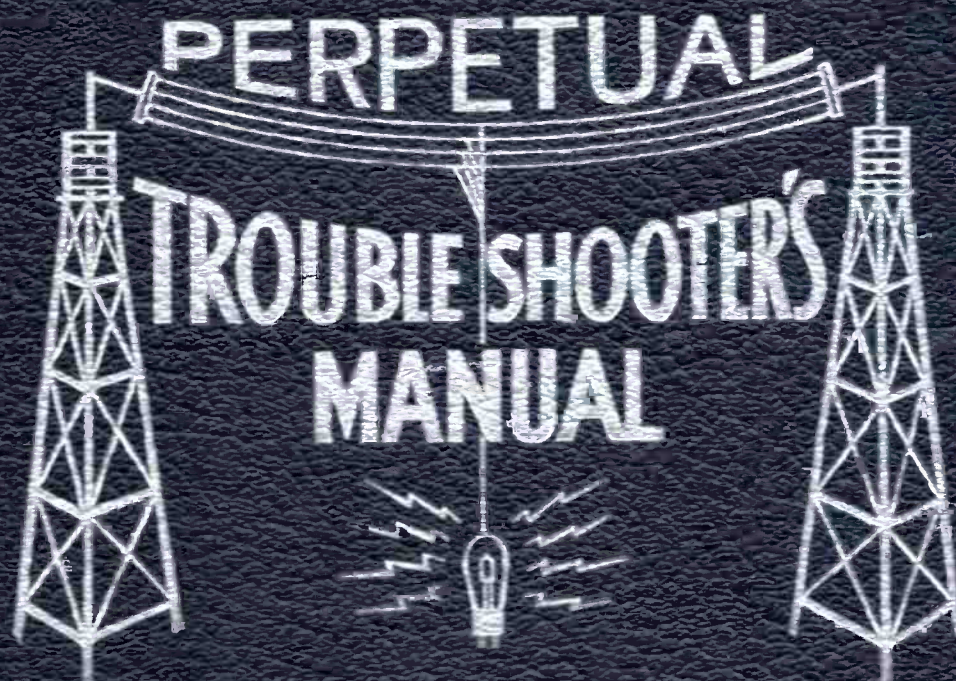


VOLUME VI



JOHN F. RIDER

**PERPETUAL
TROUBLE SHOOTER'S MANUAL**

VOLUME VI

by

JOHN F. RIDER

Published by

JOHN F. RIDER

1440 Broadway

New York City

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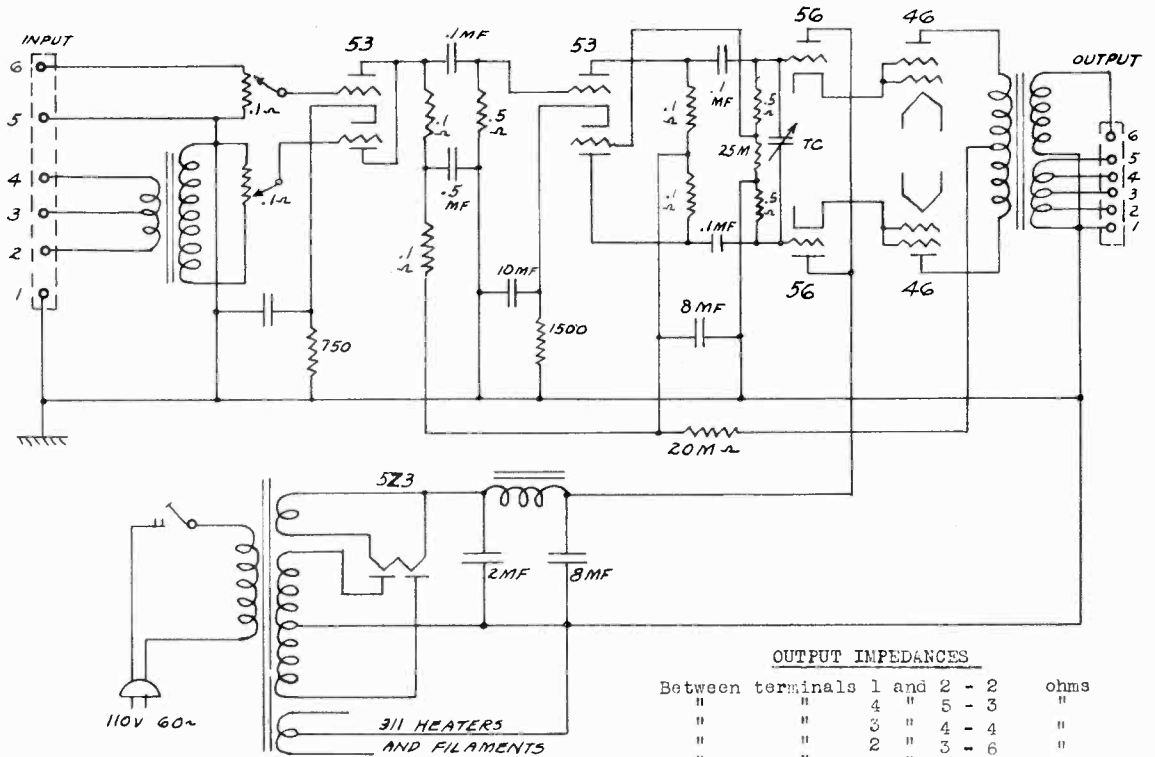
Their absolute supremacy as sources of accurate—complete and detailed radio service data is established by their use by the world-famous tube manufacturing organizations, such as E. T. Cunningham, Inc., National Union Radio Corp., RCA Radiotron, Inc., Arcturus Radio Tube Co., Raytheon Production Corp., Hygrade Sylvania Corp.—the most famous service instrument manufacturers, like Weston, Hickok, Readrite and Supreme and their use and recommendation by the world's leading radio receiver manufacturers.

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ACRATEST PRODUCTS

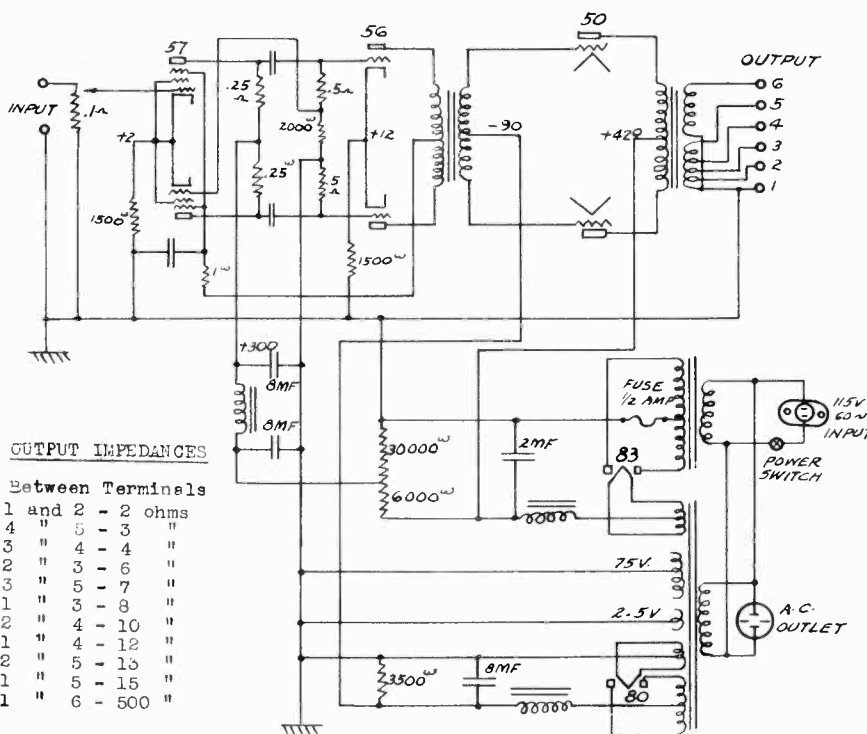
MODEL 37
 MODELS 196,197
 Schematics
 Impedances



OUTPUT IMPEDANCES

Between terminals	1 and 2	3	4	5	6	ohms
"	"	4	"	5	3	"
"	"	2	"	3	4	"
"	"	3	"	5	7	"
"	"	1	"	3	8	"
"	"	2	"	4	10	"
"	"	1	"	4	12	"
"	"	2	"	5	13	"
"	"	1	"	5	15	"
"	"	1	"	6	500	"

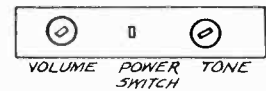
MODEL 37 AMPLIFIER



OUTPUT IMPEDANCES

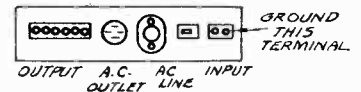
Between Terminals	1 and 2	3	4	5	6	ohms
"	"	4	"	5	3	"
"	"	2	"	3	4	"
"	"	3	"	5	7	"
"	"	1	"	3	8	"
"	"	2	"	4	10	"
"	"	1	"	4	12	"
"	"	2	"	5	13	"
"	"	1	"	5	15	"
"	"	1	"	6	500	"

FRONT OF AMP.



VOLUME POWER TONE SWITCH

REAR



OUTPUT A.C. AC INPUT GROUND THIS TERMINAL OUTLET LINE

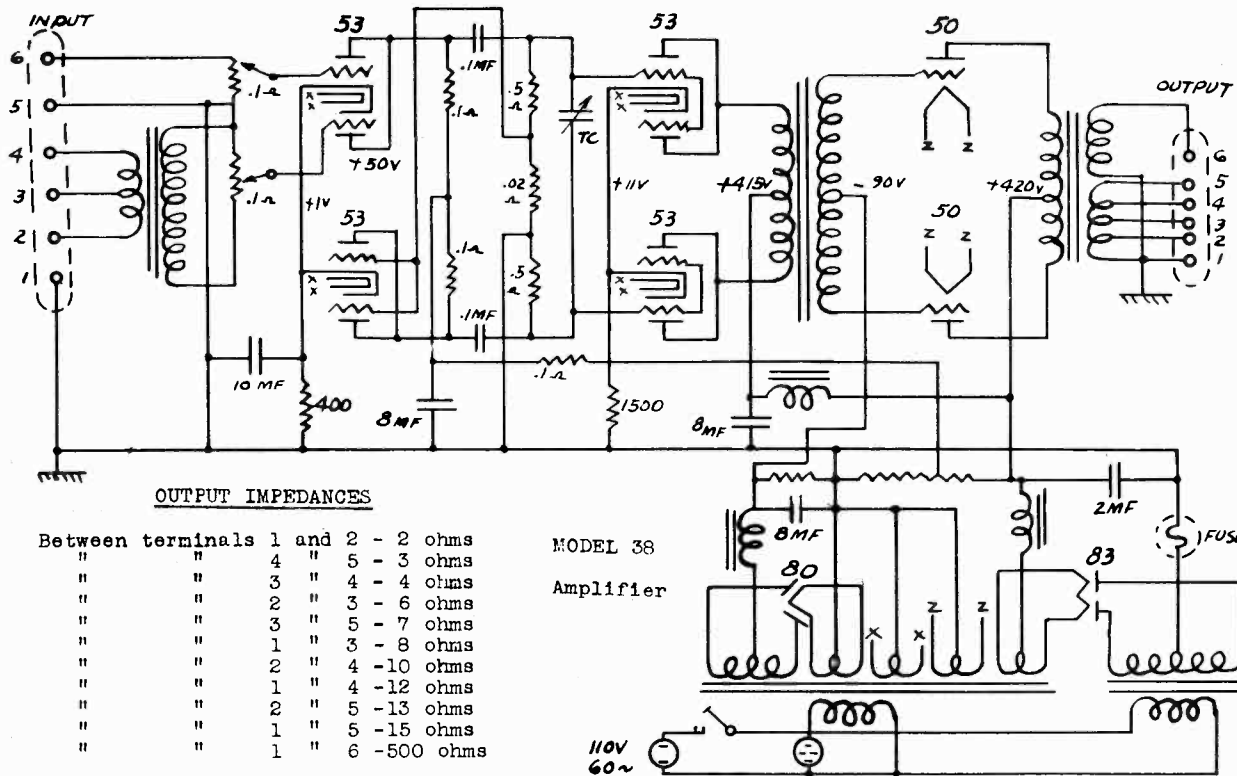
AC OUTLET IS CONTROLLED BY POWER SWITCH AND CAN BE USED FOR AC SPEAKERS, TUNERS, ETC.

