, it may be necessary to vary the inductance of the "OSC" coil by moving the cross-over turn of wire at the gap to make the set track at the 6 megacycle end. Moving the turn toward the short end of the coil will decrease the inductance and moving it toward the long end will increase the inductance. If the signal is weak at 6 megacycles, a similar slight change in the inductance of the "ANT" coil should bring up the signal strength. THIS IS A CRITICAL OPERATION AND SHOULD NOT BE DONE ON ANY SET UNLESS CHANGING COILS MAKES IT NECESSARY.

CIRCUIT DESCRIPTION

Six octal base glass tubes are employed in a super-heterodyne circuit which consists of a combination oscillator-modulator tube, 455 kilocycle I-F amplifier, detector, pentode output and power supply. The 6Q7C tube serves as a detector and 1st audio amplifier and supplies AVC voltage to the grids of the 6A8C and 6U7G tubes. A ballast tube, part No. W-44338, is used in the power supply circuit. The bias voltage for the 6A8C and 6U7G tubes is developed across a 20 ohm resistor, item 33, and the bias voltage for the 6Q7C and 25A6C tubes is developed across a 375 ohm resistor, item 34. The two resistors, items 30 and 31, serve as a voltage divider for the 6Q7G tube. The speaker field is connected across the "B" power supply. A .01 mfd. condenser, item 17, is connected across the power supply leads to reduce electrical interference from that source.

AC-DC SWITCH

A switch is located on the rear of the chassis for the purpose of adapting the receiver to either an AC or DC power supply. To change the position on the switch, remove the screw in the locking bracket and move the end of the bracket to the other position as marked on the chassis. Lock the switch in position by replacing the screw. DO NOT OPERATE THE RECEIVER ON A DC POWER SUPPLY WITH THE SWITCH IN THE "AC" POSITION NOR ON AN AC POWER SUPPLY WITH THE SWITCH IN THE "DC" POSITION AS IT WILL CAUSE DAMAGE TO THE RECEIVER PARTS.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25A6C output tube. Be certain that the meter is protected from DC by connecting a condenser (1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning I-F Amplifier to 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the antenna terminal "A" on the rear of the chassis. Connect the ground lead from the signal generator to the GROUND TERMINAL "G" on the receiver chassis. DO NOT CONNECT THE GROUND LEAD FROM THE SIGNAL GENERATOR DIRECTLY TO THE RECEIVER CHASSIS. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the band selector switch to the left (American Broadcast Band) and turn the volume control to the "ON" position.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmer condensers located on top of the 2nd I-F transformer (Fig. 2) for maximum reading on the output meter.

(e) Adjust both trimmer condensers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR

(C) SIGNAL INPUT FREQUENCIES

Minimum Capacity	1,725 Kilocycles
American Broadcast Band	18,000 Kilocycles
Wave Trap	
Shunt Alignment	1,400 Kilocycles
	16,000 Kilocycles

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 100 mmf. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang con-

denser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

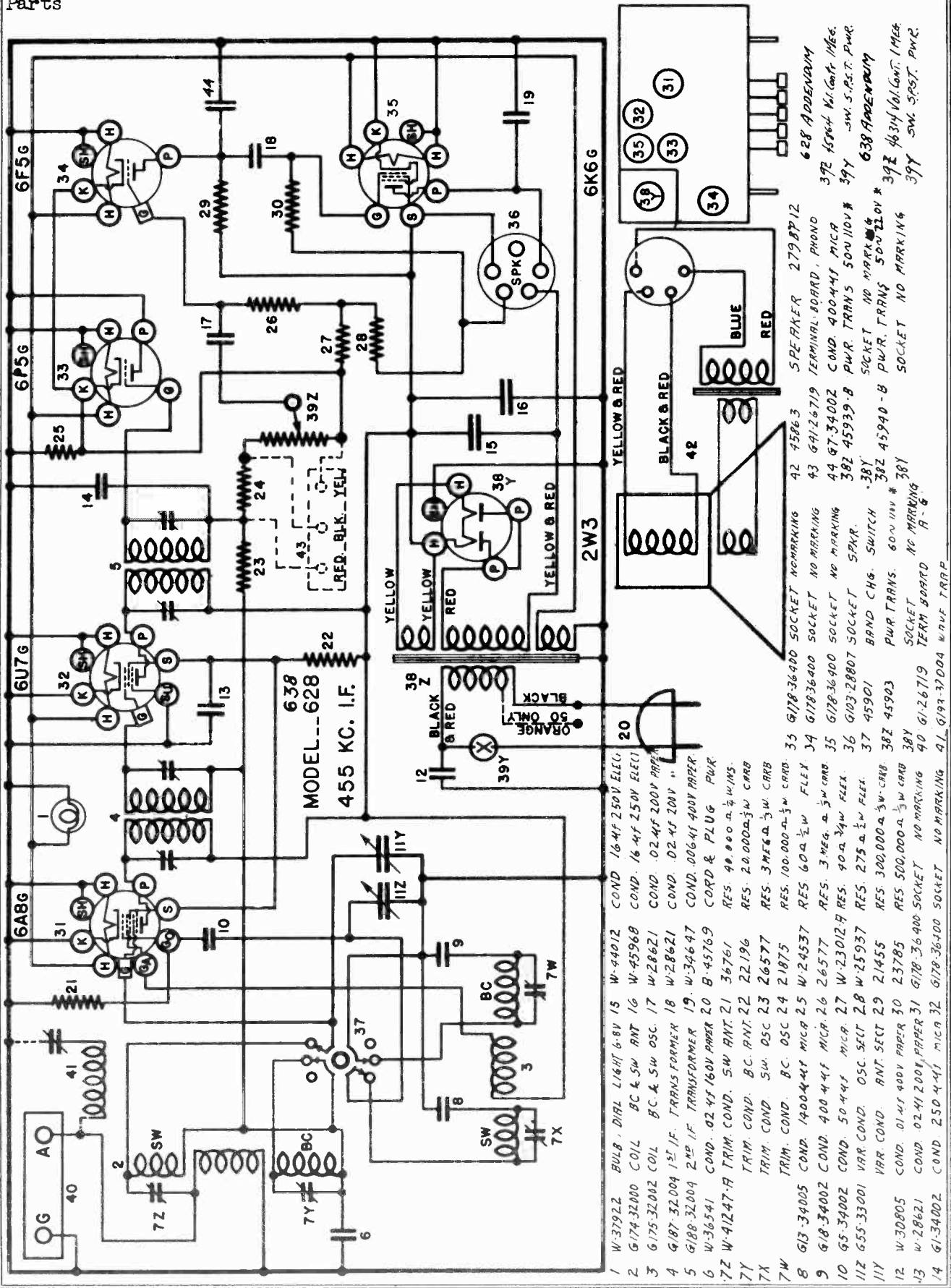
Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

AUG. 1937

Chassis Model 647

MODELS 628, 638
Schematic, Socket
Parts

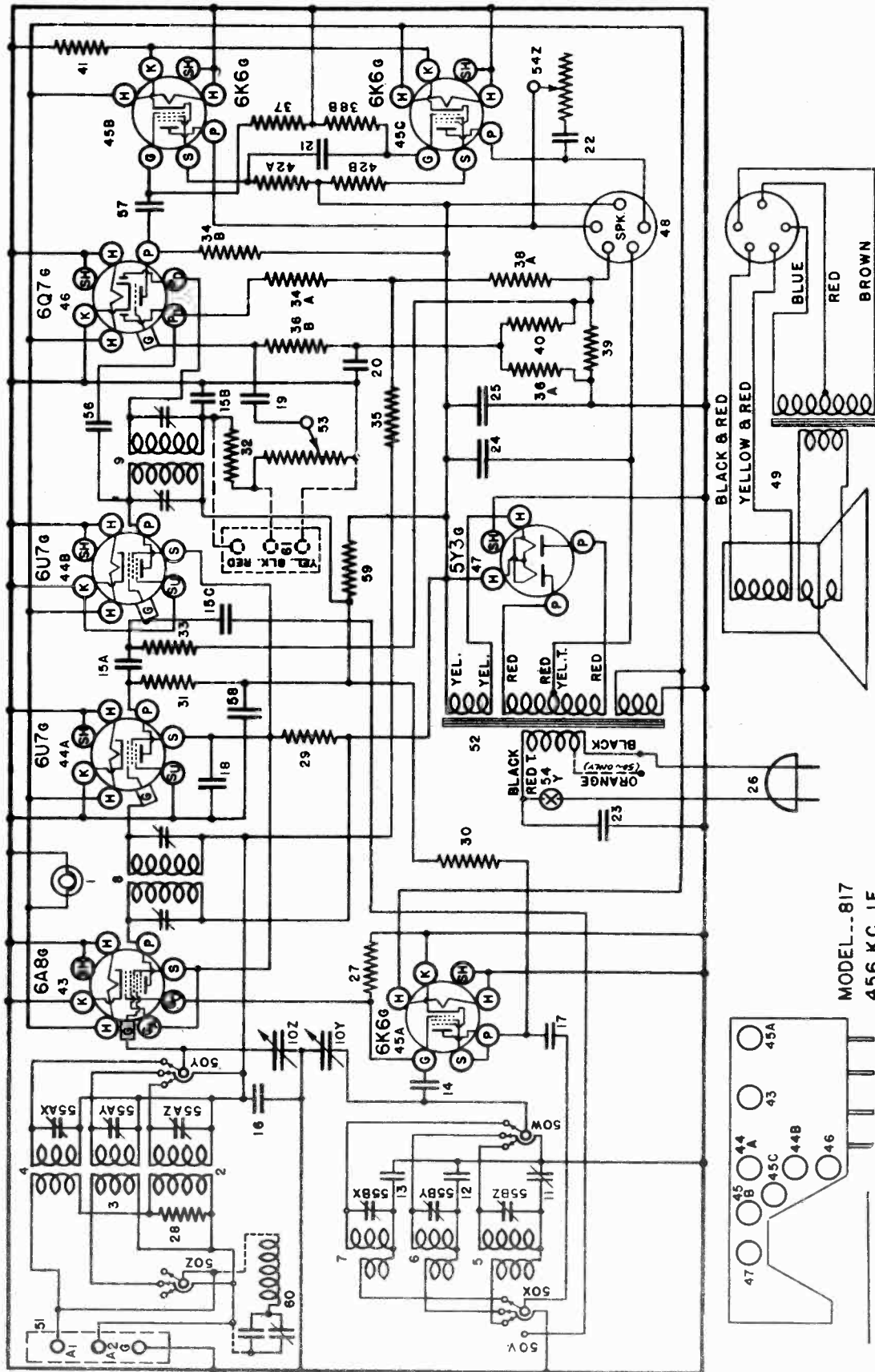
CROSLLEY RADIO CORP



- 1 W-37922 BULB, DIAL LIGHT 6-8V 15 W-44012 COND. 16-4F 250V ELEC.
- 2 G174-32000 COIL BC & SW ANT 16 W-45968 COND. 16-4F 250V ELEC.
- 3 G175-32002 COIL BC & SW OSC 17 W-28621 COND. 02-4F 200V PAPER
- 4 G187-32004 1ST I.F. TRANSFORMER 18 W-28621 COND. 02-4F 200V "
- 5 G188-32004 2ND I.F. TRANSFORMER 19 W-34647 COND. 006-4F 400V PAPER
- 6 W-36541 COND. 02-4F 160V PAPER 20 B-45769 CORD & PLUG PWR
- 7Z W-41247-A TRIM COND. SW ANT 21 36761 RES. 49,000-Ω 1/2 W MS.
- 7Y TRIM COND. BC ANT 22 22196 RES. 20,000-Ω 3/4 W CARB
- 7X TRIM COND SW OSC 23 26577 RES. 3 MEG. Ω 3/4 W CARB
- 7W TRIM COND. BC OSC 24 21875 RES. 100,000-Ω 3/4 W CARB
- 8 G13-34005 COND. 1400-4-4F MICR. 25 W-24537 RES. 60 Ω 1/2 W FLEX
- 9 G18-34002 COND. 400-4-4F MICR. 26 26577 RES. 3 MEG. Ω 3/4 W CARB
- 10 G5-34002 COND. 50-4-4F MICR. 27 W-23012-A RES. 40 Ω 3/4 W FLEX
- 11Z G55-33001 VAR COND. OSC SECT 28 W-25937 RES. 275 Ω 1/2 W FLEX
- 11Y VAR COND. ANT SECT 29 21455 RES. 300,000-Ω 3/4 W CARB
- 12 W-30805 COND. 01-4F 400V PAPER 30 23785 RES. 500,000-Ω 3/4 W CARB
- 13 W-28621 COND. 02-4F 200V PAPER 31 G178-36400 SOCKET NO MARKING 40 G1-26719 TERM BOARD NO MARKING
- 14 G1-34002 COND. 250-4-4F MICR 32 G178-36400 SOCKET NO MARKING 41 G193-37004 WAVE TRAP
- 33 G178-36400 SOCKET NO MARKING 42 45863 SPEAKER 2798712
- 34 G178-36400 SOCKET NO MARKING 43 G1-26719 TERMINAL BOARD, PHONO 628 APPENDIX
- 35 G178-36400 SOCKET NO MARKING 44 G1-34002 COND. 400-4-4F MICR. 372 45864 Vol. Cont. Meca.
- 36 G103-28807 SOCKET SPKR. 382 45939-B PWR TRANS 50V 110V * 39Y SW. S.P.S.T. PWR.
- 37 45901 BAND CHG. SWITCH .38Y SOCKET NO MARKING 45 638 APPENDIX
- 38Z 45940-B PWR. TRANS 50V 110V * 39Z 4634 Vol. Cont. Meca.
- 38Y PWR TRANS. 80V 110V * 38Y SOCKET NO MARKING 46 39Y SW. S.P.S.T. PWR.
- 39Y PWR TRANS. 80V 110V * 38Y SOCKET NO MARKING 47
- 40 G1-26719 TERM BOARD NO MARKING 48
- 41 G193-37004 WAVE TRAP

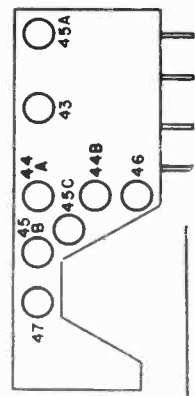
CROSLY RADIO CORP.