11/7/34 REVISED

30 Watt AMPLIFIERS
 MODEL 196 115 VOLTS
 MODEL 197 230 VOLTS

MODEL 38
 MODEL S 198,199
 Schematics
 Impedances

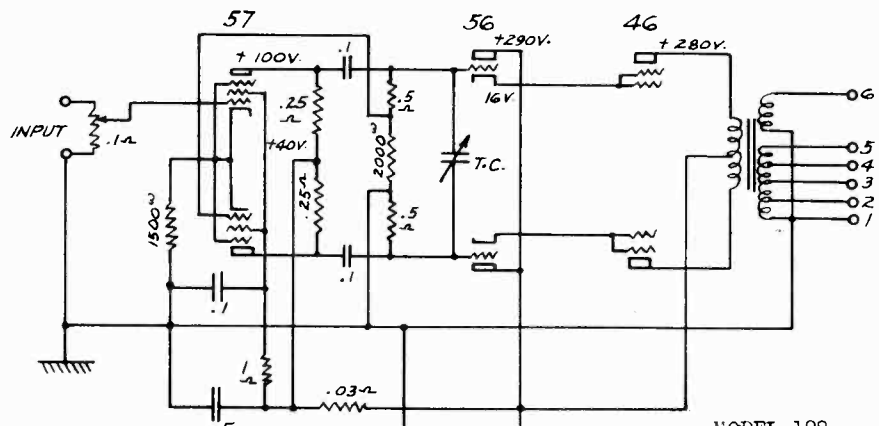
ACRATEST PRODUCTS



OUTPUT IMPEDANCES

Between terminals 1 and 2	2	-	2	ohms
" " 4	5	-	3	ohms
" " 3	4	-	4	ohms
" " 2	3	-	6	ohms
" " 3	5	-	7	ohms
" " 1	3	-	8	ohms
" " 2	4	-	10	ohms
" " 1	4	-	12	ohms
" " 2	5	-	13	ohms
" " 1	5	-	15	ohms
" " 1	6	-	500	ohms

MODEL 38
 Amplifier

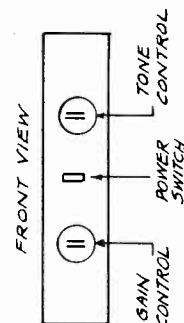
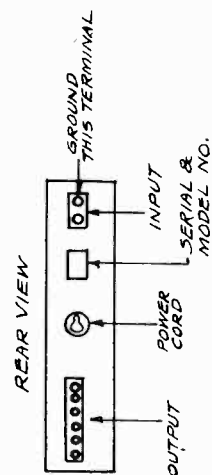
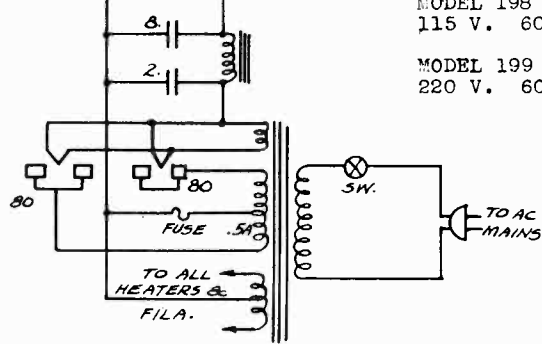


OUTPUT IMPEDANCES

Between Terminals 1 and 2	2	-	2	ohms
4	5	-	3	"
3	4	-	4	"
2	3	-	6	"
3	5	-	7	"
1	3	-	8	"
2	4	-	10	"
1	4	-	12	"
2	5	-	13	"
1	5	-	15	"
1	6	-	500	"

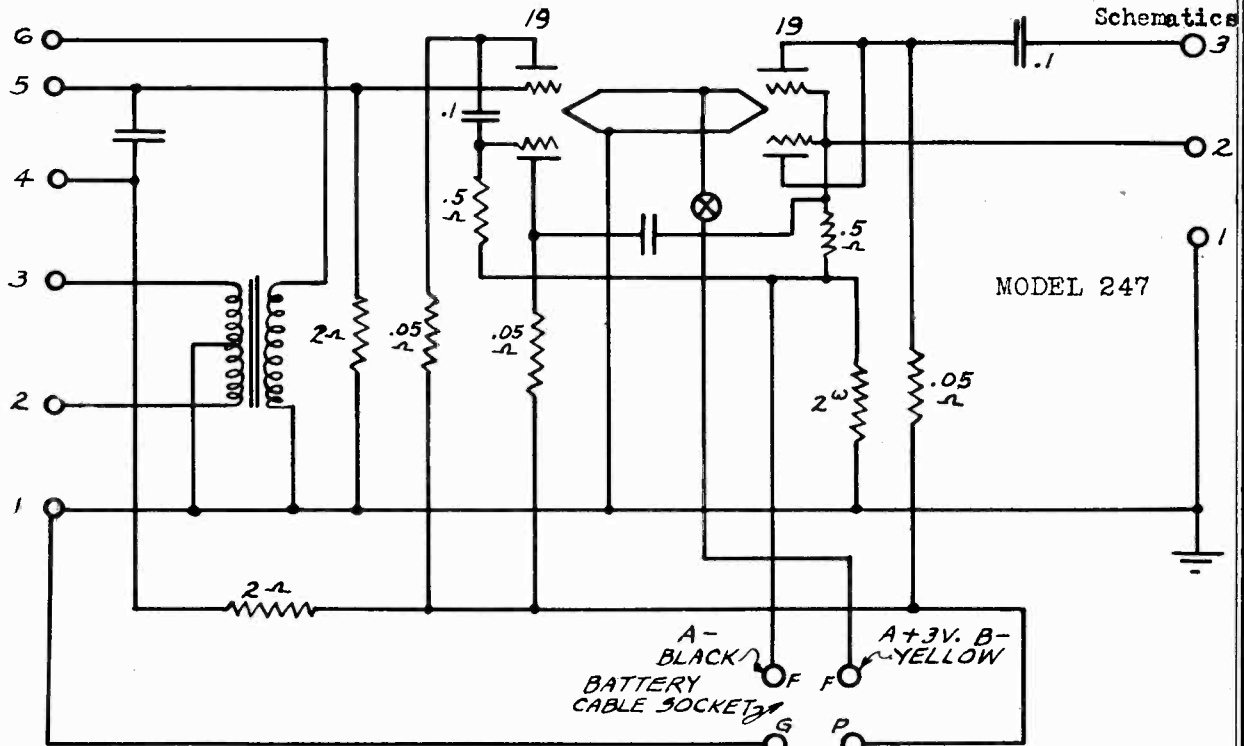
MODEL 198
 115 V. 60 CPS

MODEL 199
 220 V. 60 CPS



ACRATEST PRODUCTS

MODEL 247
MODEL 728
Schematics



INPUT CONNECTIONS:-

- 1 & 2 200 ω
- 2 & 3 500 ω
- 1 & 4 PHOTO CELL OR COND. MIC.
- 1 & 5 CRYSTAL MIC. HI-IMPEDANCE

PICK UP OR RADIO TUNER

WHITE (EXTERNAL GROUND)

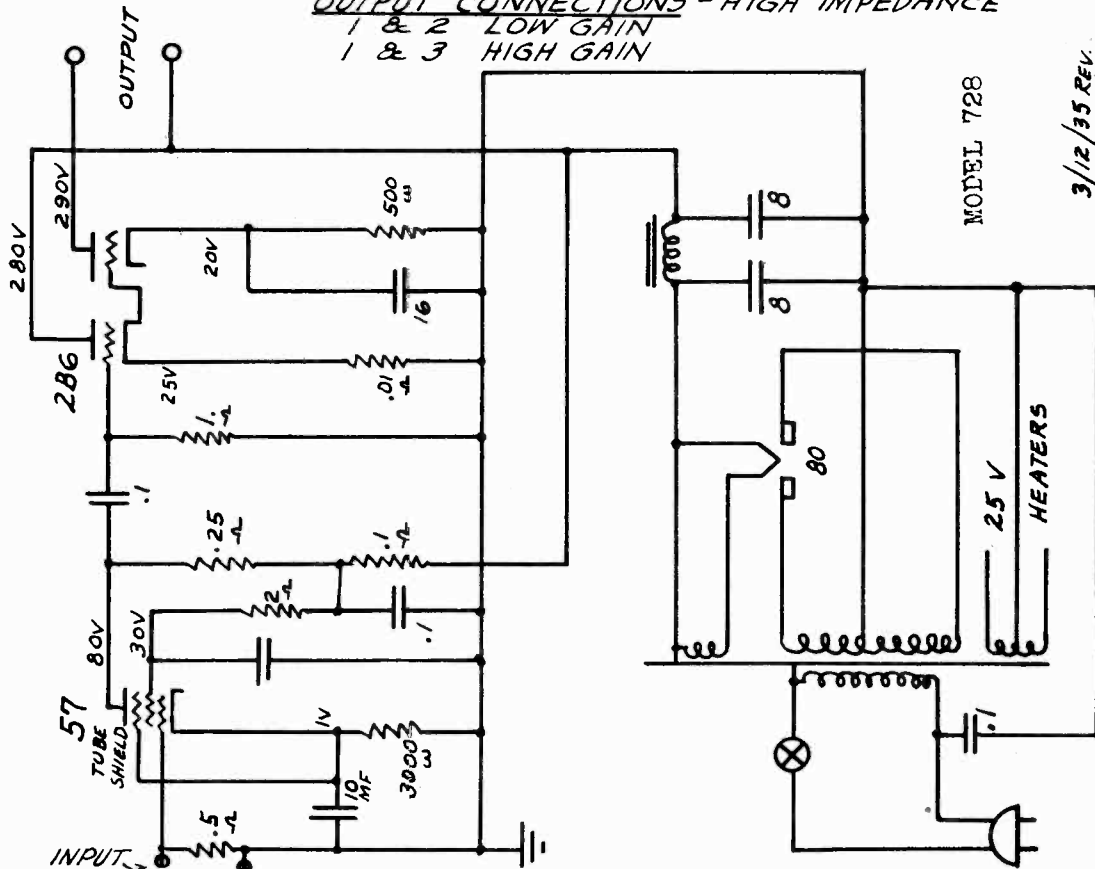
RED (B + 90 -135)

NOTE:-

TERMINALS 5 & 6, MUST BE SHORT CIRCUITED WHEN USING 200 ω OR 500 ω INPUT.

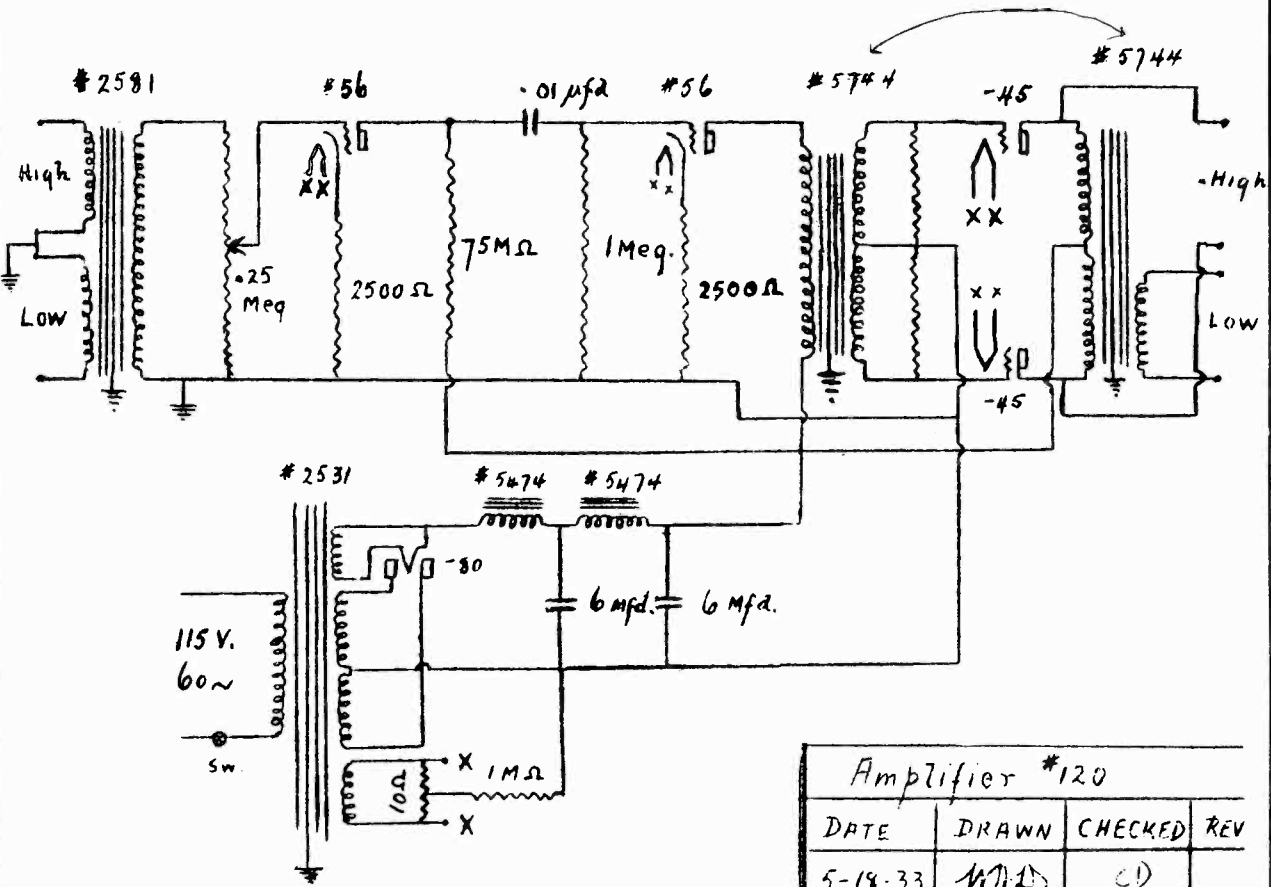
OUTPUT CONNECTIONS - HIGH IMPEDANCE

- 1 & 2 LOW GAIN
- 1 & 3 HIGH GAIN



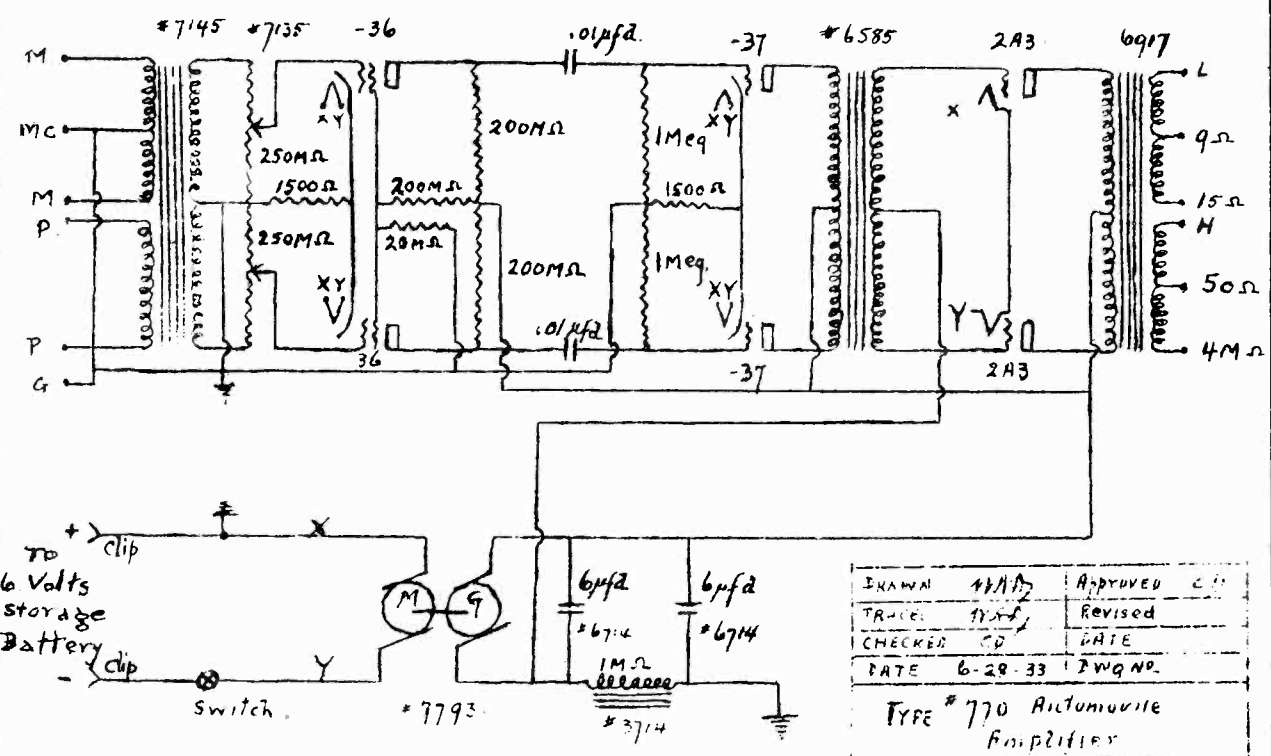
MODEL 120
MODEL 770
Schematics

ACRATEST PRODUCTS



Amplifier #120

DATE	DRAWN	CHECKED	REV
5-18-33	W.A.D.	CD	



DRAWN	W.A.D.	APPROVED	CD
TRACE	W.A.D.	REVISED	
CHECKED	CD	DATE	
DATE	6-28-33	DWG. NO.	
TYPE #770 Audiomute Amplifier			

Air King

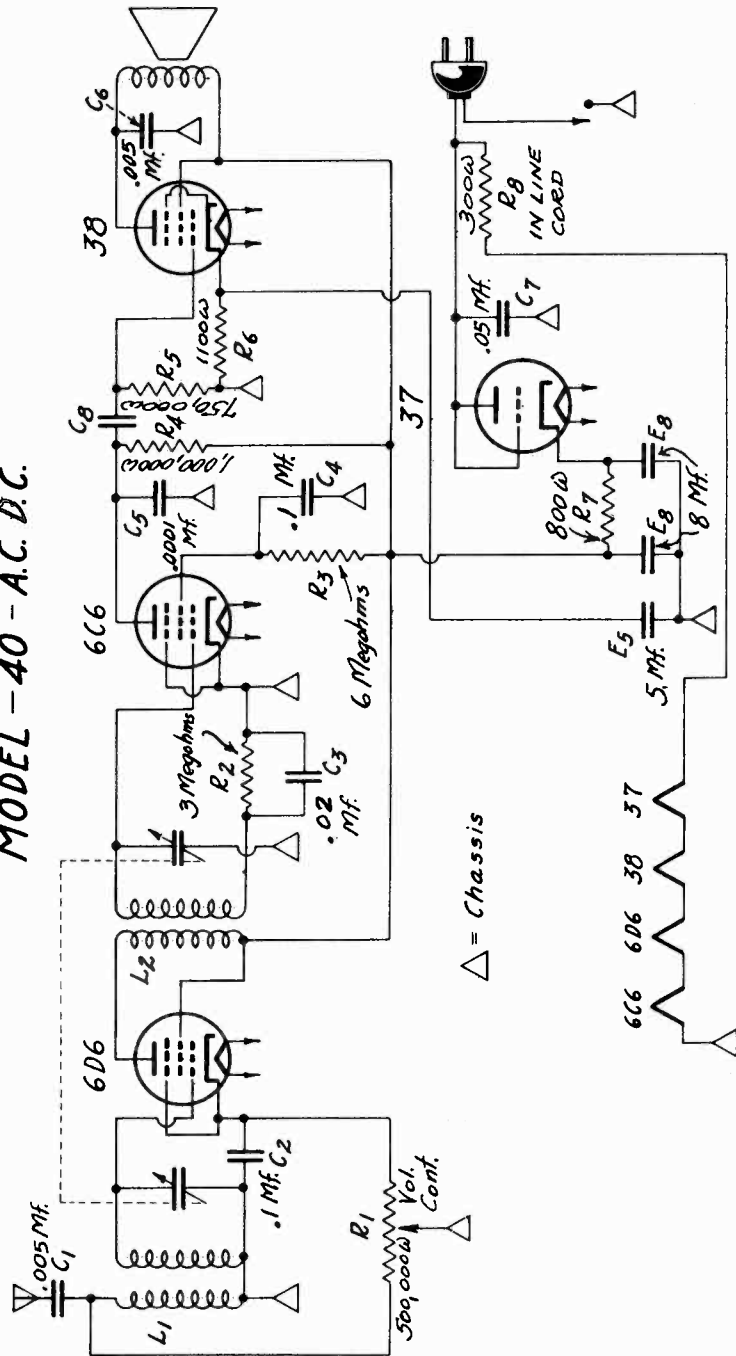
MODEL 40

MODEL 50

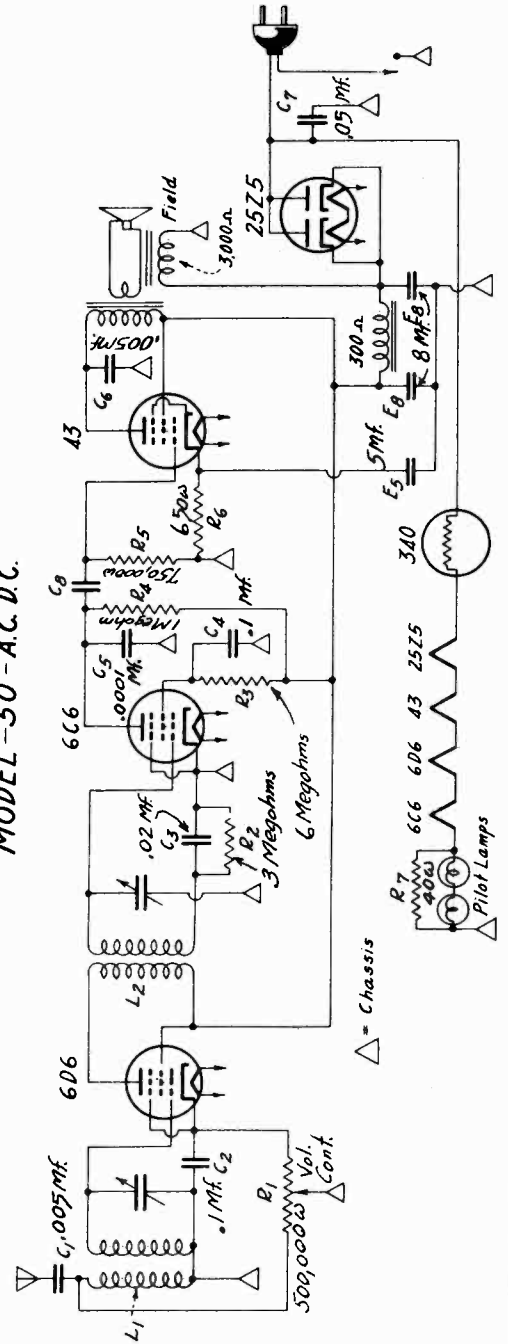
Schematics

AIR KING PRODUCTS CORP.

MODEL - 40 - A.C. D.C.



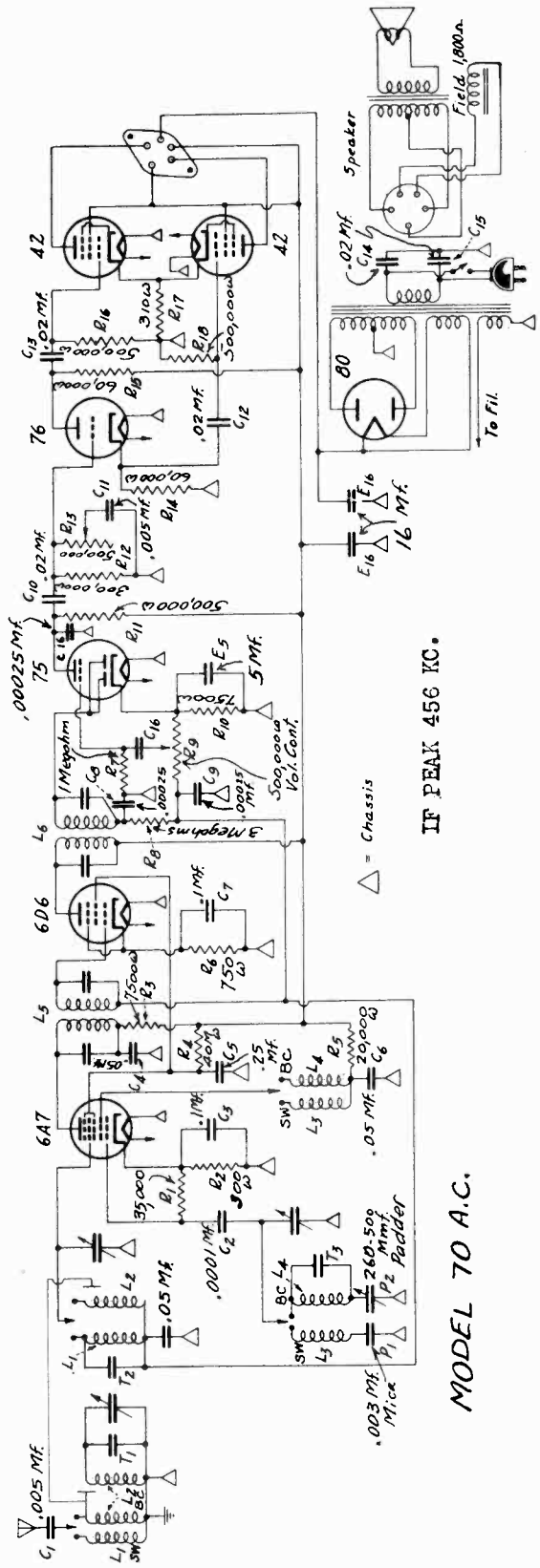
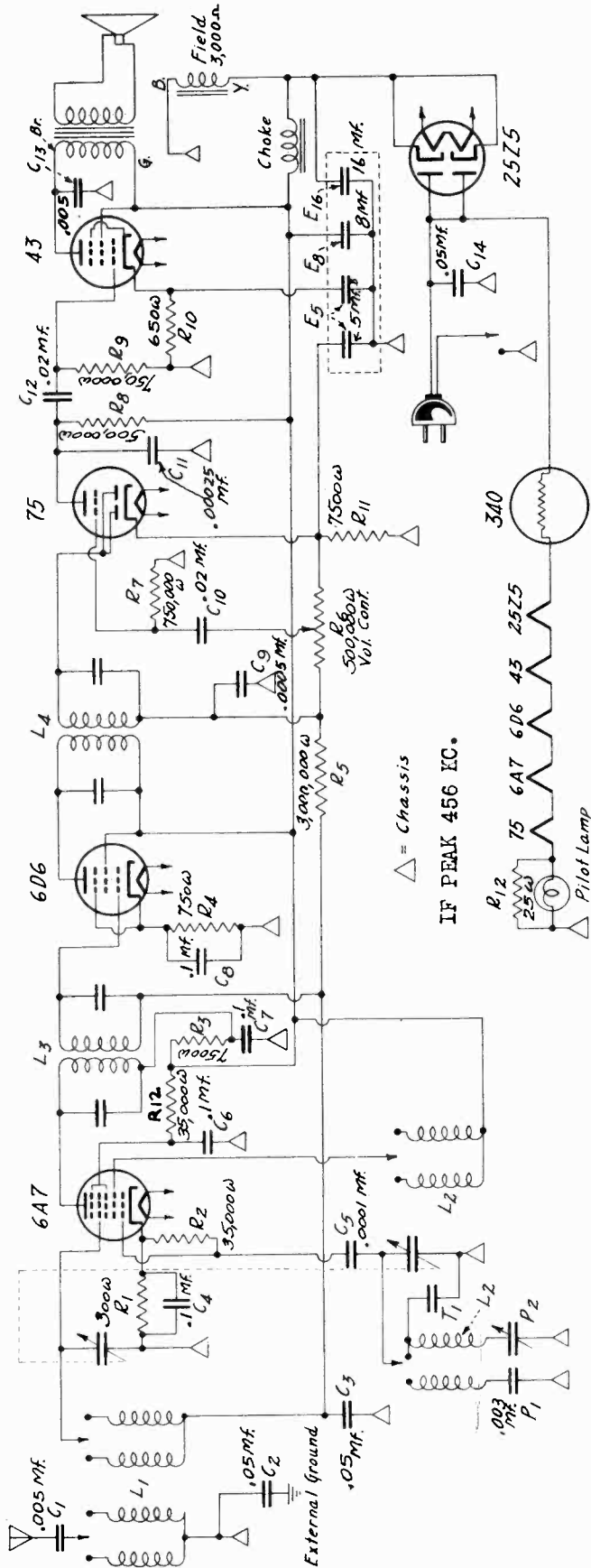
MODEL - 50 - A.C. D.C.