MODEL 817
Schematic
Socket



MODEL--817
456 KC. 1.F

FIG. 1—WIRING DIAGRAM—MODEL 817



JULY, 1937

MODEL 817
Voltage, Socket
Trimmers, Layout

CROSLLEY RADIO CORP.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6A8G	Modulator	6.3	240	85	Neg	0	Neg	85
6K6G	Oscillator	6.3	145	145	Neg	0	—	—
6U7G	1st I-F Amp	6.3	240	85	Neg	0	—	—
6U7G	2nd I-F Amp	6.3	210	85	Neg	0	—	—
6Q7G	Det., AVC & 1st A-F Amp	6.3	120	—	Neg	0	—	—
6K6G	Output	6.3	235	230	0	18.5	—	—
6K6G	Output	6.3	235	230	0	18.5	—	—
5Y3G	Rectifier	5.0	—	—	—	240	—	—

Power output approximately 5.5 watts.

Power consumption approximately 70 watts at 117.5 volts
Voltage drop across speaker field 80 volts

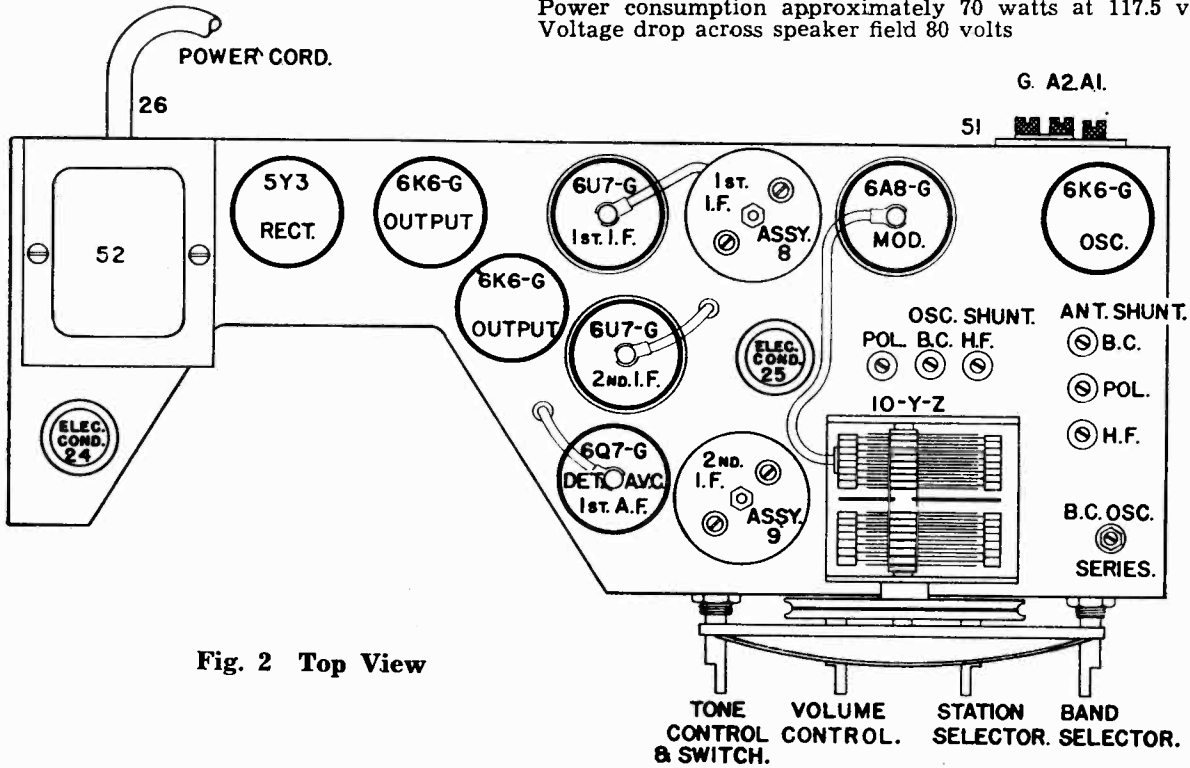


Fig. 2 Top View

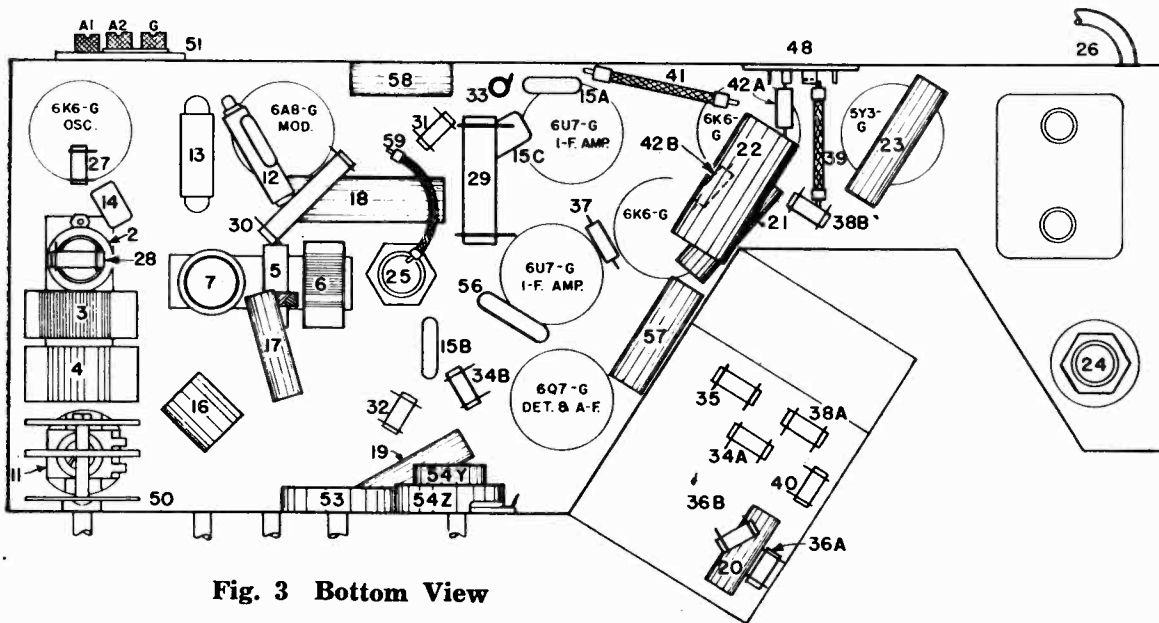


Fig. 3 Bottom View

CROSLLEY RADIO CORP.

MODEL 817
Alignment, Phono.
Data, Parts

selector and signal generator should be set to the frequency indicated for each adjustment, paragraph (c) below.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned in with maximum output and then check the adjustment of the "OSC" trimmer. **DO NOT READJUST THE "OSC" TRIMMER.**

NOTE: When shunt aligning the Police and High Frequency Bands care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times, or more, to try to tune in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

(b) To align the B. C. OSC. series trimmer (Fig 2), set the signal generator to the frequency indicated below and then tune in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(C) SIGNAL INPUT FREQUENCIES

Shunt Alignment
1700 Kilocycles
6000
18 Megacycles

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from radio stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underside of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 60). 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 .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang con-

denser plates are completely out of mesh. Turn the volume control knob to the right (ON), and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F assm. for maximum output. (Item 9, Fig. 2)

(f) Adjust both trimmers located on top of the 1st I-F assm. for maximum output. (Item 8, Fig. 2)

(g) Check operations (e) and (f) for more accurate adjustment.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE ALIGNING R-F Amplifier.

When aligning the I-F amplifier, the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast and Police Bands a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the station

(C) SIGNAL INPUT FREQUENCIES

American Broadcast Band
Police & Amateur Band
6000

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from radio stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underside of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 60). 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 .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang con-

The tuning range is from 540 kilocycles to 22 megacycles and is divided into three bands as follows: (American, Broadcast Band)
1.9 - 6.6 Megacycles or 138-465 Metres (Police & Amateur Band)
6.4 - 22 Megacycles or 47-13.5 Metres (High Frequency or Foreign Band)

in the output circuit by the voltage developed across a 3000 ohm resistor, item 42A, located in the screen circuit of one of the output tubes, item 43B.

SOCKET VOLTAGES
The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500-volt D. C. voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A. C. voltmeter (approximately 0-10 volts). Readings may vary plus or minus 10% of values given.

terminal at which one side of the power cord is attached. The other end of this jumper wire should be connected to the ORANGE or BLACK lead of the transformer primary, according to the line voltage the receiver is to be used on.

NOTE: Any change made in the power supply circuit of the receiver should be plainly stamped or otherwise permanently recorded on the rear of the chassis.

ALIGNMENT PROCEDURE
All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits may be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER
Connect the output meter to the plates of the two 6K6G Output tubes. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning I-F Amplifier to 455 Kilocycles.
(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8C tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP FROM THE GRID LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

This model Crosley radio is an 8-tube A.C. receiver designed for American and Foreign broadcast reception. 540-1850 Kilocycles or 555-182 Metres (American, Broadcast Band)
1.9 - 6.6 Megacycles or 138-465 Metres (Police & Amateur Band)
6.4 - 22 Megacycles or 47-13.5 Metres (High Frequency or Foreign Band)

Circuit Description.
Eight octal base glass tubes are employed in a super-heterodyne circuit which consists of separate oscillator and modulator tubes, two stages of I-F amplification—the second of which is resistance coupled, a combination AVC and diode detector and 1st. A.F. amplifier tube, push pull output and power supply. The speaker field is located in the negative leg of the power supply. The bias for all tubes except the output is developed across a 40 ohm resistor, item 39, located between the speaker field and ground. Phase inversion is obtained

Receivers equipped with a 50 cycle power transformer have a "high" and "low" voltage tap on the under side of the chassis. The "high" voltage lead (BLACK) and the "low" voltage lead (ORANGE) are connected to a terminal strip near the transformer.