MODEL 66
MODEL 70
Schematics

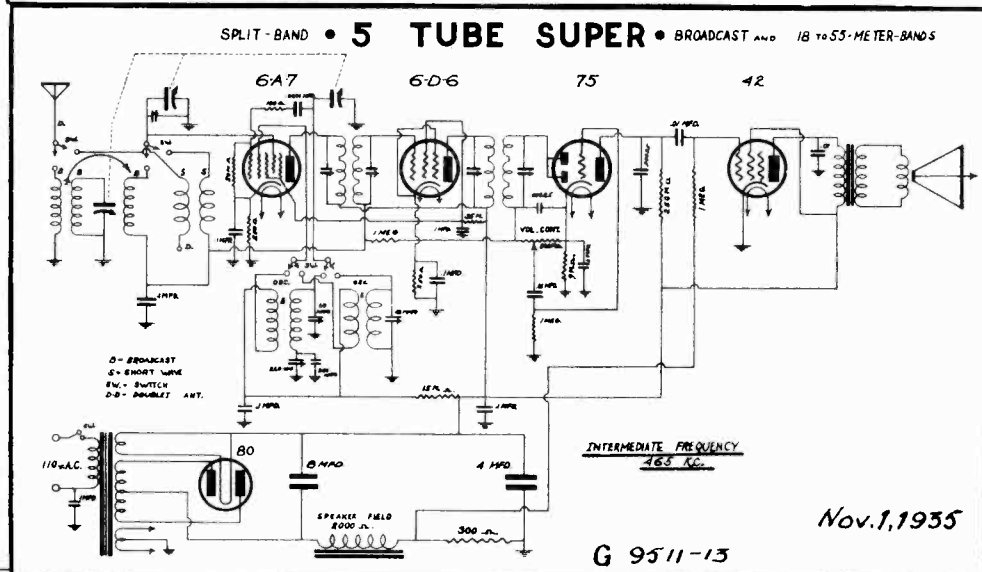
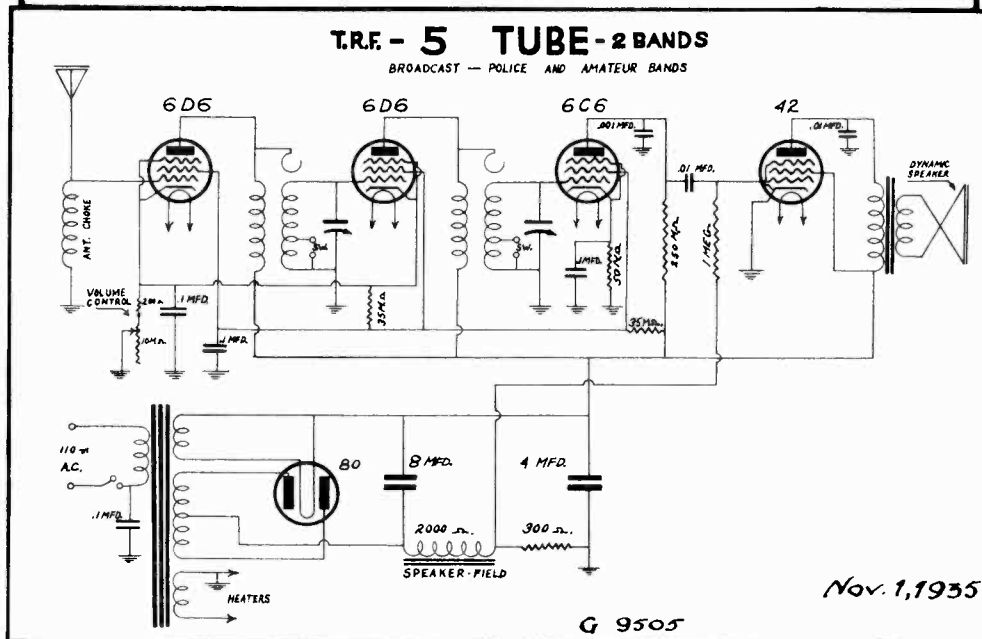
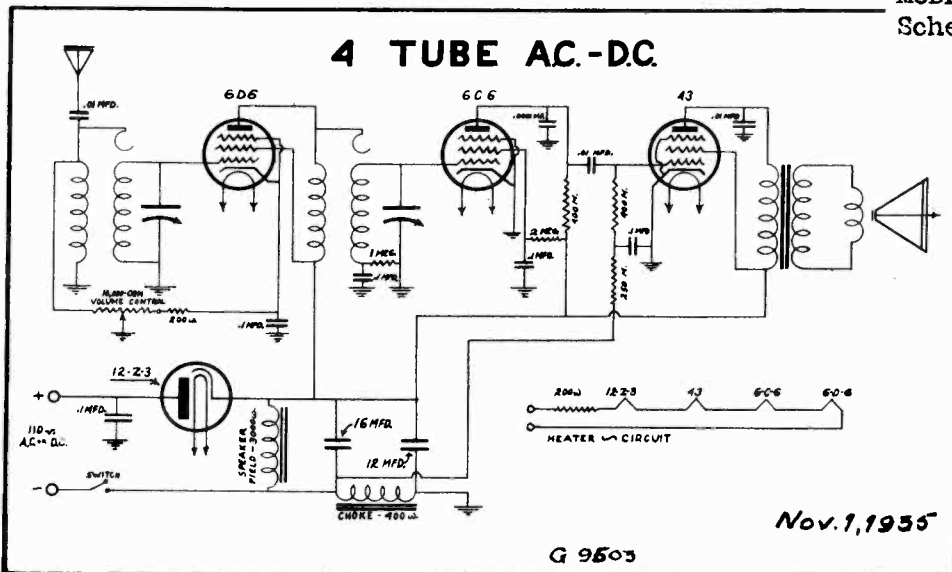
AIR KING PRODUCTS CORP.

MODEL - 66 - A.C. D.C.



ALLIED RADIO CORP.

MODEL G-9503
 MODEL G-9505
 MODEL G-9511-13
 Schematics

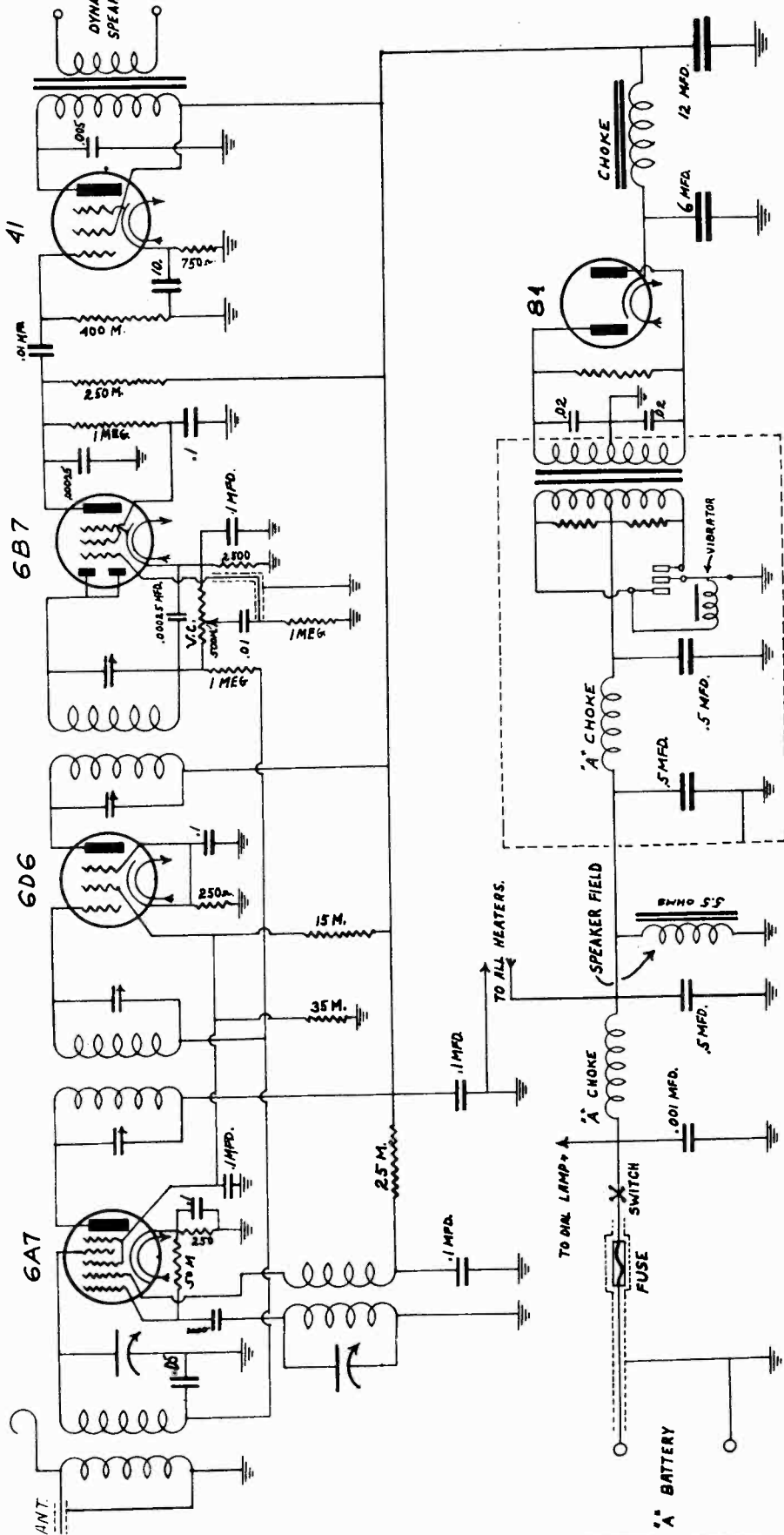


MODELS G-9515, G-9881

Schematic

ALLIED RADIO CORP.

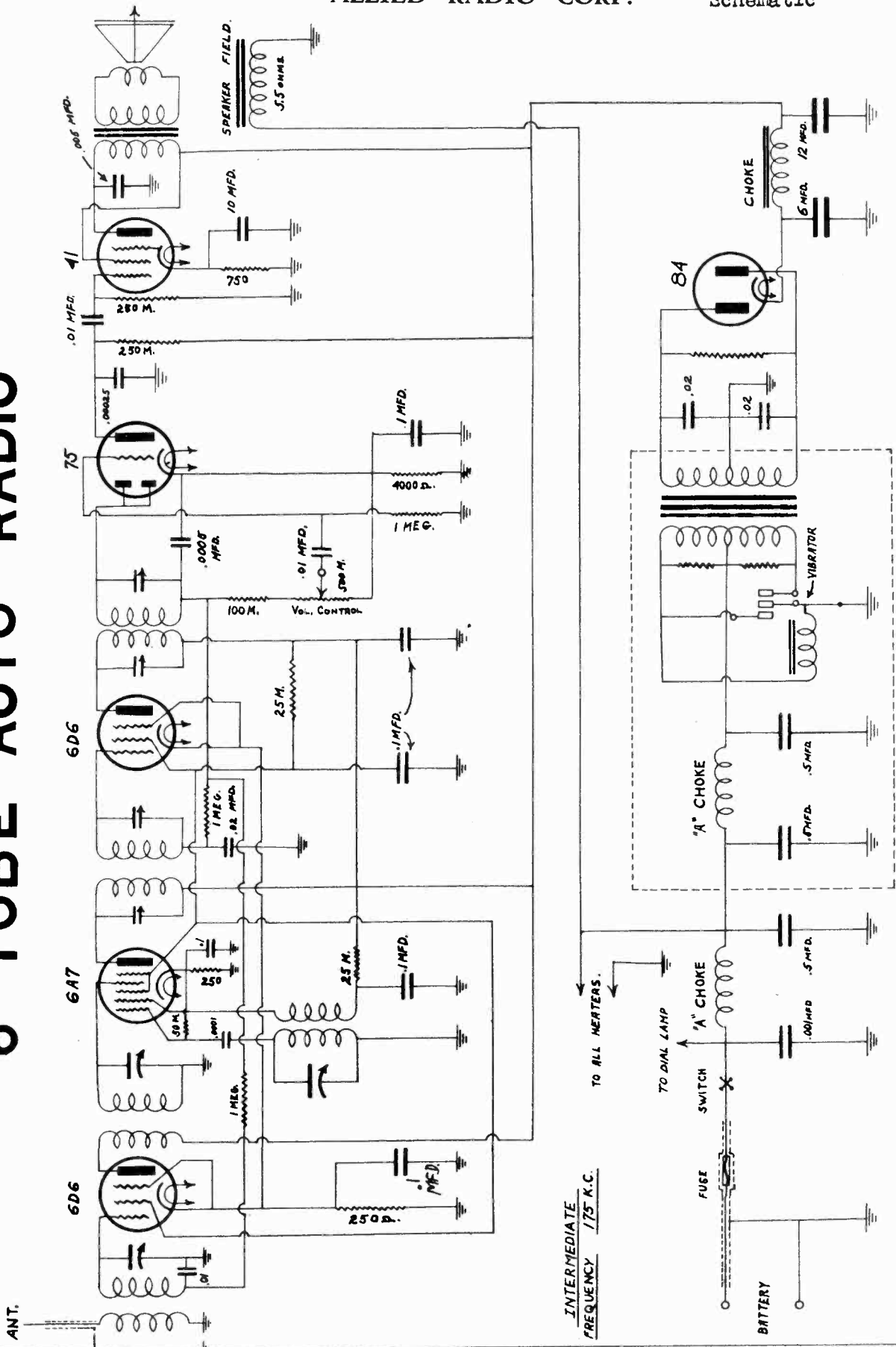
5 TUBE AUTO RADIO



APRIL 1 1935 INTERMEDIATE FREQUENCY 456 K.C.

ALLIED RADIO CORP.