The voltage range of the "low" tap of the 95-130 volt transformer is from 95 to 112½ volts and of the "high" tap is from 112½ to 130 volts. The range of the "low" tap of the 190-260 volt transformer is from 190 to 225 volts and of the "high" tap is from 225 to 260 volts. The accompanying illustration shows the connections

for changing from high to low or low to high line voltage. Note the "jumper" wire which is attached to the

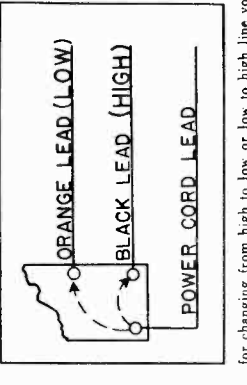


Fig. 4 Phonograph Pickup

PARTS LIST—MODEL 817

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Function
1	W	-43567	Bulb, Dial Light, 6-8 V.
	W	-44364	Bracket, for Dial Light
	G138	-32000	Ant. Coil, 535-1850 Kc.
	G138	-32000	Ant. Coil, 1900-6600 Kc.
	G140	-32000	Ant. Coil, 6.5-22 Mc.
	G139	-32002	Osc. Coil, 535-1850 Kc.
	G138	-32002	Osc. Coil, 1900-6600 Kc.
	G140	-32002	Osc. Coil, 6.5-22 Mc.
	G153	-32004	1st I-F Assy.
	G154	-32004	2nd I-F Assy.
	G41	-33001	2 Section Gang Cond.
	D	-41090	Glass Dial Face
	W	-44085B	Dial Mask (Paper)
	W	-44084	Dial Support Ring
	G	-44082	Support Brkt., Dial Glass
	C	-41582	Pulley and Hub Assy.
	W	-41584	Drive Shaft (1½ in. Req.)
	W	-44134	Shaft Ret. Ring
	W	-43542B	Brkt. for Drive Shaft
	W	-43561	Drive Spring
	W	-44299	Dial Hand
	W	-44086	Pointer Mtg. Screw
	B	-40769	B.C. Osc. Series Trimmer
	G23	-34000	Condenser, 1560 Mmf.
	G20	-34000	Condenser, 4910 Mmf.
	G13	-34002	Condenser, 35 Mmf.
	G2	-34002	Condenser, 100 Mmf.
	W	-35936	Condenser, .05 Mf. 200 V.
	W	-35139	Condenser, .004 Mf. 400 V.
	W	-22688	Condenser, 1 Mf. 400 V.
	W	-27652	Condenser, .003 Mf. 200 V.
	W	-28212	Condenser, .02 Mf. 200 V.
	W	-30488	Condenser, .02 Mf. 400 V.
	W	-32615	Condenser, .05 Mf. 400 V.
	W	-30806	Condenser, .01 Mf. 400 V.
	W	-44084	Condenser, 30 Mf. 350 V.
	W	-38157	Condenser, 40 Mf. 300 V.
	B	-33906A	Power Cord and Plug
	W	-21237A	Resistor, 60,000 Ohm. ½W.
	W	-22196	Resistor, 20,000 Ohm. ¼W.
	W	-44038	Resistor, 10,000 Ohm. ¼W.
	W	-28116	Resistor, 15,000 Ohm. ½W.
	W	-51093	Resistor, 2,700 Ohm. ¼W.
	W	-35600	Resistor, 100,000 Ohm. ¼W.
	W	-21875	Resistor, 100,000 Ohm. ¼W.
11			
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15	ABC		
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39	W	-23012A	Resistor, 40 Ohm. ½W. Flex.
40		-34883	Resistor, 2 Megohm. ½W.
41	W	-21965	Resistor, 375 Ohm. 1W. Flex.
42		-44009	Resistor, 3,000 Ohm. ¼W.
43	G156	-36400	Socket, Type 6A8
44	G171	-36400	Socket, Type 6U7
45	G172	-36400	Socket, Type 6K6
46	G160	-36400	Socket, Type 6Q7
47	G173	-36400	Socket, Type 6Y3
48	G103	-28807	Socket, Type Speaker
49	W	-40911	Tube Shield
	W	-27811A	Base, Tube Shield
49	465BP	-12" M"	Speaker Spec., 1 D-1049 "M" V. C. and Cone Assy. for 465BP12" M" Spkr.
		-44273	Field Coil for 465BP12" M" Spkr.
		-44274	Output Trans. for 465BP12" M" Spkr.
	W	-43562	Spk. Plug Clamp
	W	-44019	Band Selector Switch
	G27	-26719	A1-A2-G. Terminal Assy.
		-44057	Power Trans., 110 V. 60 Cy.
		-44058	Power Trans., 110 V. 50 Cy.
		-44039	Power Trans., 220 V. 50 Cy.
		-44060	Power Trans., 110 V. 25 Cy.
		-44051	Power Trans., 220 V. 25 Cy.
		-44081	Volume Control, 1 Meg.
		-44024	Tone Control, 100,000 Ohm. Line Switch
	W	-35951	3 Sect. Shunt Trimmer Assy.
	G3	-34002	Condenser, 500 Mmf.
	W	-34647	Condenser, .006 Mf. 400 V.
	W	-32378	Condenser, .01 Mf. 400 V.
	W	-25013	Resistor, 2,000 Ohm. 1½W. Flex.
	W	-44088	Knob
	W	-50164A	Knob
	W	-43553	Rubber Mtg. Foot
	W	-41223	Grille Bar (2)
	W	-44092	Grille Cloth
	W	-7C	Cabinet
	B	-44226B	Escutcheon
	G165	-32001	Wave Trap

Item No.	Part No.	Name	Function
34AB		-21455C	Resistor, 300,000 Ohm. ¼W.
35		-21454	Resistor, 1 Megohm. ¼W.
36AB		-26577	Resistor, 3 Megohm. ¼W.
37		-36322C	Resistor, 500,000 Ohm. ¼W.
38AB		-35785	Resistor, 500,000 Ohm. ¼W.
39	W	-23012A	Resistor, 40 Ohm. ½W. Flex.
40		-34883	Resistor, 2 Megohm. ½W.
41	W	-21965	Resistor, 375 Ohm. 1W. Flex.
42		-44009	Resistor, 3,000 Ohm. ¼W.
43	G156	-36400	Socket, Type 6A8
44	G171	-36400	Socket, Type 6U7
45	G172	-36400	Socket, Type 6K6
46	G160	-36400	Socket, Type 6Q7
47	G173	-36400	Socket, Type 6Y3
48	G103	-28807	Socket, Type Speaker
49	W	-40911	Tube Shield
	W	-27811A	Base, Tube Shield
49	465BP	-12" M"	Speaker Spec., 1 D-1049 "M" V. C. and Cone Assy. for 465BP12" M" Spkr.
		-44273	Field Coil for 465BP12" M" Spkr.
		-44274	Output Trans. for 465BP12" M" Spkr.
	W	-43562	Spk. Plug Clamp
	W	-44019	Band Selector Switch
	G27	-26719	A1-A2-G. Terminal Assy.
		-44057	Power Trans., 110 V. 60 Cy.
		-44058	Power Trans., 110 V. 50 Cy.
		-44039	Power Trans., 220 V. 50 Cy.
		-44060	Power Trans., 110 V. 25 Cy.
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		-44081	Volume Control, 1 Meg.
		-44024	Tone Control, 100,000 Ohm. Line Switch
	W	-35951	3 Sect. Shunt Trimmer Assy.
	G3	-34002	Condenser, 500 Mmf.
	W	-34647	Condenser, .006 Mf. 400 V.
	W	-32378	Condenser, .01 Mf. 400 V.
	W	-25013	Resistor, 2,000 Ohm. 1½W. Flex.
	W	-44088	Knob
	W	-50164A	Knob
	W	-43553	Rubber Mtg. Foot
	W	-41223	Grille Bar (2)
	W	-44092	Grille Cloth
	W	-7C	Cabinet
	B	-44226B	Escutcheon
	G165	-32001	Wave Trap

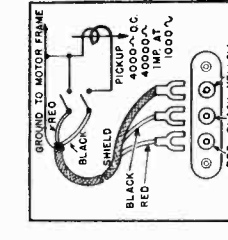


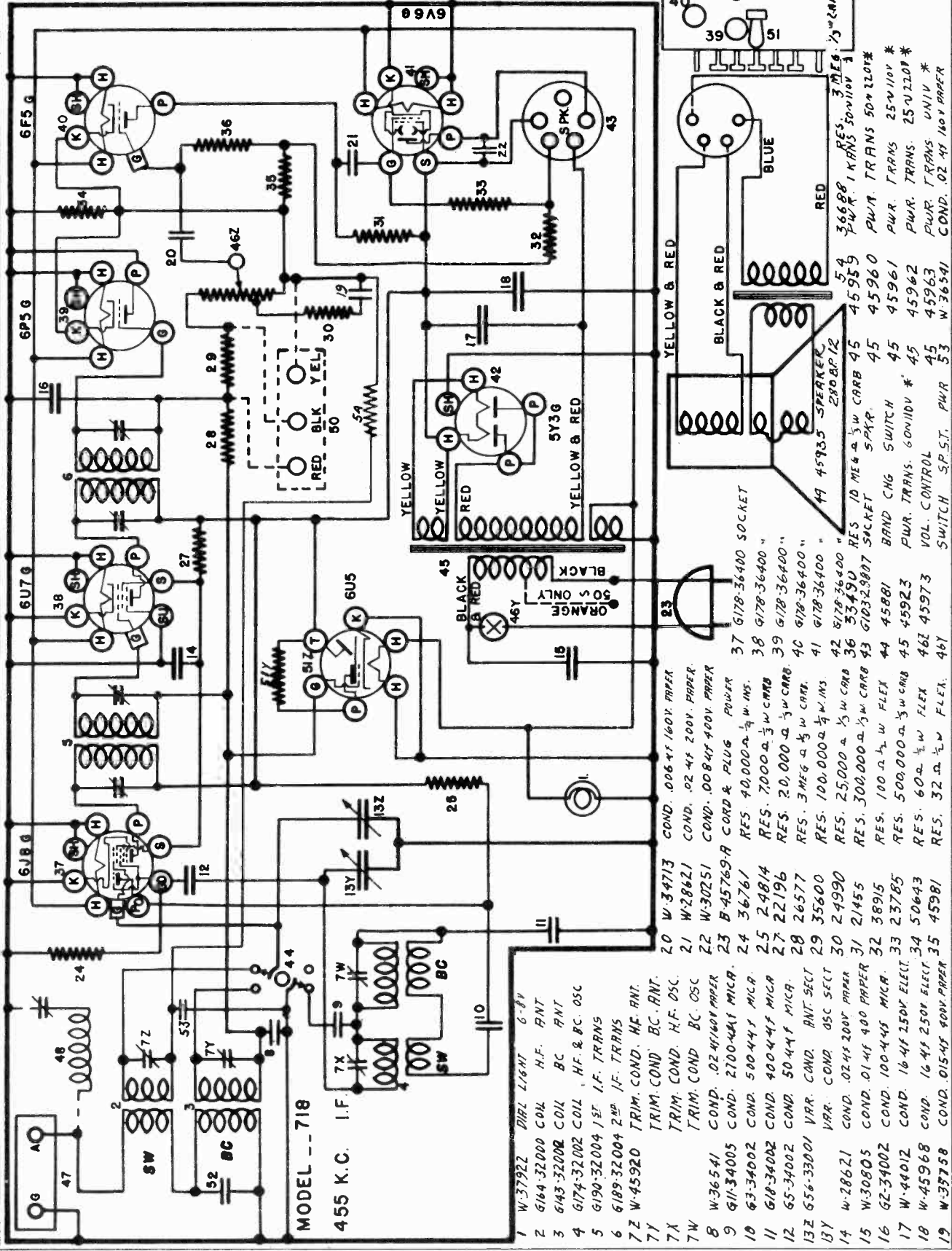
Fig. 4 Phonograph Pickup

MODEL 718

CROSLLEY RADIO CORP.

Schematic Parts

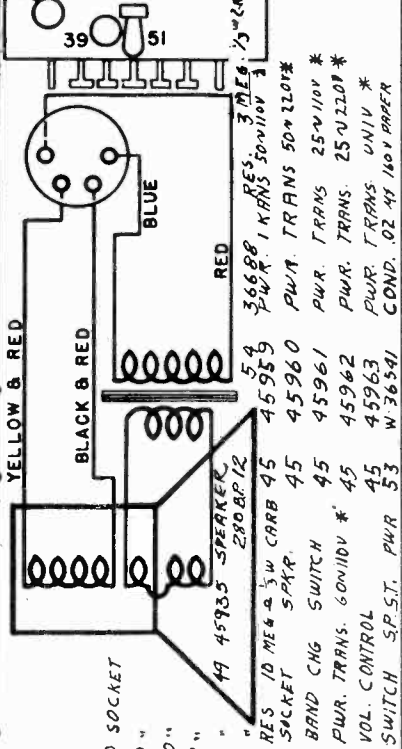
512 W-44121 SOCKET TUNING IND. 47 61-26719 TERM. BOARD A-G.
 51Y RES 10MEG PART OF TUN. 48 6193-32004 WRVE TRAP
 52 65-34002 COND. 50 4441 MICM 50 641-26719 TERM BOARD PHONO



MODEL -- 718

455 K.C. I.F.

- 1 W-37922 DIAPHRAGM 6-8V
- 2 614-32000 COIL H.F. ANT
- 3 6143-32002 COIL BC ANT
- 4 6174-32002 COIL H.F. & BC. OSC
- 5 6189-32004 1ST I.F. TRNNS
- 6 6189-32004 2ND I.F. TRNNS
- 7 6189-32004 TRIM. COND. H.F. ANT.
- 7Y TRIM. COND. BC. ANT.
- 7X TRIM. COND. H.F. OSC.
- 7W TRIM. COND. BC. OSC.
- 8 W-36541 COND. .02 MF 400V. PAPER
- 9 611-34005 COND. 2100-444F MICR.
- 10 63-34002 COND. 500-444F MICR.
- 25 24814 COND. 400-444F MICR.
- 27 22196 COND. 50-444F MICR.
- 28 26577 COND. ANT. SECT.
- 13Z 656-33001 VAR. COND. ANT. SECT.
- 13Y VAR. COND. OSC SECT.
- 14 W-28621 COND. .02 MF 200V. PAPER
- 15 W-30805 COND. .01 MF 400 PAPER
- 16 62-34002 COND. 100-444F MICR.
- 17 W-44012 COND. 16-44F 150V. ELEC. 33 23785
- 18 W-45968 COND. 16-44F 250V. ELEC. 34 50643
- 19 W-37758 COND. .015 MF 400V. PAPER
- 20 W-34713 COND. .006 MF 160V. PAPER
- 21 W-28621 COND. .02 MF 200V. PAPER
- 22 W-30251 COND. .008 MF 400V. PAPER
- 23 B-45769-A CORD & PLUG POWER
- 24 36761 RES. 40,000 Ω 1/2 W. INS.
- 25 24814 RES. 70,000 Ω 1/2 W. CARB
- 27 22196 RES. 20,000 Ω 1/2 W. CARB.
- 28 26577 RES. 3 MEG Ω 1/2 W. CARB.
- 29 35600 RES. 100,000 Ω 1/2 W. INS.
- 30 24990 RES. 25,000 Ω 1/2 W. CARB
- 31 21455 RES. 300,000 Ω 1/2 W. CARB
- 32 38915 RES. 100 Ω 1/2 W. FLEX
- 33 23785 RES. 500,000 Ω 1/2 W. CARB
- 34 50643 RES. 60 Ω 1/2 W. FLEX
- 35 45981 RES. 32 Ω 1/2 W. FLEX
- 36 53490 RES. 10 MEG Ω 1/2 W. CARB
- 37 6178-36400 SOCKET
- 38 6178-36400 RES. 40,000 Ω 1/2 W. INS.
- 39 6178-36400 RES. 70,000 Ω 1/2 W. CARB
- 40 6178-36400 RES. 3 MEG Ω 1/2 W. CARB.
- 41 6178-36400 RES. 100,000 Ω 1/2 W. INS.
- 42 6178-36400 RES. 25,000 Ω 1/2 W. CARB
- 43 6103-29807 SOCKET
- 44 45881 BAND CHG SWITCH
- 45 45923 PWR. TRNNS. 60M10V *
- 46 45923 PWR. TRNNS. 60M10V *
- 47 45923 PWR. TRNNS. 60M10V *
- 48 45923 PWR. TRNNS. 60M10V *
- 49 45935 SPEAKER 280BP12
- 50 45935 SPEAKER 280BP12
- 51 45935 SPEAKER 280BP12
- 52 65-34002 COND. 50 4441 MICM
- 53 65-34002 COND. 50 4441 MICM
- 54 65-34002 COND. 50 4441 MICM
- 55 65-34002 COND. 50 4441 MICM
- 56 65-34002 COND. 50 4441 MICM
- 57 65-34002 COND. 50 4441 MICM
- 58 65-34002 COND. 50 4441 MICM
- 59 65-34002 COND. 50 4441 MICM
- 60 65-34002 COND. 50 4441 MICM



- 36688 PWR. TRNNS. 50M120V *
- 45959 PWR. TRNNS. 25M110V *
- 45960 PWR. TRNNS. 25M110V *
- 45961 PWR. TRNNS. 25M110V *
- 45962 PWR. TRNNS. 25M110V *
- 45963 PWR. TRNNS. 25M110V *
- W-36541 COND. .02 MF 400V. PAPER
- W-30251 COND. .008 MF 400V. PAPER
- B-45769-A CORD & PLUG POWER
- 36761 RES. 40,000 Ω 1/2 W. INS.
- 24814 RES. 70,000 Ω 1/2 W. CARB
- 22196 RES. 20,000 Ω 1/2 W. CARB.
- 26577 RES. 3 MEG Ω 1/2 W. CARB.
- 35600 RES. 100,000 Ω 1/2 W. INS.
- 24990 RES. 25,000 Ω 1/2 W. CARB
- 21455 RES. 300,000 Ω 1/2 W. CARB
- 38915 RES. 100 Ω 1/2 W. FLEX
- 23785 RES. 500,000 Ω 1/2 W. CARB
- 50643 RES. 60 Ω 1/2 W. FLEX
- 45981 RES. 32 Ω 1/2 W. FLEX
- 53490 RES. 10 MEG Ω 1/2 W. CARB
- 6178-36400 SOCKET
- 6178-36400 RES. 40,000 Ω 1/2 W. INS.
- 6178-36400 RES. 70,000 Ω 1/2 W. CARB
- 6178-36400 RES. 3 MEG Ω 1/2 W. CARB.
- 6178-36400 RES. 100,000 Ω 1/2 W. INS.
- 6178-36400 RES. 25,000 Ω 1/2 W. CARB
- 6103-29807 SOCKET
- 45881 BAND CHG SWITCH
- 45923 PWR. TRNNS. 60M10V *
- 45923 PWR. TRNNS. 60M10V *
- 45923 PWR. TRNNS. 60M10V *
- 45923 PWR. TRNNS. 60M10V *
- 45935 SPEAKER 280BP12
- 45935 SPEAKER 280BP12
- 45935 SPEAKER 280BP12
- 65-34002 COND. 50 4441 MICM
- 65-34002 COND. 50 4441 MICM
- 65-34002 COND. 50 4441 MICM
- 65-34002 COND. 50 4441 MICM
- 65-34002 COND. 50 4441 MICM
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- 65-34002 COND. 50 4441 MICM

CROSLY RADIO CORP.

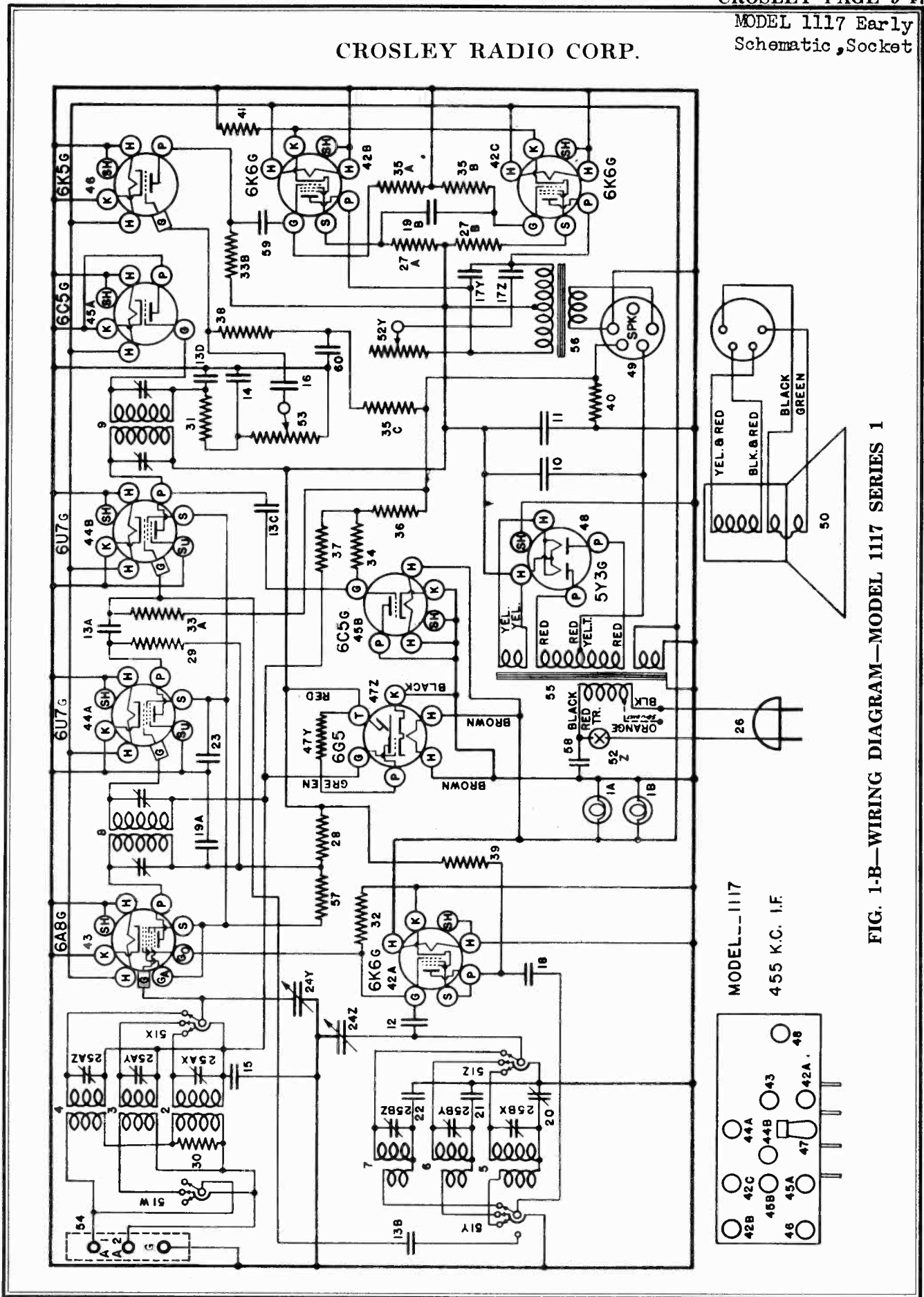


FIG. 1-B—WIRING DIAGRAM—MODEL 1117 SERIES 1

MODEL 1117 Late
Schematic, Socket

CROSLEY RADIO CORP.

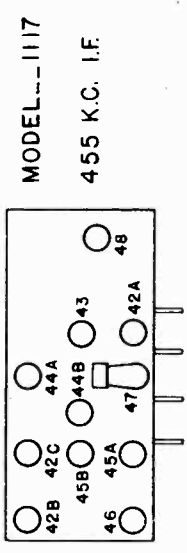
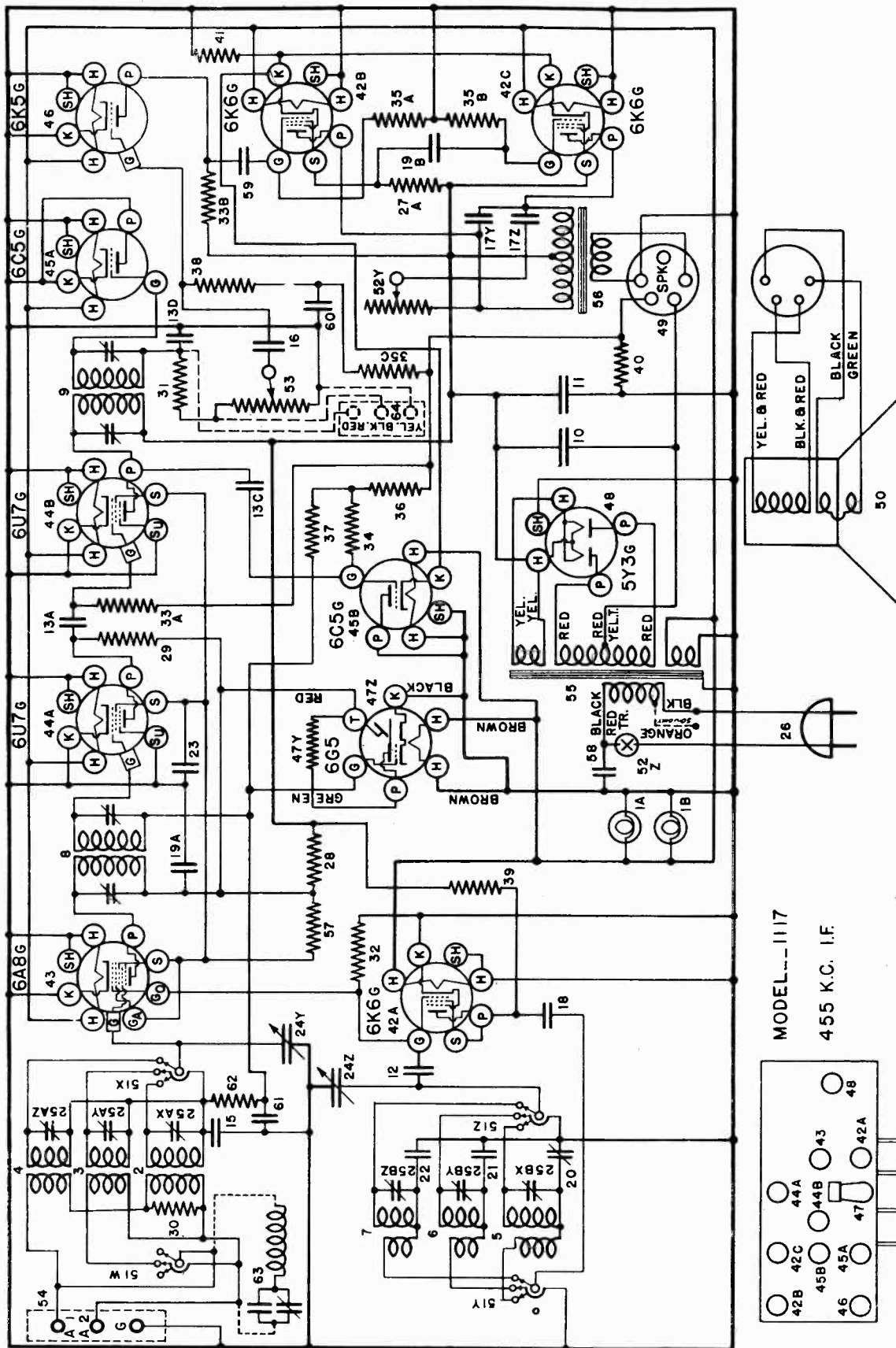


FIG. 1-A—WIRING DIAGRAM—MODEL 1117 SERIES 2

CROSLY RADIO CORP.