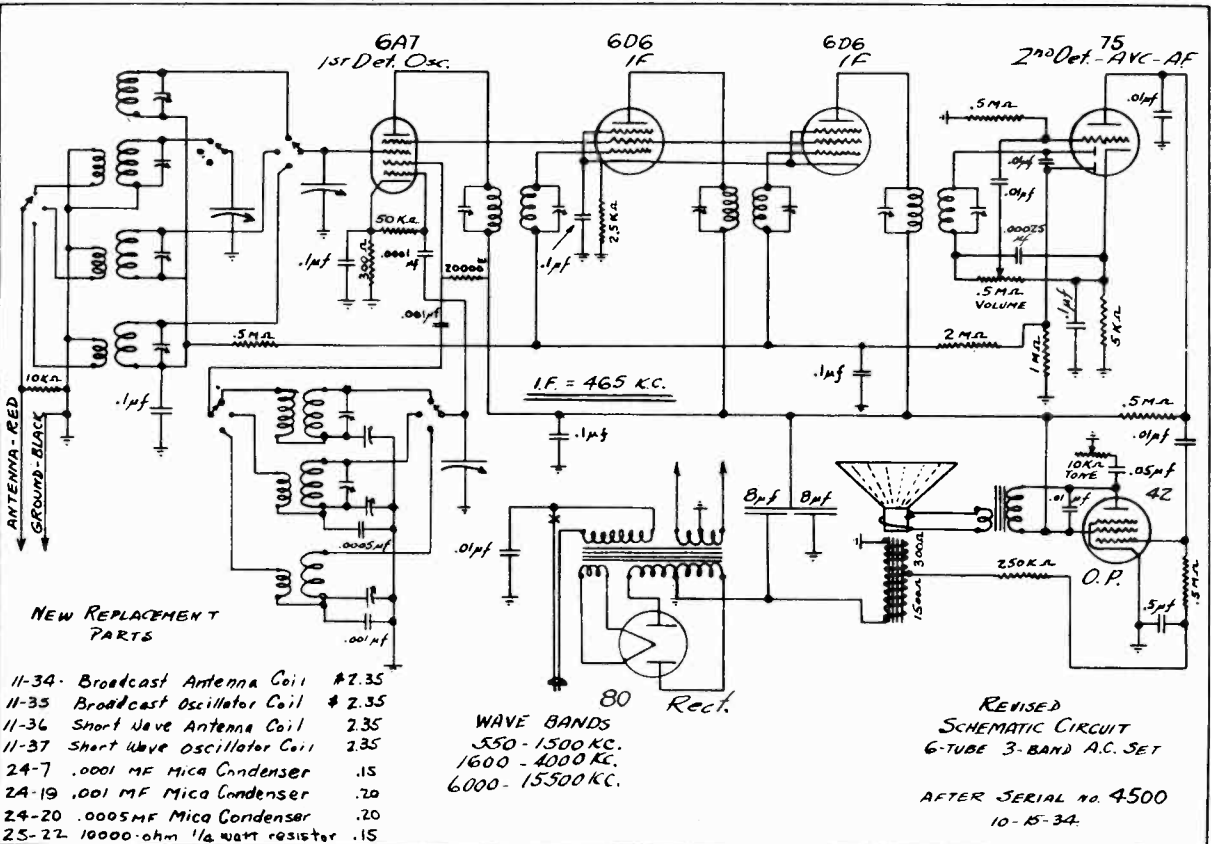
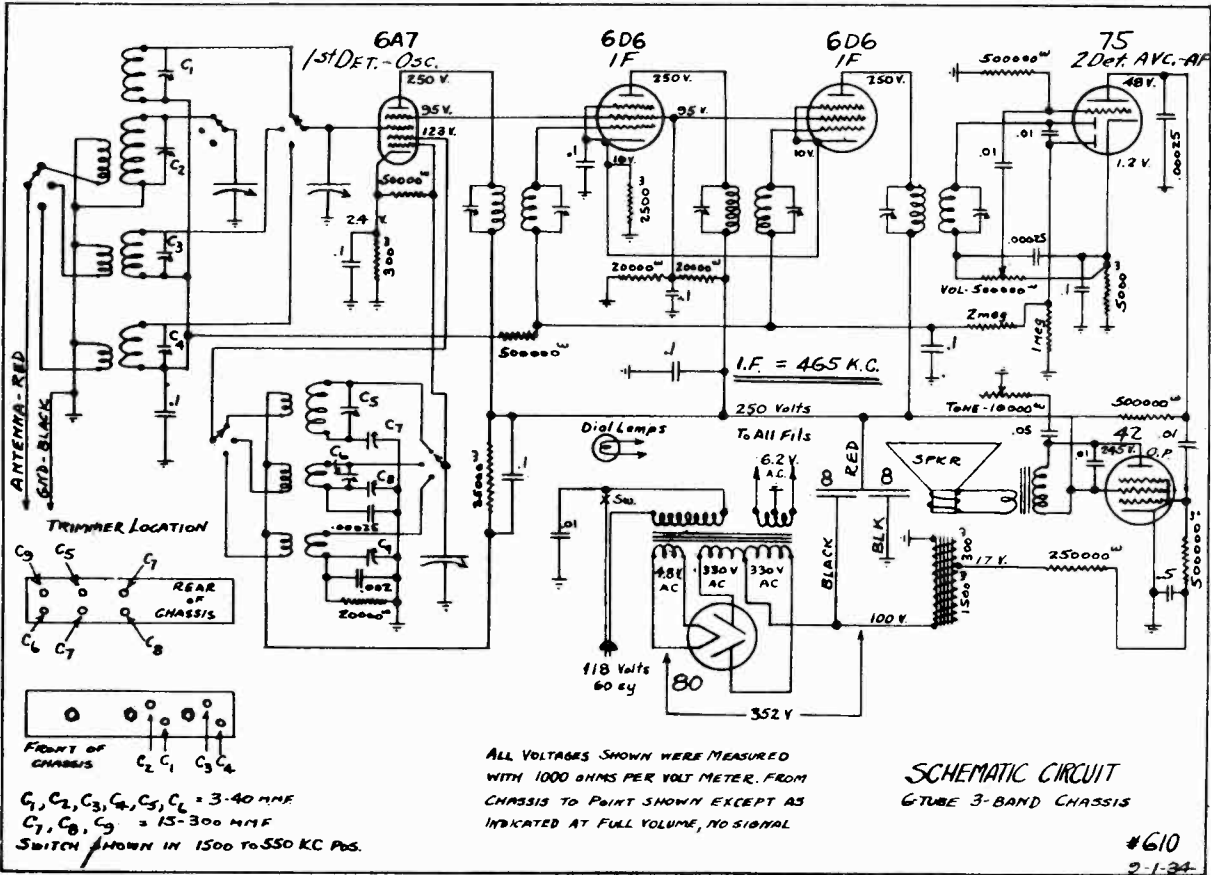
6 TUBE AUTO RADIO



APRIL I 1935

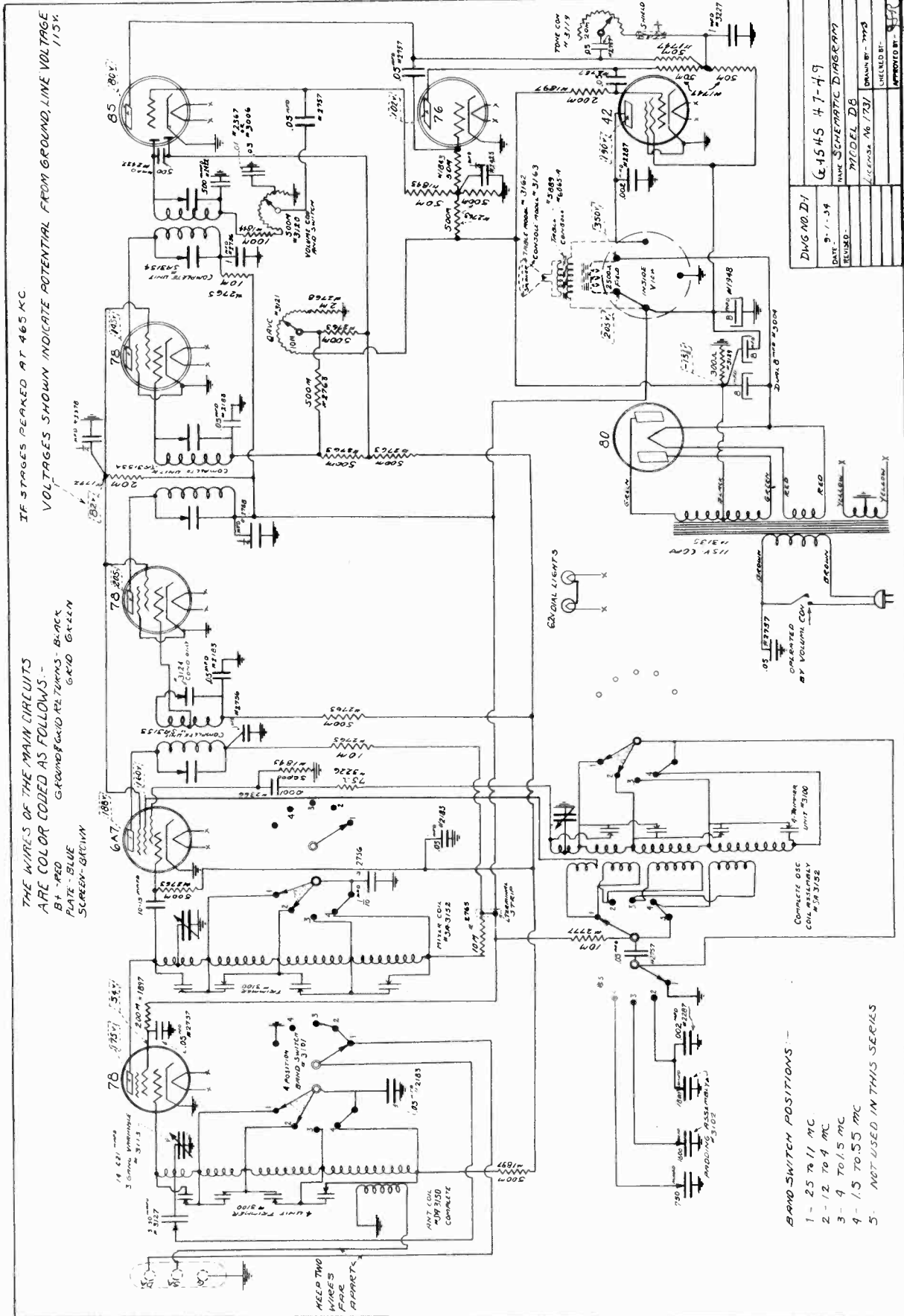
MODEL G-9533
Two Types
Schematics

ALLIED RADIO CORP.



ALLIED RADIO CORP.

MODEL G-9545, G-9547, G-9549
Schematic, Voltage



IF STAGES PEAKED AT 465 KC
 VOLTAGES SHOWN INDICATE POTENTIAL FROM GROUND, LINE VOLTAGE 115V.

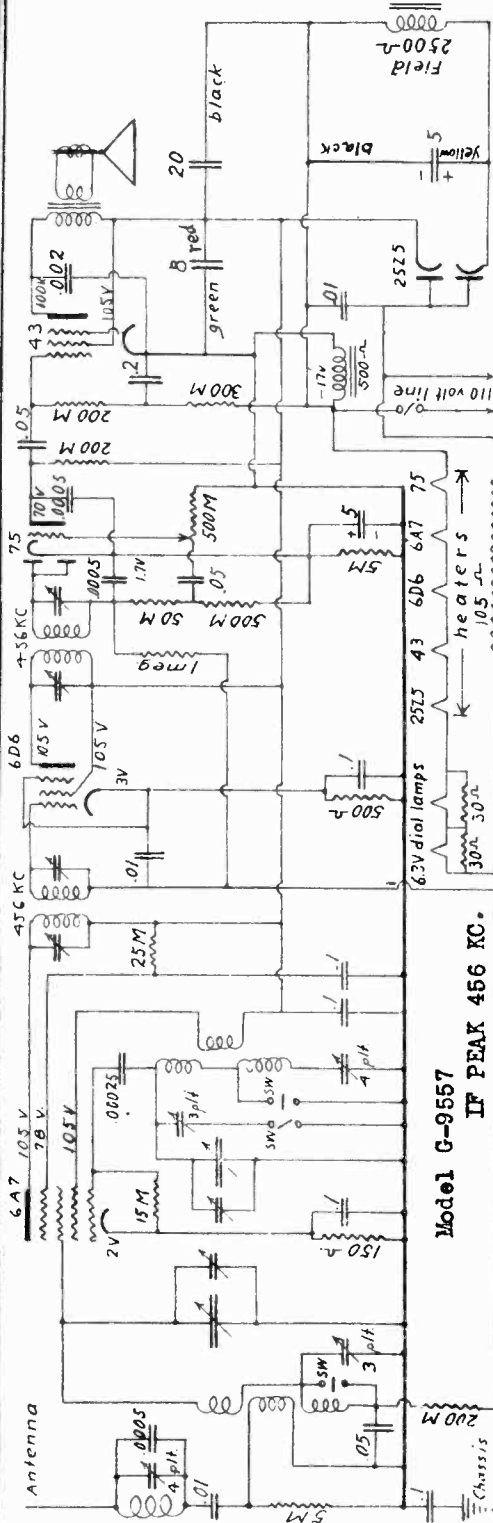
THE WIRES OF THE MAIN CIRCUITS
 ARE COLOR CODED AS FOLLOWS -
 PLATE - BLUE
 GRID - GREEN
 SCREEN - GRAY
 GROUND - BLACK

DWG. NO. D1	G-4545 47-49
DATE	9-1-34
REVISION	
NAME	SCHEMATIC DIAGRAM
MODEL	D8
LICENSE NO.	1731
DRAWN BY	779
CHECKED BY	
APPROVED BY	

- BAND SWITCH POSITIONS -
- 1 - 25 TO 11 MC
 - 2 - 12 TO 4 MC
 - 3 - 9 TO 1.5 MC
 - 4 - 1.5 TO .55 MC
 - 5 - NOT USED IN THIS SERIES

ALLIED RADIO CORP.

MODEL G-9551
 MODEL G-9557
 Schematics, Voltage
 Alignment, Notes



**Model G-9557
 IF PEAK 456 KC.**

CAUTION—This instrument is equipped for operation on 110 volts D. C. or A. C., any frequency from 25 to 133 cycles per second. Before attempting to operate on any other voltage be sure that the proper adaptors are connected and the instructions accompanying them are understood. Special adaptor can be secured from the factory at a slight extra cost, for operating this receiver on 220 volt A. C. or D. C. Cord for 110 volt or 220 volt heats moderately, as the cord contains resistance necessary for operation at these voltages.

The 20-foot aerial packed with the set may be unwound and hung outside a window or stretched along the floor under a rug after attaching one end to the antenna lead from the back of the set, and is ordinarily all the aerial required.

No ground connection should be used. Sometimes results are better if the tip of the antenna wire is connected to an outside aerial.

NOTE—When operating on D. C. current and set fails to operate after waiting a reasonable length of time for tubes to heat up, reverse power supply plug.

To remove set from cabinet, disconnect from power supply, remove knobs, remove back if compact model, and unscrew the four self-headed screws on bottom of cabinet. To rebalance set, remove from cabinet. Intermediates are first balanced by feeding a 456 KC signal into grid of 6A7 tube and ad-

justing trimmers in top of the two tall cans to greatest volume. Adjust wave trap in rear flange of chassis by turning the trimmer screw until a 456 KC signal applied to the antenna lead cannot be heard. Next, set band switch to broadcast position (counter-clock), turn tuning knob to 1400 KC, feed a 1400 KC signal into antenna lead and adjust trimmers on tuning condenser to greatest volume. Next, set band switch to long-wave (clockwise), turn tuning knob to 350 KC, feed a 350 KC signal into the antenna lead and adjust the two 3-plate trimmers on the under side of the panel to greatest volume. Turn tuning knob to 150 KC, set test oscillator to this frequency and adjust the 4-plate section of dual trimmer to maximum volume. Repeat the operations at 350 KC and 150 KC until trimming at one frequency does not affect the other.

NOTE—Should it be necessary to write to the factory for parts or information, always give the serial number of the set as stamped on the back of the chassis.

PHONOGRAPH—Install a single pole double-throw toggle switch and two pin jacks at a convenient place on the chassis near the 75 tube. Disconnect the 05mfd. condenser from volume control and attach to one side of toggle switch, connect disconnected volume control terminal to middle terminal of switch, other side of switch to one side of phonograph pickup, and other side of pickup to

“B” minus.