MODEL 1117 Alignment, Changes Data

.00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, pp (d) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (d) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (d) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

NOTE: When shunt aligning the Police and High Frequency Bands care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (d) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and at 7000 kilocycles in the High Frequency Band may be compensated for by slight repositioning of the grid lead of the antenna coil in the Band affected.

FREQUENCIES

Shunt Align.	Series Align.
1700 Kilocycles	600 Kilocycles
6000	
19	Megacycles

When the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

of the receiver should be plainly stamped or otherwise permanently recorded on the rear of the chassis.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits may be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to the plates of the two 6K6C output tubes. Be certain that the meter is protected from D. C. by a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning The I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8C tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustment.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

Aligning The R-F Amplifier.
When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a

(D) SIGNAL INPUT FREQUENCIES

American Broadcast Band	Min. Cap. Signal
2000 Kilocycles	1850 Kilocycles
High Frequency Band	6000
	22
	Megacycles

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil in fixed condenser and a trimmer condenser, as illustrated by dotted lines in the Wiring Diagram, Item 63, Fig. 1A.

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 .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang con-

tuning range is from 540 kilocycles to 22 megacycles and is divided into three bands as follows:

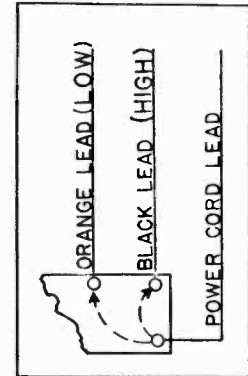
- 540-1950 Kilocycles or 555-162 Metres (American Broadcast Band)
- 19-6.6 Megacycles or 158-45.5 Metres (Police & Amateur Band)
- 6.4-22 Megacycles or 47-13.5 Metres (High Frequency or Foreign Band)

ground. Phase inversion is obtained in the output circuit by the voltage developed across a 3000 ohm resistor, item 27A, located in the screen circuit of one of the output tubes, item 42B.

SOCKET VOLTAGES

The tube socket voltages are measured from the tube socket contacts to the chassis with 1000 ohm per volt, 500 volt D. C. voltmeter (except filaments) with the receiver in operating condition and no signal input. The volume control should be turned full on, the tone control should be turned to the TREBLE position (counterclockwise) and the tuning condenser should be turned to the minimum capacity position. The filament voltages should be measured with an accurate low range A. C. voltmeter (approximately 0-10 volts). Readings may vary plus or minus 10% of values given.

- * 41. Part No. W-21965, 375 ohm 1 W resistor superseded by Part No. 22873.
 - " 61. Part No. W-28621 added.
 - " 62. Part No. 35000 added.
- In the later series a shielded lead between items 16 and 53 was found to reduce audio degeneration and thus materially improve the tone quality.



primary, according to the line voltage the receiver is to be used on.
NOTE: Any change made in the power supply circuit

This model Crosley radio is an AC receiver designed for American and Foreign broadcast reception. The 540-1950 Kilocycles or 555-162 Metres (American Broadcast Band) 19-6.6 Megacycles or 158-45.5 Metres (Police & Amateur Band) 6.4-22 Megacycles or 47-13.5 Metres (High Frequency or Foreign Band)

Circuit Description
Eleven tubes are employed in a superheterodyne circuit. The 6G5 electron ray tube is used for indicating exact tuning and is designated IRIS TUNING INDICATOR. When a station is tuned-in, the greenish glow on each side of the tube increases in width, forming a narrow shadow at the bottom of the window. Only strong signals, however, will reduce the shadow to a narrow line.

The circuit consists of separate oscillator and modulator tubes, two stages of I-F amplification—the second of which is resistance coupled, separate AVC and detector diodes, two stages of audio amplification and power supply. The speaker field is located in the negative leg of the power supply. The bias for all tubes except the output is developed across a 32 ohm resistor, item 40, located between the speaker field and

- * 14. Part No. G1-34002, 100 mmf. cond. deleted.
- " 27B Part No. 44009, 3000 ohm 1/4-w resistor deleted.

50 CYCLE POWER TRANSFORMER

Receivers equipped with a 50 cycle power transformer have a "high" and "low" voltage tap on the under side of the chassis. The "high" voltage lead (BLACK) and the "low" voltage lead (ORANGE) are connected to a terminal strip near the transformer.

The voltage range of the "low" tap of the 95-130 volt transformer is from 95 to 112½ volts and of the "high" tap is from 112½ to 130 volts. The range of the "low" tap of the 190-260 volt transformer is from 190 to 225 volts and of the "high" tap is from 225 to 260 volts. The accompanying illustration shows the connections for changing from high to low or low to high line voltage. Note the "jumper" wire which is attached to the terminal at which one side of the power cord is attached. The other end of this jumper wire should be connected to the ORANGE or BLACK lead of the transformer

MODEL 1117

Socket, Trimmers
Layout, Voltage
Parts, Phono.

CROSLLEY RADIO CORP.

PARTS LIST—MODEL 1117

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
LAB	W-43567	Dial Light Bulb	36	-37590	Resistor, 750,000 Ohm 1/4 W. Carb.
2	G3-44363	Dial Light Socket, Assy.	37	21454	Resistor, 1 Megohm 1/4 W. Carb.
3	G109-32000	Ant. Coil—1850—1850 Kc.	38	26577	Resistor, 3 Megohm 1/4 W. Carb.
4	G138-32000	Ant. Coil—6.2—22 Mc.	39	44008	Resistor, 10,000 Ohm 1/2 W. Flex.
5	G139-32002	Ant. Coil—5.35—1850 Kc.	41	W-22873	Resistor, 32 Ohm 1/4 W. Flex.
6	G138-32002	Osc. Coil—1850—1850 Kc.	42	G172-36400	Resistor, 220 Ohm 1/4 W. Flex.
7	G139-32002	Osc. Coil—6.2—22 Mc.	43	G136-36400	Socket, Type 6K6
8	G151-32004	1st I-F Assembly—155 Kc.	44	G136-36400	Socket, Type 6U7
9	G152-32004	2nd I-F Assembly—155 Kc.	45	G159-36400	Socket, Type 6C5
10	W-44054	Condenser, 30 Mf. 350 V.	46	G59-43900	Socket, Type 6K5
11	W-36957B	Condenser, 40 Mf. 300 V.	47	W-44121	1 Meg. Resistor in Socket
12	G13-34002	Condenser, .000335 Mf. Molded	47Y	G173-36400	Socket, Type 5Y3
13	G2-34002	Condenser, .0001 Mf. Molded	48	G103-27961A	Socket for Speaker
14	W-35936	Condenser, .05 Mf. 200 V.	49	W-27961A	Tube Shield Base
15	W-41461	Condenser, .05 Mf. 100 V.			
16	W-41461	Condenser, .05 Mf. 100 V.			
17	W-31052	Condenser, .004 Mf. 400 V.			
18	W-35139	Condenser, .004 Mf. 400 V.			
19	W-40769	Condenser, .05 Mf. 400 V.			
20	G23-34000	B.C. Osc. Series Trimmer (520 Mmf.)			
21	G20-34000	Pol. Osc. Series Cond. (1560 Mmf.)			
22	G20-34000	H-F. Osc. Series Cond. (4910 Mmf.)			
23	C40-32006	Section Var. in Binding Condenser			
24	MG14-44099	Control Knob, Binding Bracket			
	D-44143B	Dial Face (Glass)			
	W-44146A	Dial Mask			
	W-44110B	Dial Support BrkL			
	W-40486	Hand Hand (Pointer)			
	W-44282	Hand Mtg. Screw			
	W-41582	Dial Glass Support Ring			
	W-44134	Drive Shaft—20 Inches			
	W-43549	Shaft Retaining Ring			
	W-43542B	Shaft Bearing			
	W-44500	Shaft Pulley Assy.			
	G1-43564	3 Section Shunt Trimmer Assy.			
25	B-33006A	Power Cord and Plug, W. Carb.			
26	W-22013	Resistor, 5,000 Ohm 1/4 W. Carb.			
27	W-44165	Resistor, 5,000 Ohm 1/4 W. Carb.			
28	W-22196	Resistor, 20,000 Ohm 1/4 W. Carb.			
30	W-36320	Resistor, 120,000 Ohm 1/4 W. Carb.			
31	W-21275A	Resistor, 60,000 Ohm 1/4 W. Carb.			
32	W-21875	Resistor, 100,000 Ohm 1/4 W. Carb.			
33	W-34020	Resistor, 250,000 Ohm 1/4 W. Carb.			
34	W-27875	Resistor, 500,000 Ohm 1/4 W. Carb.			
35	ABCB				

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	-36	110
6U7G	Rectifier	6.3	174	110	—	0	—	—
6U7C	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	190	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	270	0	22	—	—
6K8G	Output	6.3	263	270	0	22	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—
6C5	Tuning Indicator	6.3	Variable	—	—	—	—	—

Power consumption approximately 90 watts at 117.5 volts.
Power output approximately 10 watts.
Voltage drop across speaker field 60 volts.

Fig. 4 Phonograph Pickup

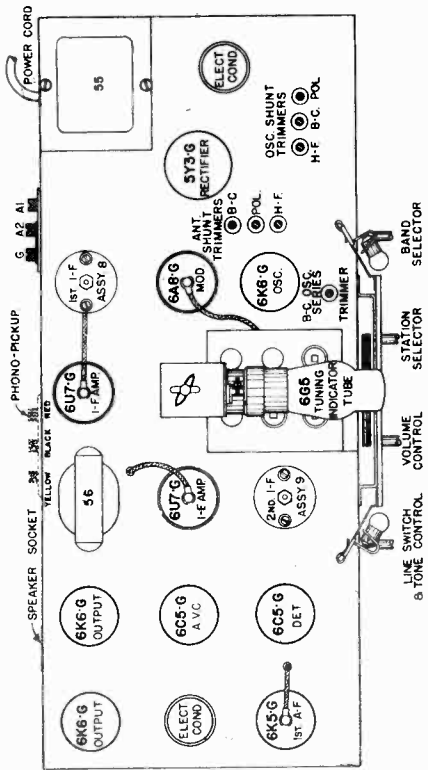
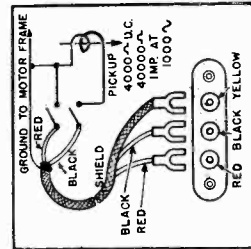


Fig. 2 Top View Model 1117

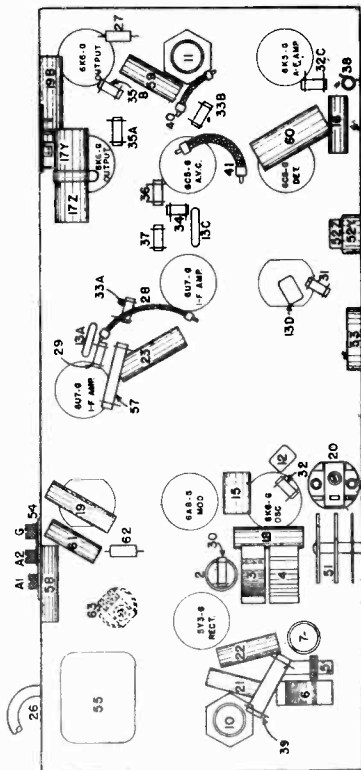


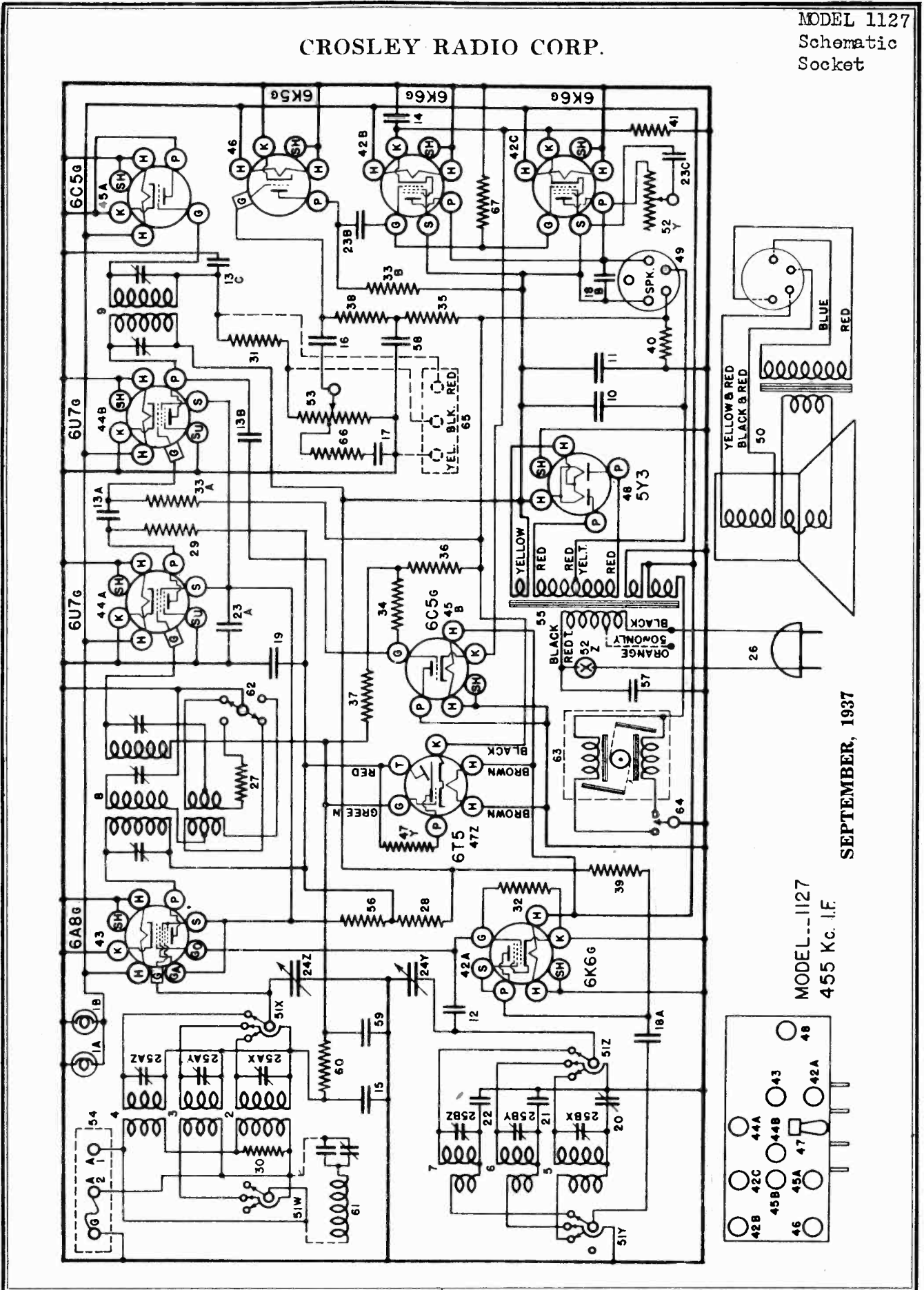
Fig. 3 Bottom View Model 1117

JULY, 1937

CHASSIS MODEL 1117

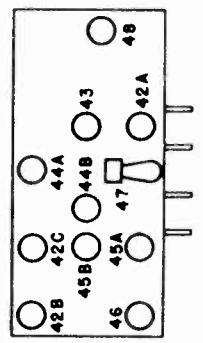
CROSLY RADIO CORP.

MODEL 1127
Schematic
Socket



SEPTEMBER, 1937

MODEL--1127
455 Kc. I.F.



MODEL 1127

Socket, Trimmers
Layout, Voltage

CROSLLEY RADIO CORP.

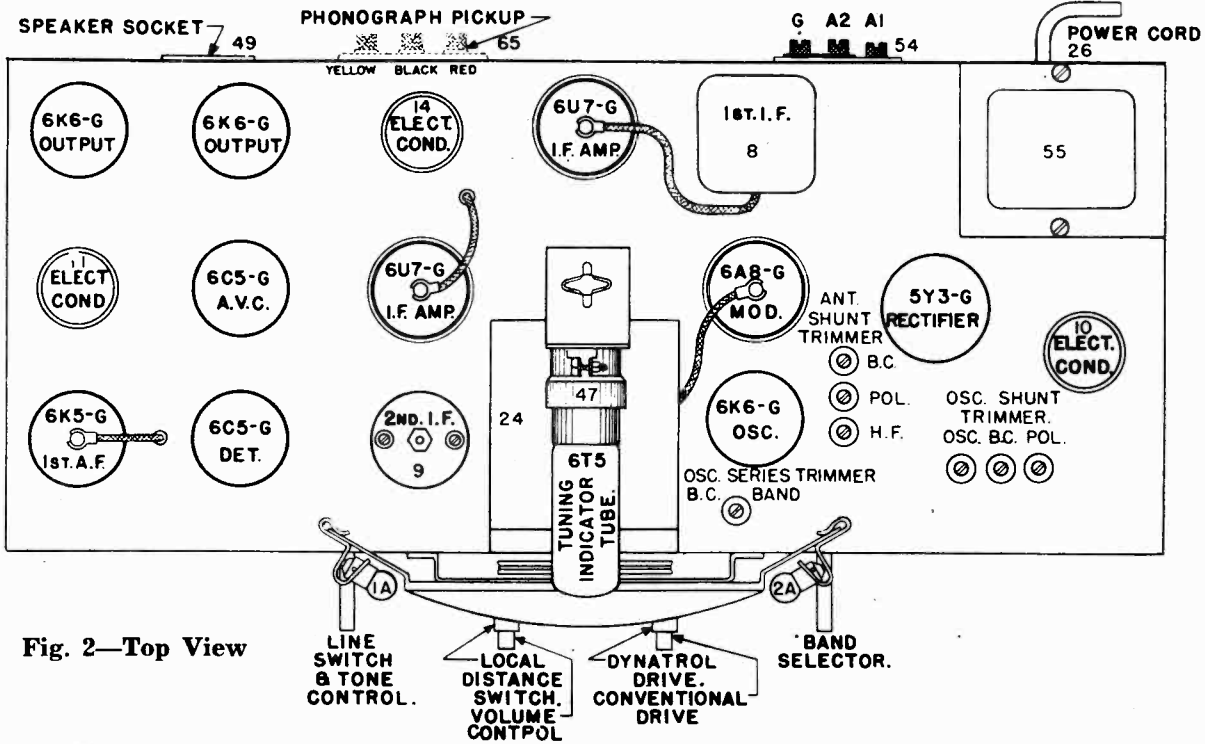


Fig. 2—Top View

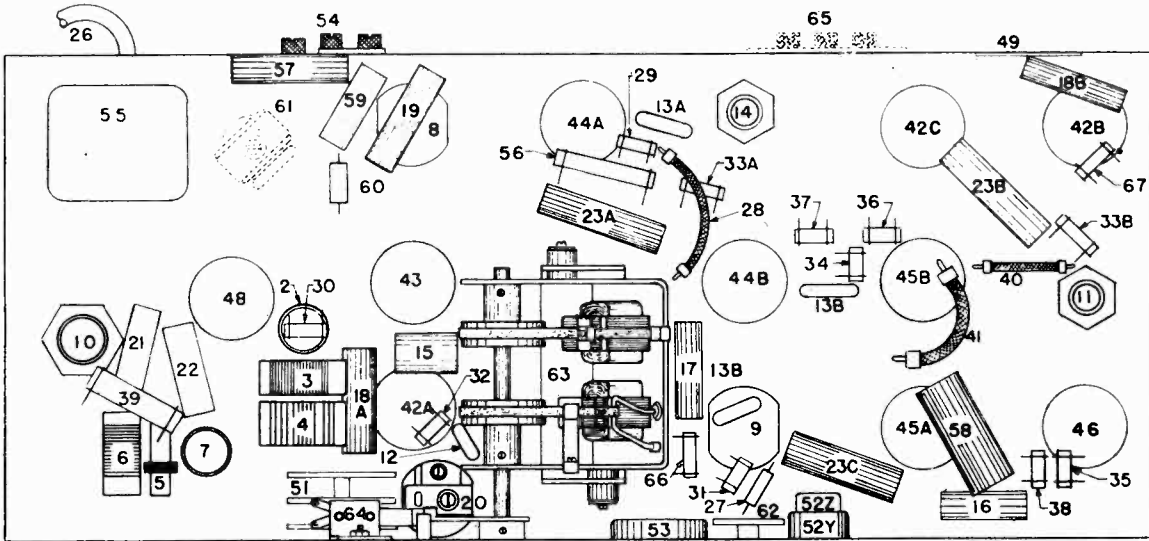


Fig. 3—Bottom View Model 1127

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	250	0	22	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—
6T5	Tuning Indicator	6.3	Variable	—	—	—	—	—

Power consumption approximately 90 watts at 117.5 volts. (Tuning Motor 50 Watts Additional)
Power output approximately 10 watts.
Voltage drop across speaker field 60 volts.

CROSLY RADIO CORP.

MODEL 1127
Motor Assembly
Transformer Data
Phono., Data

This model Crosley radio is an AC receiver designed for American and Foreign broadcast reception. Electric tuning is accomplished in this model by means of the Dynatrol motor which is a vibrating type. Other fea-

tures include electron ray tuning indicator, automatic volume control, Local-Distance switch and parallel pentode output. The tuning range is from 540 kilocycles to 22 megacycles and is divided into three bands as follows:

- 540-1850 Kilocycles or 555 162 Metres (American Broadcast Band)
- 1.9- 6.6 Megacycles or 158-45.5 Metres (Police and Amateur Band)
- 6.4- 22 Megacycles or 47-13.5 Metres (High Frequency or Short Wave Band).

SPECIAL POWER TRANSFORMER ADJUSTMENT

In localities where the voltage variation on 50 or 60 cycle power supply lines is greater than customary commercial limits, special 50-60 cycle power transformers are available. These transformers have a "high" and "low" voltage tap on the underside of the chassis. The "high" voltage lead (BLACK) and the "low" voltage lead (ORANGE) are connected to a terminal strip near the transformer.

The voltage range of the "low" tap of the 95-130 volt transformer is from 95 to 112½ volts and the "high" tap is from 112½ to 130 volts. The range of the "low" tap of the 190-260 volt transformer is from 190 to 225 volts and of the "high" tap is from 225 to 260 volts.

The accompanying illustration shows the connections for changing from high to low or low to high line voltage. Note the "jumper" wire which is attached to the terminal at which one side of the power cord is attached. The other end of this jumper wire should be connected to the ORANGE or BLACK lead of the transformer

primary, according to the line voltage the receiver is to be used on.

NOTE: Any change made in the power supply circuit of the receiver should be plainly stamped or otherwise permanently recorded on the rear of the chassis.

Circuit Description

Eleven tubes are employed in a superheterodyne circuit. The 6T5 electron ray tube is used for indicating exact tuning and is designated "IRIS TUNING INDICATOR." When a station is tuned in the greenish glow in the tube increases in width, forming a small circular shadow around the center disc. Only strong signals, however, will reduce the shadow to a very small circle.

The circuit consists of separate oscillator and modulator tubes, two stages of I-F amplification—the second of which is resistance coupled, separate AVC and detector diodes, two stages of audio amplification and power supply. The 1st I-F transformer is a triple-tuned unit, which in conjunction with the Local-Distance switch, controls the selectivity of the receiver. The speaker field is located in the negative leg of the power supply. The bias for all tubes except the output and AVC diode is developed across a 32 ohm resistor, item 40, located between the speaker field and ground.