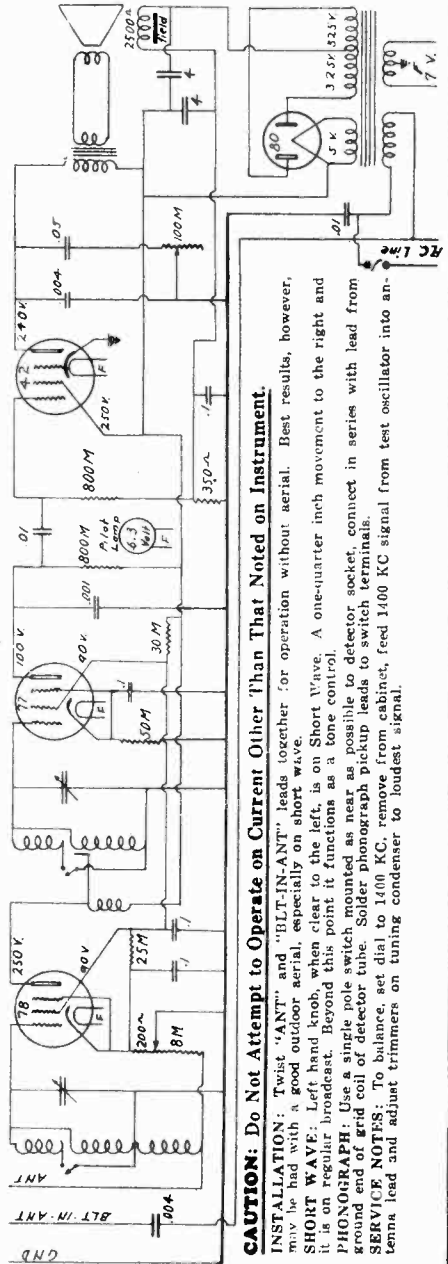
CAUTION: Do Not Attempt to Operate on Current Other Than That Noted on Instrument.

INSTALLATION: Twist “ANT” and “BLT-IN-ANT” leads together for operation without aerial. Best results, however, may be had with a good outdoor aerial, especially on short wave.

SHORT WAVE: Left hand knob, when clear to the left, is on Short Wave. A one-quarter inch movement to the right and it is on regular broadcast. Beyond this point it functions as a tone control.

PHONOGRAPH: Use a single pole switch mounted as near as possible to detector socket, connect in series with lead from ground end of grid coil of detector tube. Solder phonograph pickup leads to switch terminals.

SERVICE NOTES: To balance, set dial to 1400 KC, remove from cabinet, feed 1400 KC signal from test oscillator into antenna lead and adjust trimmers on tuning condenser to loudest signal.



Model G-9551

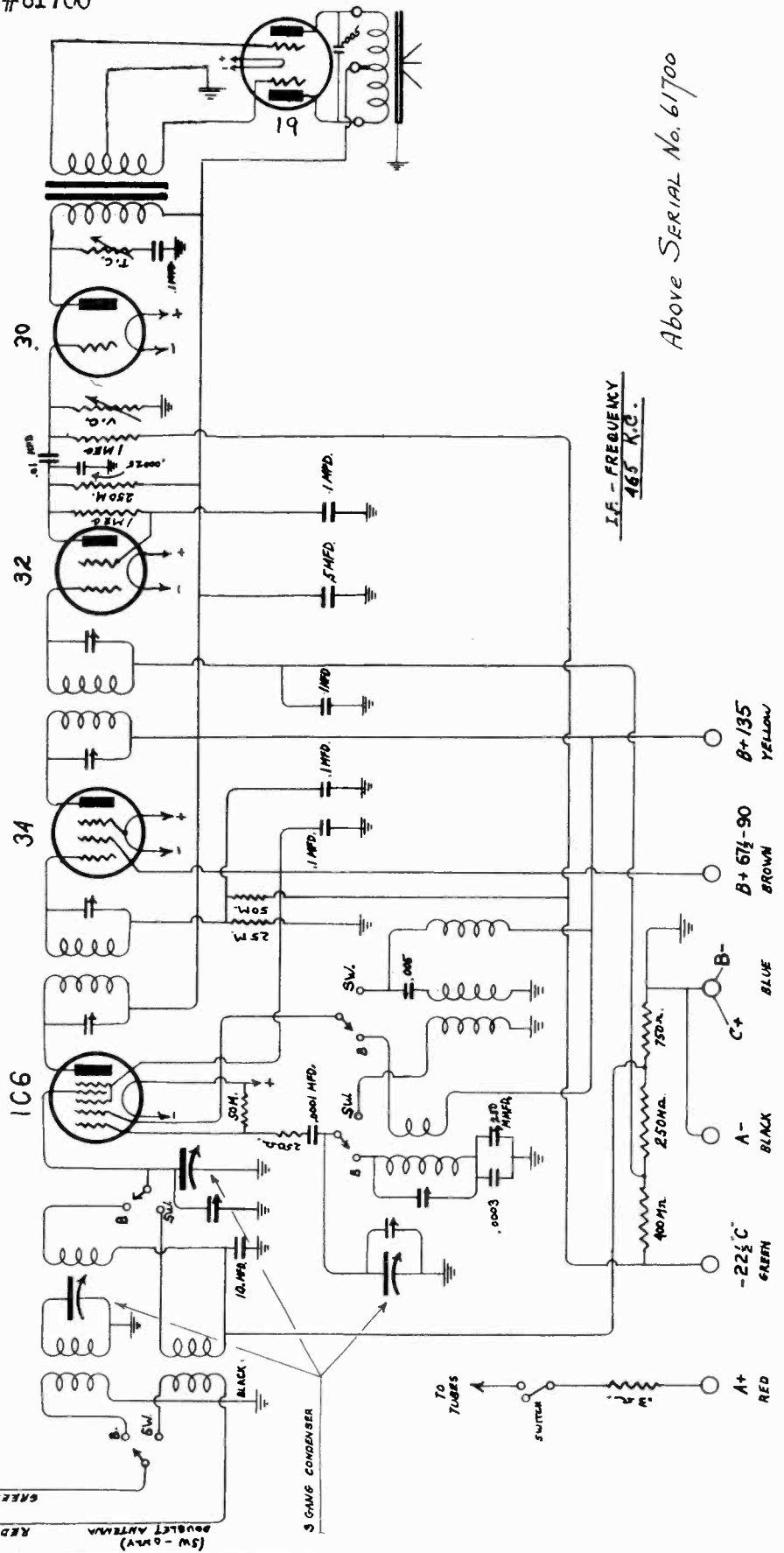
MODEL G-9561, G-9563,
G-9565, G-9567
Above Serial #61700
Schematic

ALLIED RADIO CORP.

BATTERY SET
5 TUBE SUPERHETERODYNE

SPLIT BAND

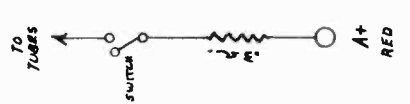
2 VOLT



Above SERIAL No. 61700

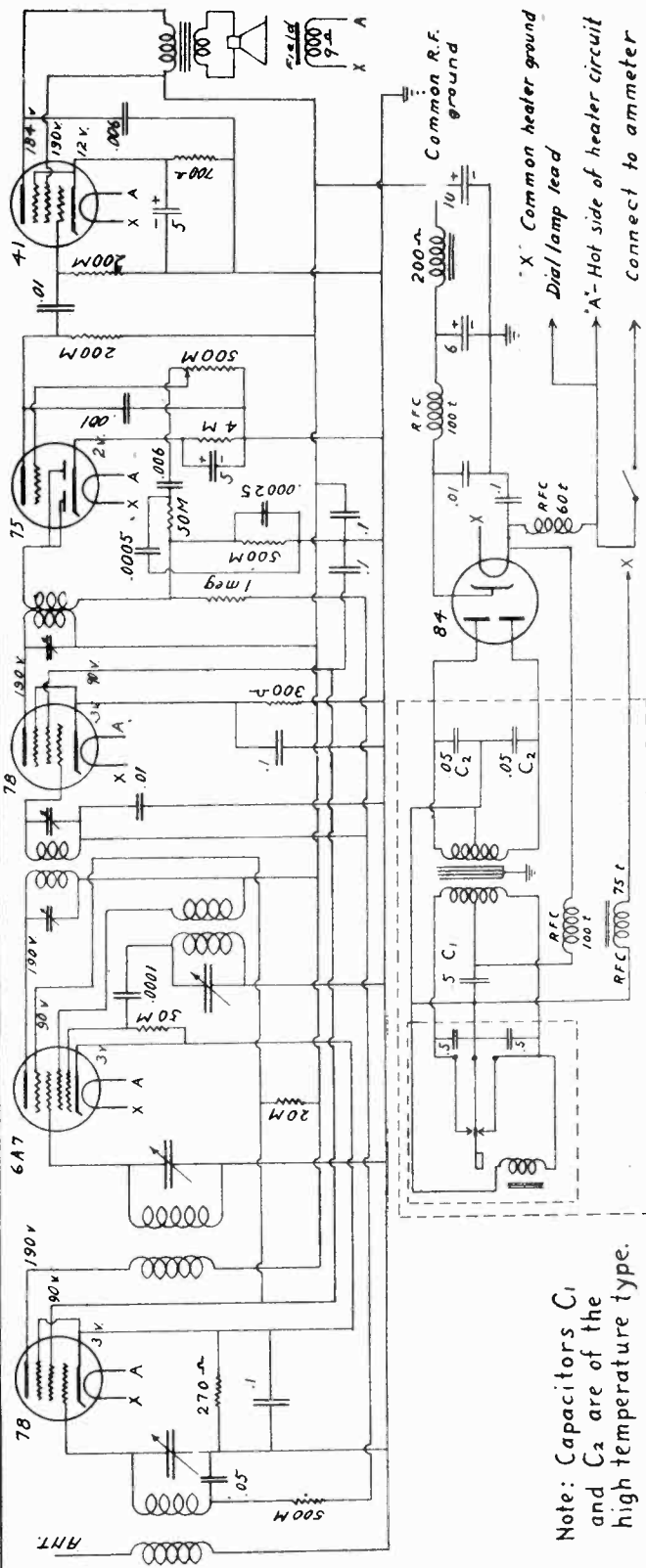
I.F. - FREQUENCY
465 KC.

- 22½ C GREEN
- A- BLACK
- C+ BLUE
- B+ 67½-90 BROWN
- B+ 135 YELLOW



ALLIED RADIO CORP.

MODEL G-9599
Schematic, Data
Voltage



Note: Capacitors C₁ and C₂ are of the high temperature type.

BALANCING I-F. COILS. These are trimmed through the tops of the tall cans by means of a small screwdriver and a 5-16" socket wrench. Remove chassis from cabinet and feed signal from test oscillator into grid cap of the 6A7.

BALANCING R-F. COILS. Tuning control must be attached to tuning condenser shaft with pointer set to 530 when condenser is turned to maximum. Tune in a weak signal at its proper dial marking near 1400 and adjust first and second trimmers on variable from front of chassis for loudest signal. If signal does not come at proper dial setting, carefully adjust rear trimmer on variable to shift signal to its proper location and then readjust first and second trimmers. After reinstalling set in car, slightly readjust the first trimmer through hole in top of cabinet.

Determine most satisfactory mounting position on bulkhead which should be at the left hand side or directly in front of steering column. Spot the mounting bolt location and drill 1/2" diameter hole. Insert bolt through hole and assemble washer and nut on engine side. Hang receiver over bolt head and tighten nut.

Attach flexible shafts to control unit by first inserting shaft as far in as possible and then tighten set screws of shaft housing, being careful it is not so tight as to cause shaft to bind in housing.

Mount control unit on steering column in approximately correct position, set pointer to 530 on dial, turn upper control of receiver to extreme clockwise position, carefully place right hand shaft in position on upper receiver control and left hand shaft on lower control and tighten set screws securely.

Adjust control unit position so that shafts leave set with least amount of bend possible and fasten securely in this position. Trial of controls will show best location for smooth operation.

Attach heavy rubber covered lead to ammeter terminal.

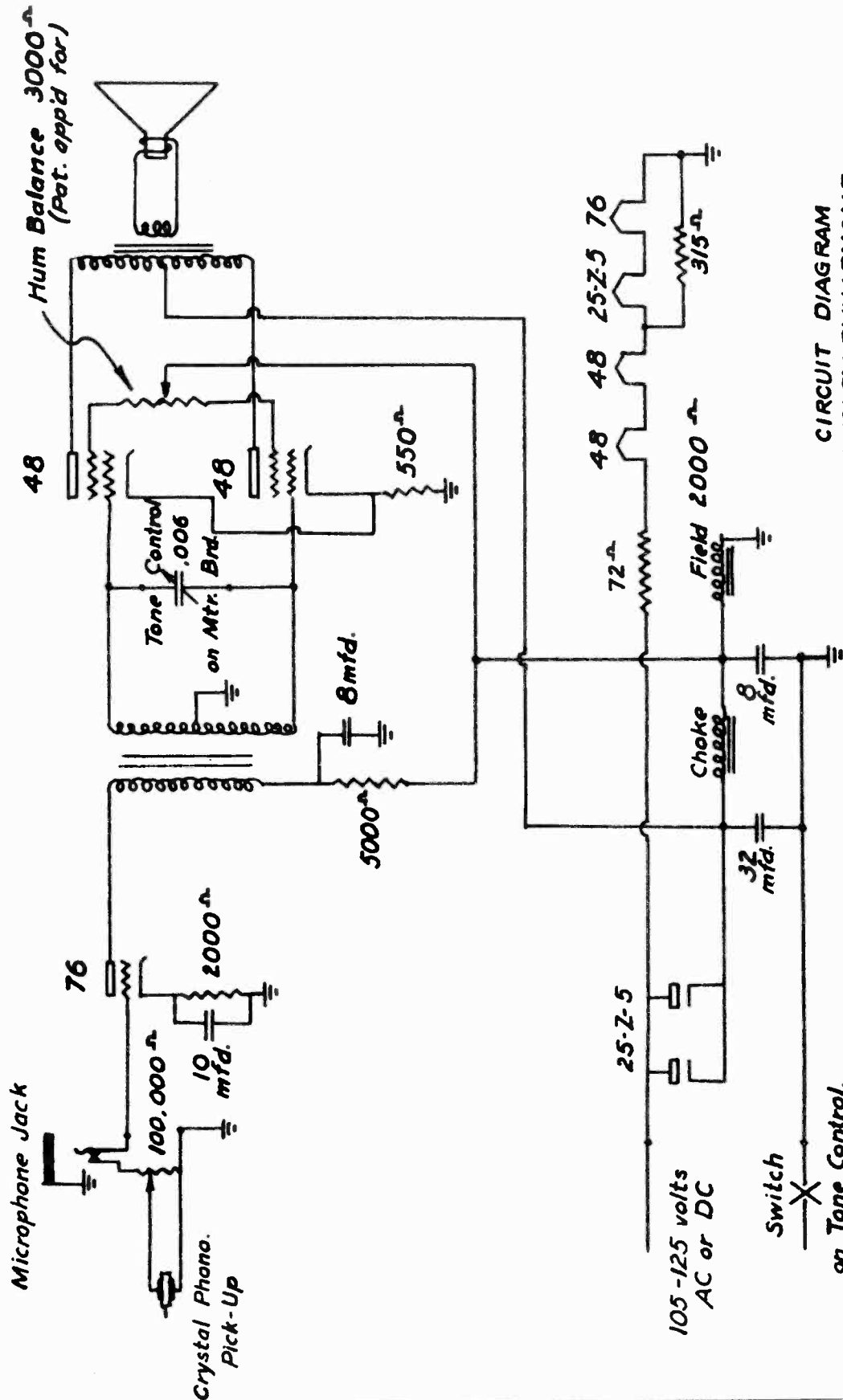
Connect pilot light wire from control head to short black wire on set, making connection close to set, and tape up joint. Ground shield by loosening screw under nearest corner of set and connecting wire therefrom to end of shield and tighten up screw.