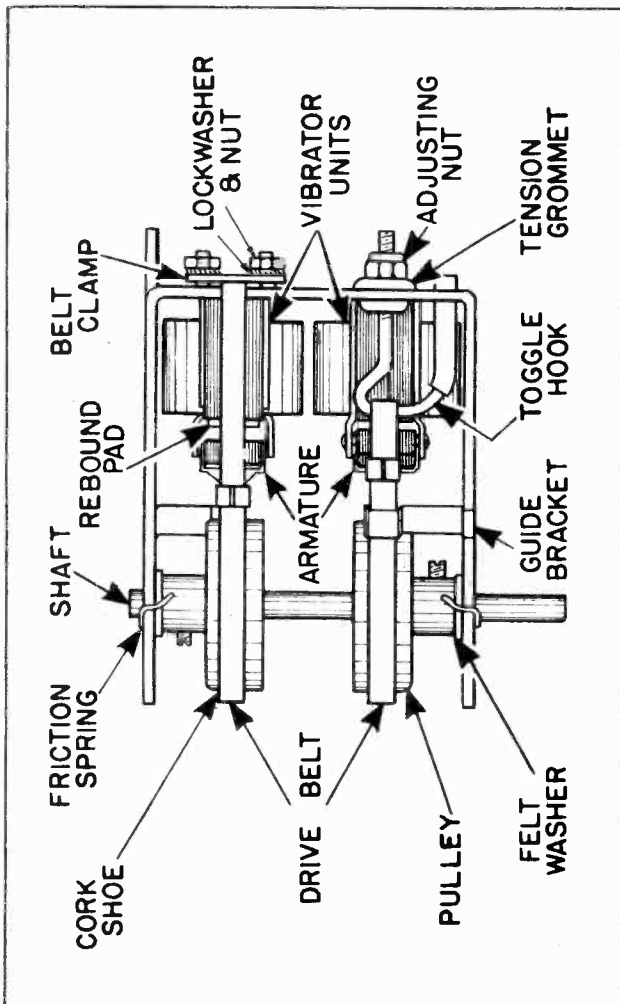


Fig. 5—Dynatrol Motor

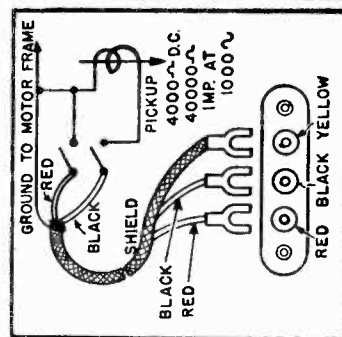
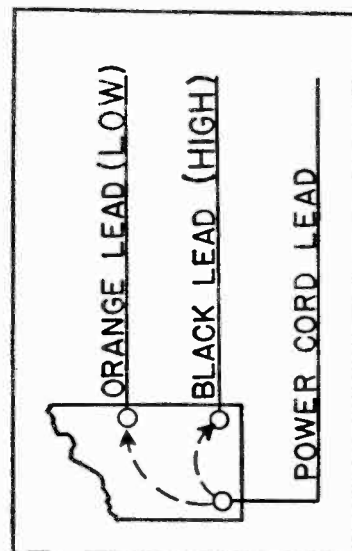


Fig 4—Phonograph Pickup

MODEL 1127

Alignment
Parts, Data

CROSLLEY RADIO CORP.

PARTS LIST—MODEL 1127

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1AB	43587	Dial Light 6.8 V.	43	G156	Socket Type 6A8
2	32000	Ant. Coil B. C.	44AB	G171	Socket Type 607
3	32000	Ant. Coil C.	45	G156	Socket Type 6A8
4	32000	Ant. Coil H. F.	46	G156	Socket Type 6A8
5	32002	Ant. Coil H. F.	47Z	W	Socket Type 875
6	32002	Osc. Coil P.O.	47Y	W	Resistor 1 Meg. in Socket
7	32002	Osc. Coil H. F.	48	G173	Socket Type 5Y3
8	32002	Osc. Coil H. F.	49	W	Speaker
9	G184	2nd I.F. Assy.	MG17	44099	Indic. Tube Bracket (Clamp Assy.)
10	W	Condenser 30 Mf. 350 V.	W	44137	Indic. Tube Mig. Brkt.
11	38057B	Condenser 40 Mf. 300 V.	W	44137	Indic. Tube Mig. Brkt.
12A	34002	Condenser .0005 Mf. Moulded	W	44350A	Speaker Spec. No. 1-D-1128
13B	34002	Condenser .0005 Mf. Moulded	50	—5719P18" W	V. C. & Cone Assy.
13C	34002	Condenser .0005 Mf. Moulded	51	44677	Field Coil
14	W	Condenser 50 Mf. 25 V.	52	44278	Output Transformer
15	W	Condenser 50 Mf. 25 V.	53	44278	Output Transformer (Card board)
16	W	Condenser .001 Mf. 400 V.	54	43578	Socket Plug Clamp
17	W	Condenser .006 Mf. 200 V.	55	43562	Band Selector Switch
18A	W	Condenser .004 Mf. 400 V.	56	44049A	Tone Control (100,000 Ohm)
18B	W	Condenser .004 Mf. 400 V.	57	44024B	Voice Switch (1 Meg.)
19	W	Condenser .001 Mf. 400 V.	58	44674	Ant. & Grid Term. Assy.
20	W	Condenser .001 Mf. 400 V.	59	28719	Power Trans. 110 V. 60 Cy.
21	G23	Condenser .001560 Mf.	60	44611	Power Trans. 110 V. 50 Cy.
22A	W	Condenser 1 Mf. 400 V.	61	44751	Power Trans. 110 V. 50 Cy.
23A	W	Condenser 1 Mf. 400 V.	62	44728	Power Trans. 110 V. 25 Cy.
24	C40	2 Sect. Var. Tuning Cond.	63	44730	Power Trans. 220 V. 25 Cy.
		Dial Face (Glass)	64	—4821C	Resistor 10,000 Ohm 1/2 W.
		Poiner (Pointer, Mfg.)	65	30805	Carb.
		Dial Mask (Metal Disc)	66	34712	Condenser 25 Mf. 160 V.
		(Pointer) Shakedown Washer	67	28621	Condenser 100,000 Ohm 1/3 W.
		Drive Shaft Bracket	68	35600	Ins.
		Drive Shaft & Coupling	69	G164	Ins. Trap
		Pulley & Hub Assy.	70	44796	Switch (Local Distance)
		Spring Cord & Stub Assy.	71	44470	Toggle L.-D. Sw. (Female)
		Dial Support Arc	72	44470	Toggle L.-D. Sw. (Male)
		Dial Support Arc	73	G1	Dynamotor Motor
		Power and Plug	74	44416	Set Screw (Pulley)
		Resistor 2,000 Ohm 1/4 W.	75	44382	Friction Spring (Shaft)
		Resistor 5,000 Ohm 1/2 W.	76	33622	Shaft (Motor)
		Carb.	77	44183	Shaft (Motor) (Hook)
		Carb.	78	44701	Grommet (Anchor Hook)
		Carb.	79	24074	Guide Brkt. (Bell)
		Carb.	80	44384	Stop Nut (Anchor Ret.)
		Carb.	81	44384	Shim 1/4" (Anchor Hook)
		Carb.	82	43218	Vibrator Drive Unit (Right or Left)
		Carb.	83	44776	Motor Switch Assembly
		Carb.	84	44776	Motor Term. Board
		Carb.	85	21875	Resistor 100,000 Ohm 1/3 W.
		Carb.	86	21875	Resistor 200,000 Ohm 1/3 W.
		Carb.	87	34018	Carb.
		Carb.		44907B	Escutcheon (Dial)
		Carb.		44202B	Escutcheon (Top Indic. Tube)
		Carb.		43553	Resistor 100,000 Ohm 1/3 W.
		Carb.		45087	Resistor 100,000 Ohm 1/3 W.
		Carb.		44386B	Carb.
		Carb.		44387B	Carb.
		Carb.		44381B	Carb.
		Carb.		44432	Carb.
		Carb.		45082	Carb.
		Carb.		44510	Carb.
		Carb.		44865A	Carb.
		Carb.		44866	Carb.
		Carb.		G13	Carb.

tool should be turned to the TREBLE position (counter clockwise) and the tuning condenser should be turned to the minimum capacity position. The filament voltage should be measured with an accurate line voltage A. C. voltmeter (approximately 0-10 volts). Reading may vary plus or minus 10% of values given.

SOCKET VOLTAGES

The tube socket voltages are measured from the tube socket contacts to the chassis with 1000 ohm per volt, 500 volt D. C. voltmeter (except filaments) with the receiver in operating condition and no signal input. The volume control should be turned full on, the tone control should be turned full on, the tone control should be turned full on, the tone control should be turned full on.

200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

NOTE: When shunt aligning the Police and High Frequency Bands, care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (D) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2800 kilocycles in the Police Band and at 7,000 kilocycles in the High Frequency Band may be compensated for by slight re-positioning of the grid lead of the antenna coil in the Band affected.

Item	Part No.	Description
25	44185	Series Align. 600 Kilocycles
26	44185	Series Align. 600 Kilocycles
27	44185	Series Align. 600 Kilocycles
28	44185	Series Align. 600 Kilocycles
29	44185	Series Align. 600 Kilocycles
30	44185	Series Align. 600 Kilocycles
31	44185	Series Align. 600 Kilocycles
32	44185	Series Align. 600 Kilocycles
33A	44185	Series Align. 600 Kilocycles
33B	44185	Series Align. 600 Kilocycles
34	44185	Series Align. 600 Kilocycles
35	44185	Series Align. 600 Kilocycles
36	44185	Series Align. 600 Kilocycles
37	44185	Series Align. 600 Kilocycles
38	44185	Series Align. 600 Kilocycles
39	44185	Series Align. 600 Kilocycles
40	44185	Series Align. 600 Kilocycles
41	44185	Series Align. 600 Kilocycles
42A	44185	Series Align. 600 Kilocycles
42B	44185	Series Align. 600 Kilocycles

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.

DYNAMOTOR MOTOR

Should either vibrator unit of the Dynamotor motor need readjustment, the following procedure should be followed:

(a) Loosen adjusting nut until the gap between the stator and "E" laminations is approximately 3/16".

(b) The belt should be just loose enough that the drive shaft can be rotated freely between the thumb and forefinger.

(c) With the motor running, tighten the adjusting nut until chatter stops. Care should be taken, however, not to tighten this adjustment too tight as an undesirable condition will be reached wherein a slight change may result in a locked motor.

(d) Check the time required for the dial pointer to travel from each end of the dial to the other. The adjusting screws should be set so that approximately eight seconds are required in each direction.

CONNECTING OUTPUT METER
Connect the output meter to the plates of the two 6K6C output tubes. Be certain that the meter is protected from D. C. by a condenser (1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning The I-F Amplifier To 455 Kilocycles.
(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7C I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground lead of the receiver. REFER TO THE GENERATOR LEADS AT THE REAR FOR POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the left (TREBLE), and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Turn the Local-Distance switch to the "Distance" position.

(e) Set the signal generator to 455 kilocycles.

(f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output. DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8C TUBE.

(g) Transfer the signal generator lead to the top cap of the 6A8C tube, leaving the tube's grid clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. (Do not force adjustment screws.)

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

Aligning The R-F Amplifier.
When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a

Item	Part No.	Description
31	182	Cap. Signal
32	182	Cap. Signal
33	182	Cap. Signal
34	182	Cap. Signal
35	182	Cap. Signal
36	182	Cap. Signal
37	182	Cap. Signal
38	182	Cap. Signal
39	182	Cap. Signal
40	182	Cap. Signal
41	182	Cap. Signal
42	182	Cap. Signal

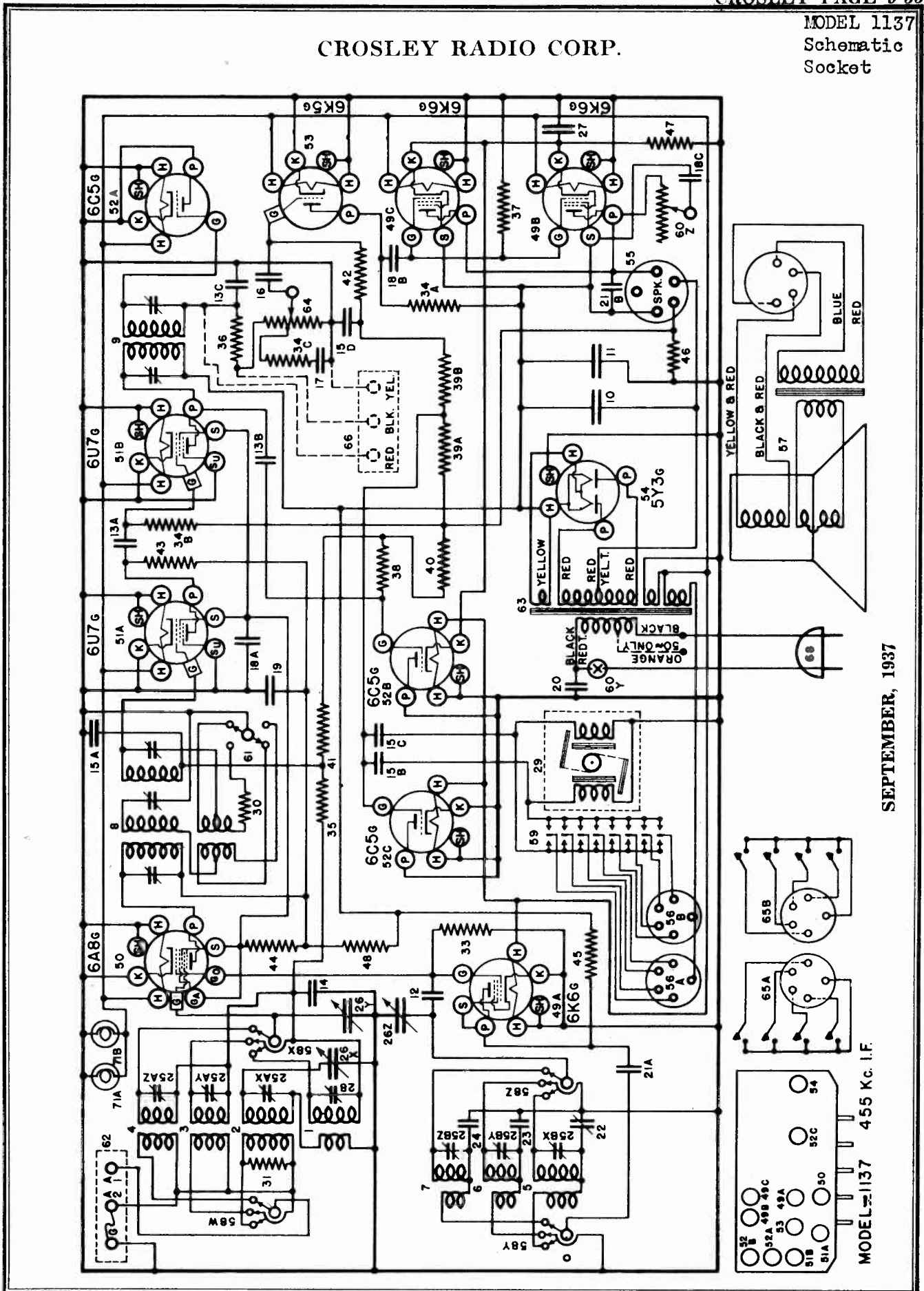
Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram. Item 61, Fig. 1.

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 200 mmf. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering

CROSLY RADIO CORP.

MODEL 1137
Schematic
Socket



SEPTEMBER, 1937

MODEL 1137
 Socket, Trimmers
 Layout, Voltage

CROSLLEY RADIO CORP.

Fig. 2 Top View Model 1137

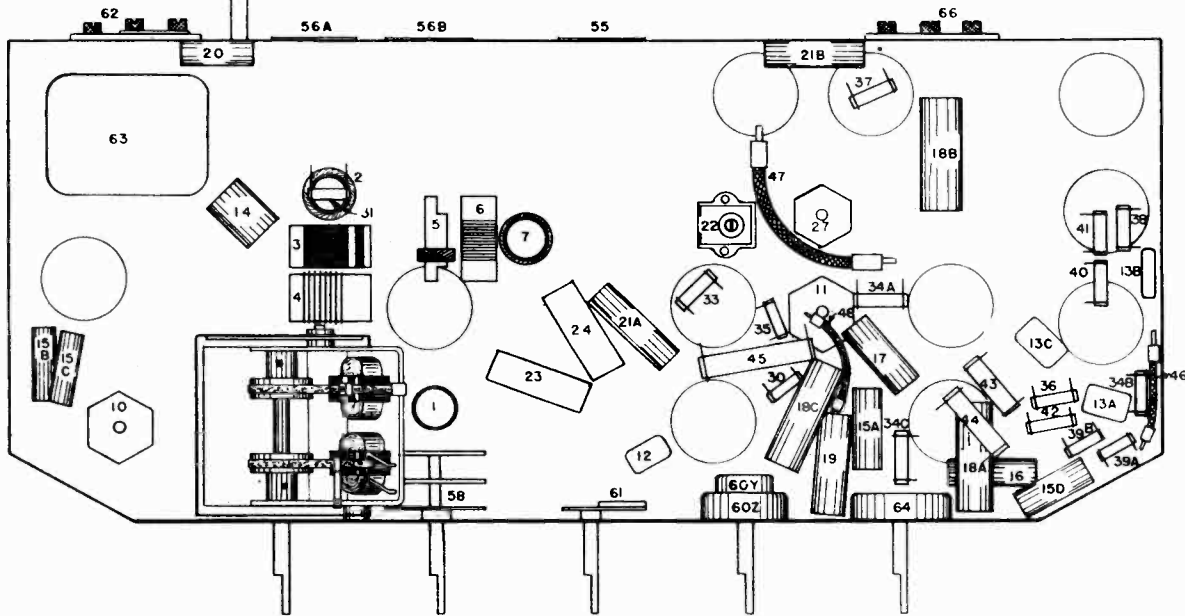
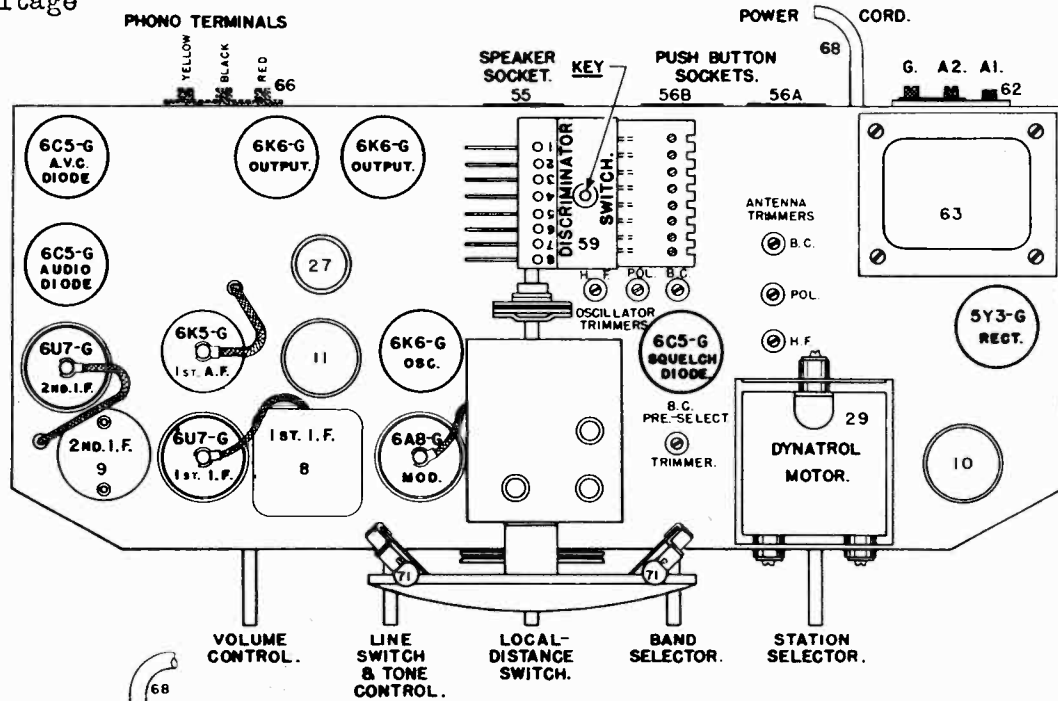


Fig. 3 Bottom View Model 1137

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	270	0	22	—	—
6C5G	"Squelch"	6.3	0	—	—	0	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—

Power consumption approximately 90 watts at 117.5 volts.
 Power output approximately 10 watts.
 Voltage drop across speaker field 60 volts.

CROSLLEY RADIO CORP.

MODEL 1137
 Motor Assembly
 Tuner, Phono.
 Transformer Data

This model Crosley radio is an 11-tube AC receiver designed for American and Foreign broadcast reception. It incorporates such features as push-button electric tuning, automatic volume control, Local-Distance switch

and parallel pentode output. The tuning range is from 540 kilocycles to 22 megacycles and is divided into three bands as follows:

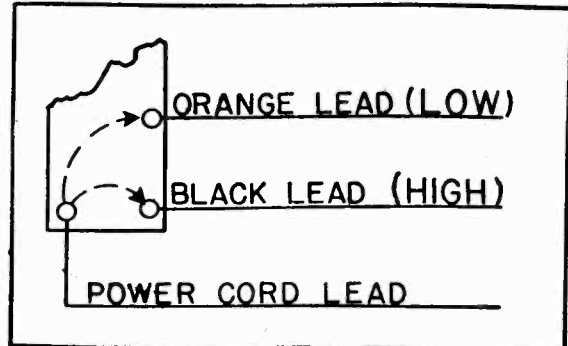
- 540-1850 Kilocycles or 555-162 Metres (American Broadcast Band)
- 1.9- 6.6 Megacycles or 158-45.5 Metres (Police & Amateur Band)
- 6.4- 22 Megacycles or 47-13.5 Metres (High Frequency or Foreign Band)

SPECIAL POWER TRANSFORMER ADJUSTMENT

In localities where the voltage variation on 50 or 60 cycle power supply lines is greater than customary commercial limits, special 50-60 cycle power transformers are available. These transformers have a "high" and "low" voltage tap on the under side of the chassis. The "high" voltage lead (BLACK) and the "low" voltage lead (ORANGE) are connected to a terminal strip near the transformer.

The voltage range of the "low" tap of the 95-130 volt transformer is from 95 to 112½ volts and of the "high" tap is from 112½ to 130 volts. The range of the "low" tap of the 190-260 volt transformer is from 190 to 225 volts and of the "high" tap is from 225 to 260 volts.

The accompanying illustration shows the connections for changing from high to low or low to high line vol-



tage. Note the "jumper" wire which is attached to the terminal at which one side of the power cord is attached. The other end of this jumper wire should be connected to the ORANGE or BLACK lead of the transformer primary, according to the line voltage the receiver is to be used on.

NOTE: Any change made in the power supply circuit of the receiver should be plainly stamped or otherwise permanently recorded on the rear of the chassis.

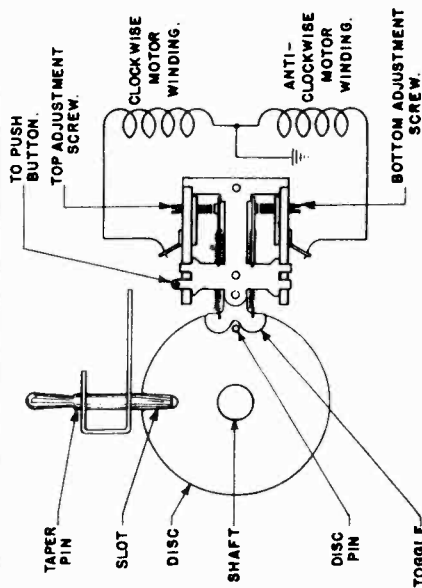


Fig. 6

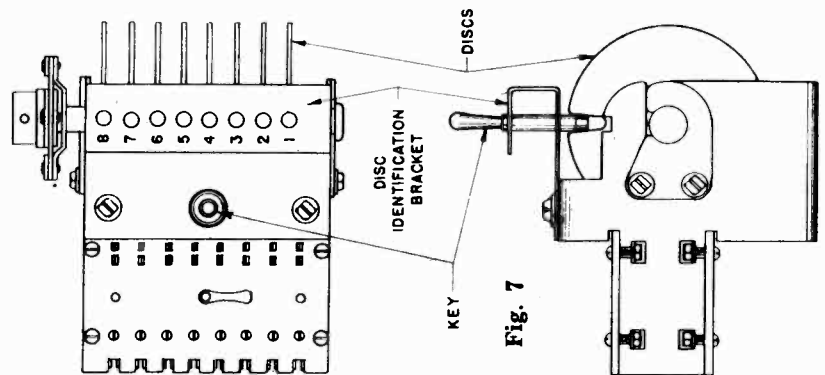


Fig. 7

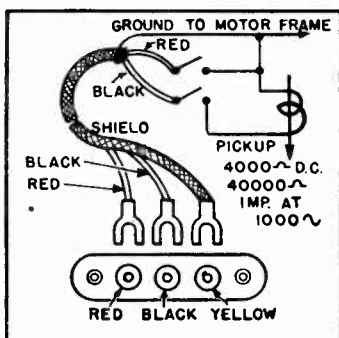


Fig. 4 Phonograph Pickup

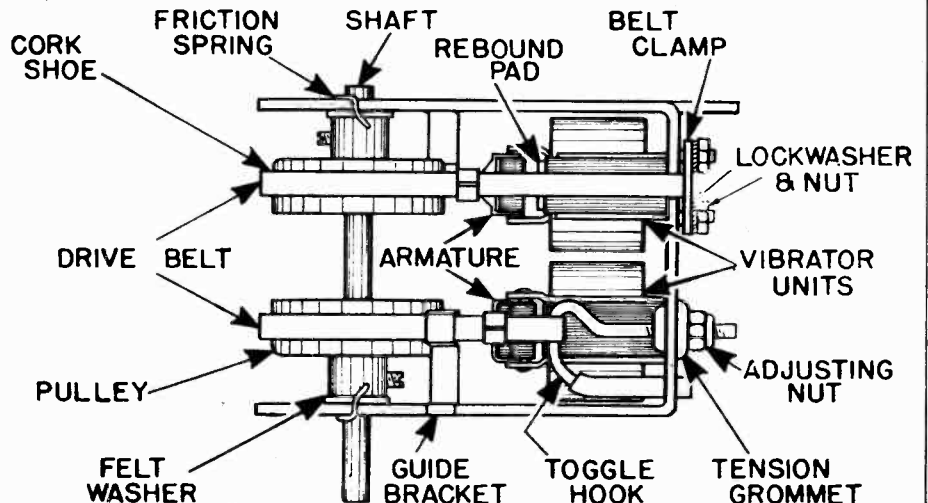


Fig. 5