Disconnect ignition leads from spark plugs, attach one suppressor to top of each plug and reattach the ignition lead to free end of suppressor. Disconnect center wire from distributor head, and substitute distributor suppressor, then plug center wire into free end of suppressor.

Attach generator bypass condenser to generator frame by means of screw holding cut-out. Connect wire from condenser to generator side of cut-out switch.

ANSLEY RADIO LABORATORIES

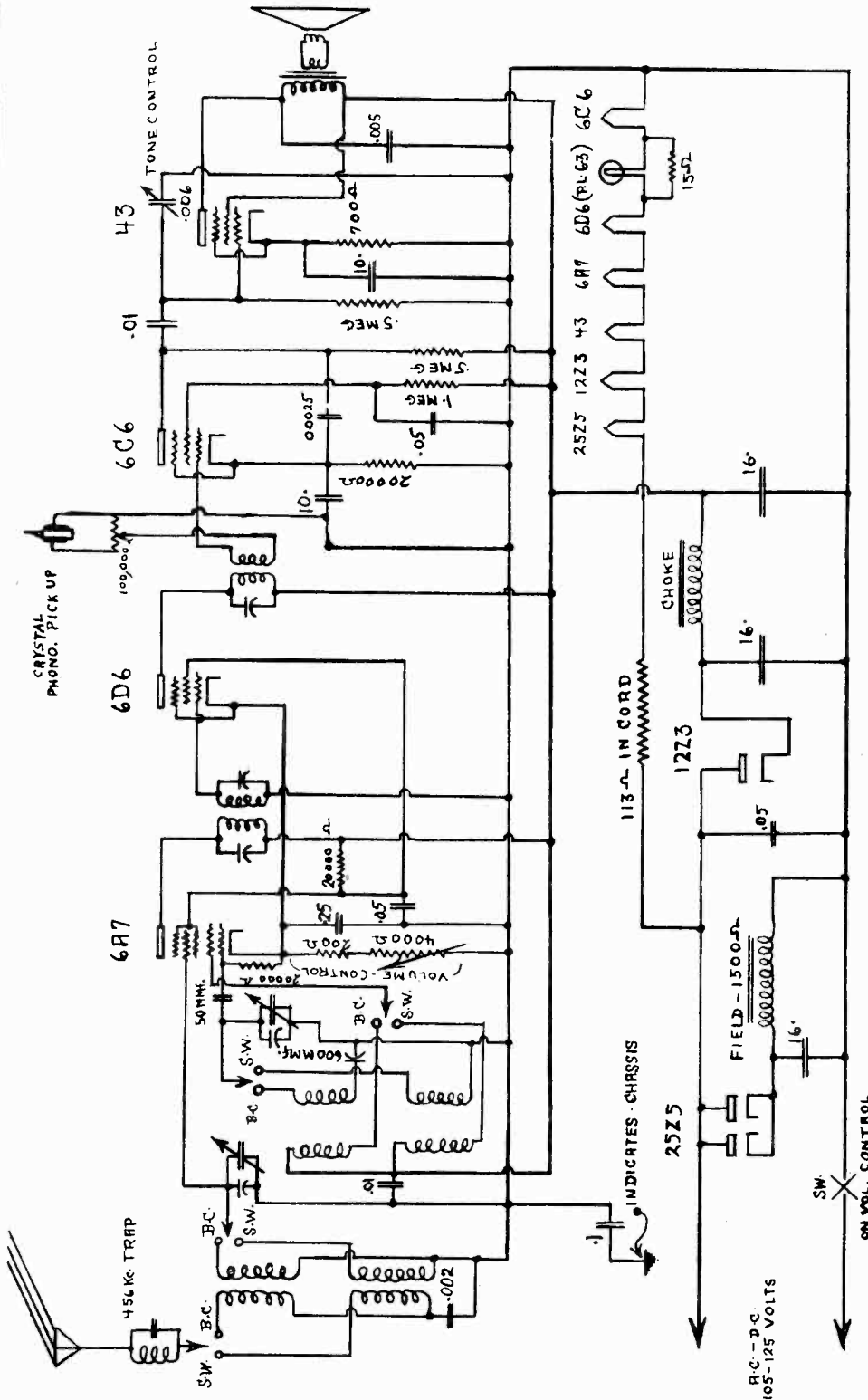
MODEL D-1
 Dynaphone, Late Type
 Schematic



CIRCUIT DIAGRAM
 ANSLEY DYNAPHONE
 Model D-1
 (LATER TYPE)

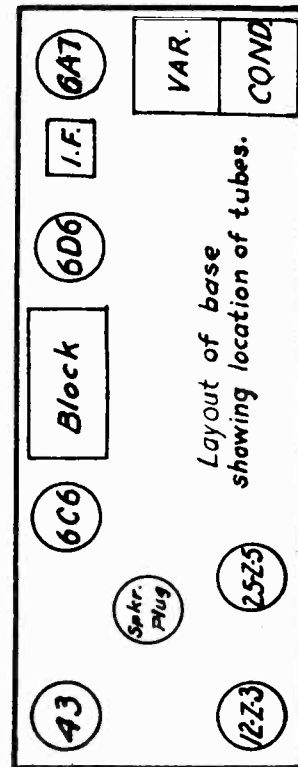
MODEL U-10
Schematic
Socket

ANSLEY RADIO LABORATORIES



CIRCUIT DIAGRAM
ANSLEY UNIVERSAL RADIO
MODEL U-10

Used in
Radio-Dynaphone Combinations
Models D-9 & D-10



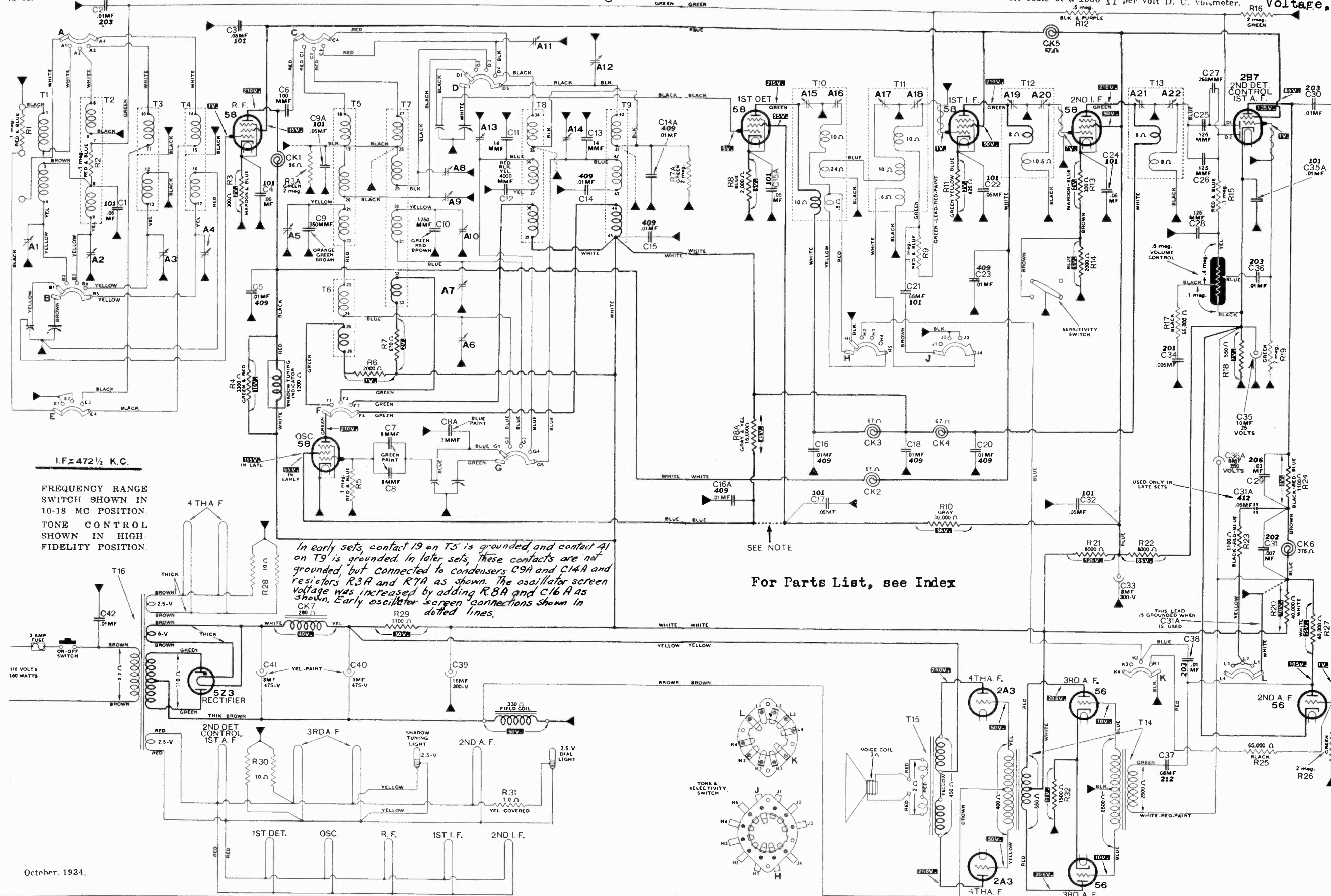
ATWATER-KENT MFG. CO.

MODEL 112

Schematic
Voltage Notes

In early Model 112, the volume control is oblong shaped and in sets using this type of control, a .1 MF condenser is connected in series with the lead at the top end of the volume control, and a .5 Ω resistor is connected from the bottom end of the .1 Ω resistor

(in series with volume control) to the cathode of the 2B7 tube. The voltages in this diagram were made with the 250-volt scale of a 1000 Ω per volt D. C. voltmeter.



I.F. = 472 1/2 K.C.

FREQUENCY RANGE SWITCH SHOWN IN 10-18 MC POSITION. TONE CONTROL SHOWN IN HIGH-FIDELITY POSITION.

In early sets, contact 19 on T5 is grounded, and contact A1 on T9 is grounded. In later sets, these contacts are not grounded but connected to condensers C9A and C14A and resistors R3A and R7A as shown. The oscillator screen voltage was increased by adding R8A and C16A as shown. Early oscillator screen connections shown in dotted lines.

For Parts List, see Index

October, 1934.

MODEL 112
Alignment, Trimmers
Socket

ATWATER-KENT MFG. CO.

ADJUSTING TRIMMER CONDENSERS (Contd.)

I. F. TRIMMERS.

Connect an I. F. test oscillator to the 1st-detector tube by means of the I. F. coupling unit shown in Fig. 1. Adjust the I. F. oscillator to 472½ KC. Connect a sensitive output meter to the set. Use the weakest possible oscillator signal that will give a reading on the output meter with the radio volume control on full. Put tone control in 2nd-position from right.

Put balancing unit A (shown in Fig. 2) across trimmer A21 and peak A22.

Put unit A across A22 and peak A21.

Put unit A across A19 and peak A20.

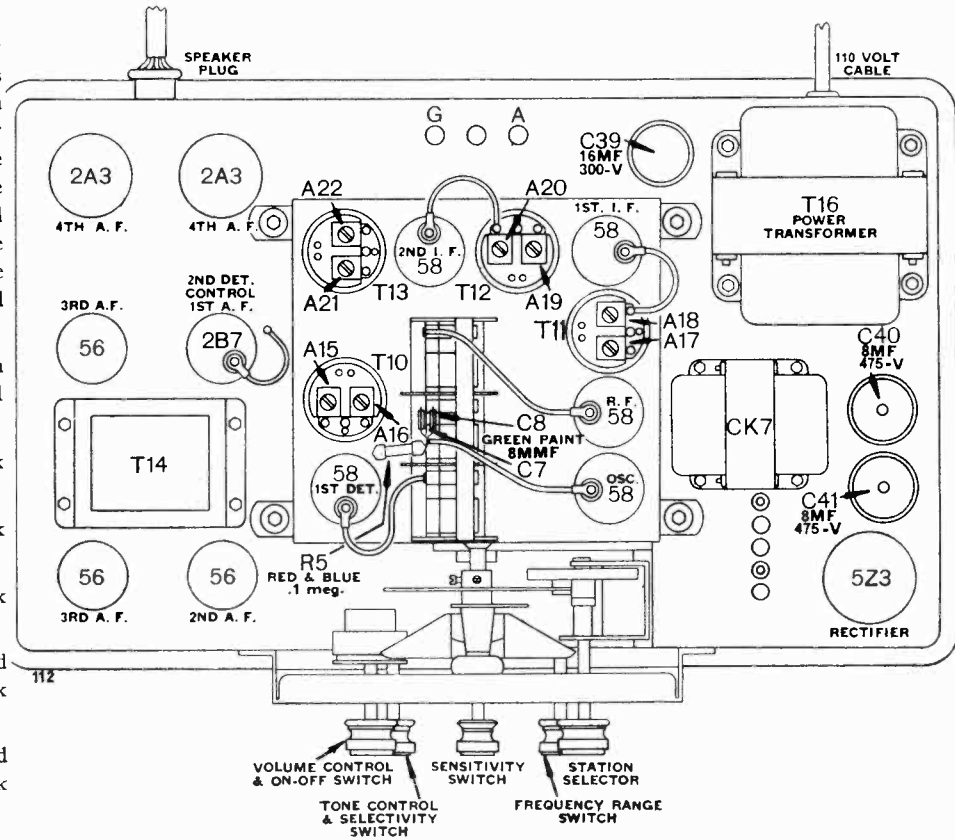
Put unit A across A20 and peak A19.

Put one unit A across A17 and another unit A across A15; peak A18 and A16.

Put one unit A across A18 and another unit A across A16; peak A17 and A15.

In case of instability while adjusting A21 and A22, place an extra balancing unit A across A18.

Remove the I. F. coupling unit and the balancing units and seal the trimmer screws.



R. F. TRIMMERS.

Connect an R. F. oscillator to the antenna and ground terminals of the set. Use the weakest possible signal to give a reading on the output meter. Loosen the trimmer screws for the frequency range or ranges that are to be re-adjusted.

10 to 18 MC range. Tune oscillator exactly to 18 MC and turn tuning knob of set so indicator is at 18 MC mark. Adjust trimmers A14, A4 and A12 for peak output.

4 to 10 MC range. Tune oscillator exactly to 10 MC and turn set to 10 MC mark on the 4 to 10 MC range. Peak trimmers A13, A3 and A11.

1.5 to 4 MC range. Tune oscillator to 4 MC and turn set to the 4 MC mark on the 1.5 to 4 MC scale. Peak trimmers A7, A2 and A8. Tune oscillator to 1.5 MC and, with set at 1.5, peak A10. Repeat adjustments on A7 and A10 if necessary.

Broadcast range. Tune oscillator and set to 1500 KC. Peak trimmers A6, A1 and A9. Tune oscillator to 560 KC and turn set to the 560 KC mark. Peak A5. Repeat adjustments on A6 at 1500 and A5 at 560 if necessary.

TUNING MECHANISM

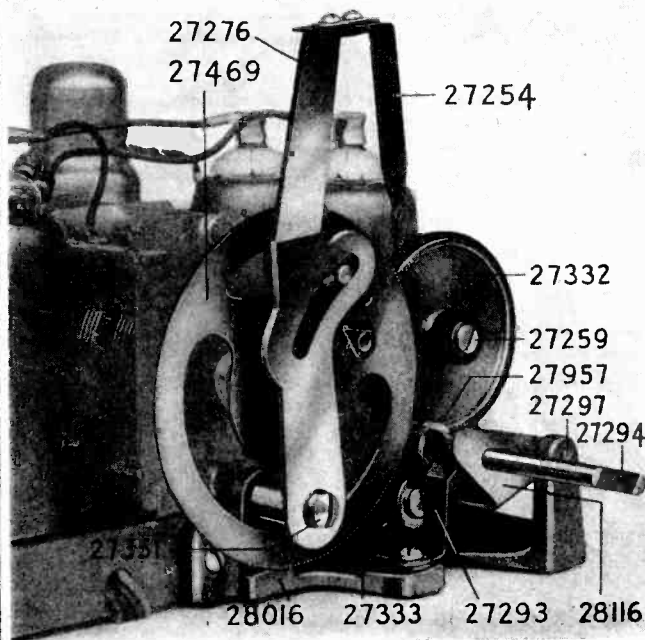


Illustration of parts in dual-speed compensated tuning mechanism in Models 112, 318, 447 and 559.

TRIMMERS ON MODEL 112

	10-18 MC Range	4-10 MC Range	1.5-4 MC Range	540-1600 KC Range
R. F.	A4	A3	A2	A1
1st-Detector	A12	A11	A8	A9
Oscillator	A14	A13	A7	A6
Tracking	None	None	A10	A5

The I. F. trimmers are A15 to A22, inclusive.

ATWATER-KENT MFG. CO.

MODEL 112
Trimmer Notes

ADJUSTING TRIMMER CONDENSERS

EQUIPMENT.

1. **OSCILLATOR.** The oscillator should extend from the lowest I. F. frequency (125 KC in Atwater Kent sets) to at least 18 MC. The oscillator should have a good attenuator and should be well shielded. If the oscillator is not well shielded, it may be difficult to peak the pre-selector trimmers on some models, owing to pick-up by the 1st-detector grid circuit. In general, it is advisable to connect an .00025MFD fixed condenser in series with the oscillator pick-up lead at the antenna terminal of the set.

2. **OUTPUT METER.** Use a sensitive output meter and keep the radio volume control turned on full volume. This is necessary to minimize the effect of the automatic-volume-control action of the set which would otherwise prevent sharp peaking of the trimmers.

3. **BALANCING UNIT.** Build two of the Type "A" balancing units and one of the I. F. coupling units shown below. These are required for correct adjustment of Atwater Kent super-heterodynes. The Type "B" balancing unit, also described, is used on earlier models of Atwater Kent sets.

(These Atwater Kent units may be purchased from your distributor.)

To use the I. F. coupling unit, place it on the grid cap of the 1st-detector tube as shown, and clip the lead (that ordinarily goes to the 1st-detector grid cap) to the left-hand end of the 10,000 Ω resistor as shown.

4. Use a non-metallic screw driver for adjustment of the trimmers.

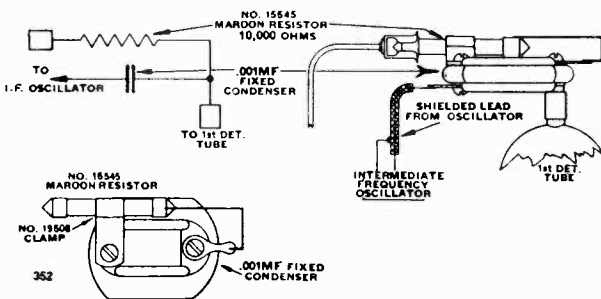


Fig. 1. I. F. Coupling unit, part No. 42590.

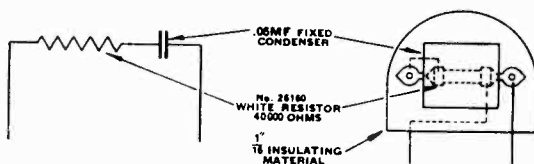


Fig. 2. Balancing unit "A," part No. 42610.

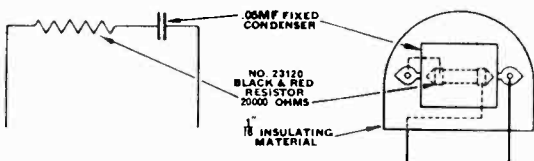


Fig. 3. Balancing unit "B," part No. 42620.

GENERAL NOTES.

1. Do not make any trimmer adjustments and do not disturb the dial gear or the dial indicator adjustments unless absolutely necessary.

2. With all-wave sets, it is very desirable to use a test oscillator that extends to 18 MC (18,000 KC). If you attempt to use harmonics of a broadcast oscillator, you are likely to use the wrong harmonic and set the trimmers incorrectly.

3. When using a test oscillator, you will experience "double-spot" or image reception, particularly on the highest frequency range of the set. The double-spot point is twice the I. F. fre-

quency below the correct point. For instance, if a set has an I. F. frequency of 472½ kilocycles, and you are tuning in an 18 MC signal, the double-spot or image will be twice 472½ or 945 KC (.94 MC) below 18. In such a case you will hear the signal at 18 MC and also at 17.06 MC. In properly aligned sets of six tubes or more, the image should be weaker than the desired signal.

4. Because of the facts mentioned in paragraphs 2 and 3 above, it is very desirable, wherever possible, first to check the short-wave dial calibration and determine how far, and in what direction, the readings are "off." This should be done on actual reception of short-wave stations of known frequency. This pre-checking will assist you in selecting the correct harmonic (in case you are using a broadcast oscillator), and it will also minimize possibility of confusing the correct signal and the image signal.

5. On oscillator trimmers there may be two different settings with which the signal is received. Always use the *first* of these two positions as you screw the trimmer in from a loose or minimum-capacity position. **THIS IS IMPORTANT.**

6. On sets with a combined oscillator and 1st-detector tube, tune the set to a quiet point near 1000 KC while adjusting the I. F. trimmers.

OSCILLATOR GOVERNS DIAL ACCURACY.

It is essential to understand definitely that in a super-heterodyne the dial calibration depends on the oscillator circuit of the set, providing that the I. F. trimmers are correctly aligned. The pre-selector (R. F. and 1st-detector) trimmers do not affect the dial calibration but simply affect sensitivity.

If the dial calibration of one or more of the frequency ranges of the set is "off," check the oscillator trimmer, the oscillator tracking condenser and tracking trimmer, and the oscillator transformer for the particular range or ranges in question.

The oscillator trimmer is used to adjust the **high-frequency** end of the particular range.

The oscillator tracking condenser adjusts the **low-frequency** end of the particular range.

In Atwater Kent sets the fixed tracking condenser on the broadcast range (and in some models also on the police range) is shunted with an adjustable tracking trimmer condenser. The adjustable tracking trimmer condenser is not used on the high-frequency ranges.

The adjustment of the trimmers for the high-frequency and low-frequency end of a particular range is slightly interlocking. For example, assume that the broadcast range of a set is off calibration. First turn the tuning knob so the dial pointer is at 1500 KC and, using a 1500 KC signal, peak the broadcast oscillator trimmer. Then turn the set to 560 KC and, using a 560 KC signal, peak the oscillator broadcast tracking trimmer for maximum output. This adjustment will have slightly affected the previous adjustment at 1500 KC so it will be necessary to repeat the adjustment at 1500 KC and also possibly at 560 KC.

If adjustment of the oscillator trimmer and the oscillator tracking trimmer does not correct the dial readings, it may be necessary to replace the fixed oscillator tracking condenser or the oscillator transformer for that particular range.

Naturally, the I. F. trimmers should be checked, and adjusted if necessary, before any attempt is made to align the R. F. or oscillator trimmers.

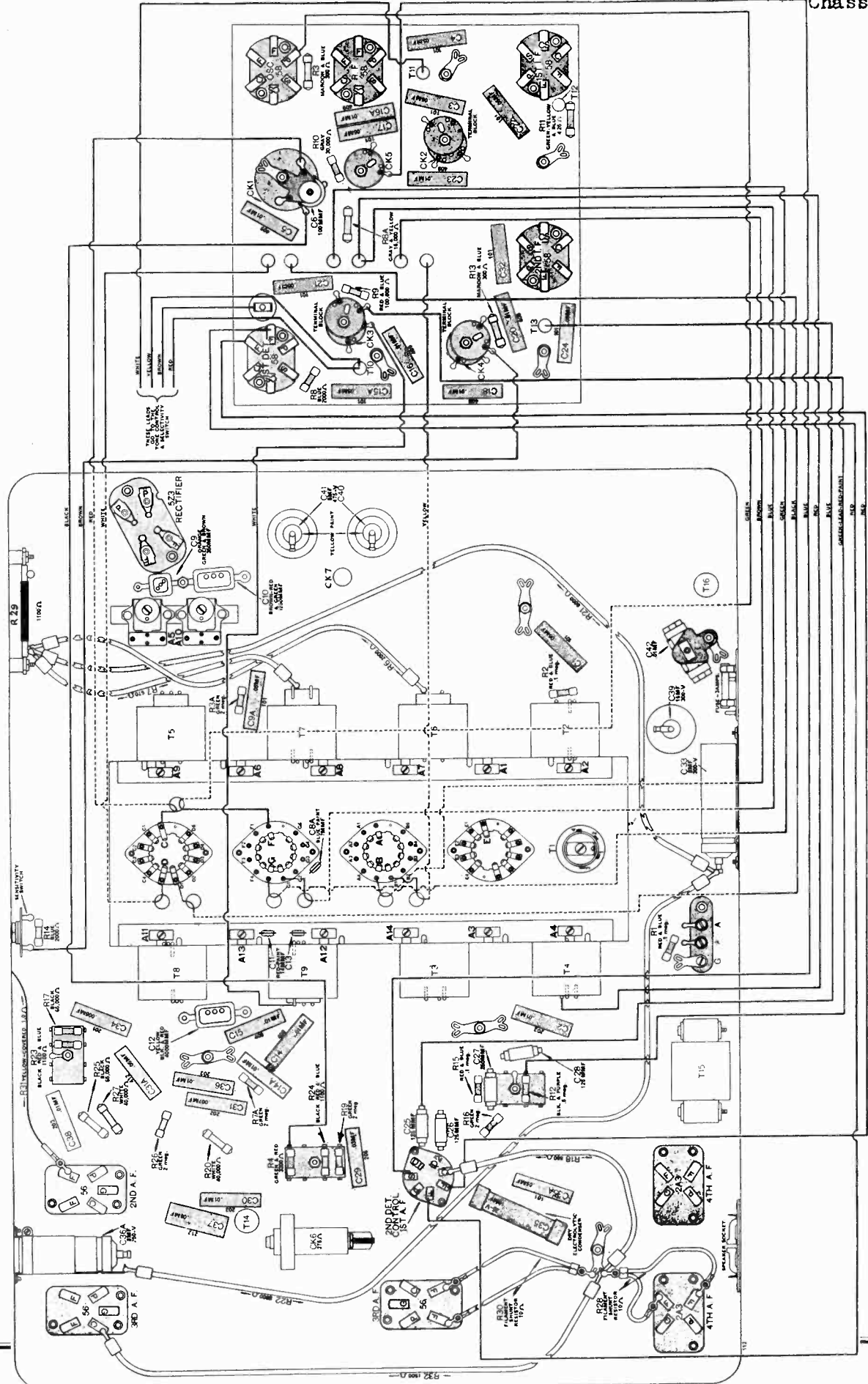
GENERAL PROCEDURE

First check the I. F. trimmers. If reception is satisfactory and the dial calibration is correct on the broadcast range, it is safe to assume that the I. F. trimmers are correctly adjusted.

If the dial calibration is "off" (or the set is weak) on only one range, adjust the trimmers for that range only. If this does not correct the trouble, inspect the resistors, condensers, transformers, and switch contacts associated with that particular range.

In checking a set, do not disturb the position of the wiring any more than necessary.

MODEL 112



This chart shows all connections between the upper unit and the lower base.

MODEL 112
MODEL 511
Parts Lists

ATWATER-KENT MFG. CO.

PARTS LIST FOR MODEL 511
Tune-O-Matic

MODEL 112
Replacement Parts

Table with multiple columns listing parts numbers, descriptions, and quantities for various components including trimmers, condensers, transformers, resistors, chokes, sockets, and speaker parts.

* Voltages for condensers are determined by the first numeral of the code number on the condenser. Example: 101=100 volts, 202=200 volts, 403=450 volts.

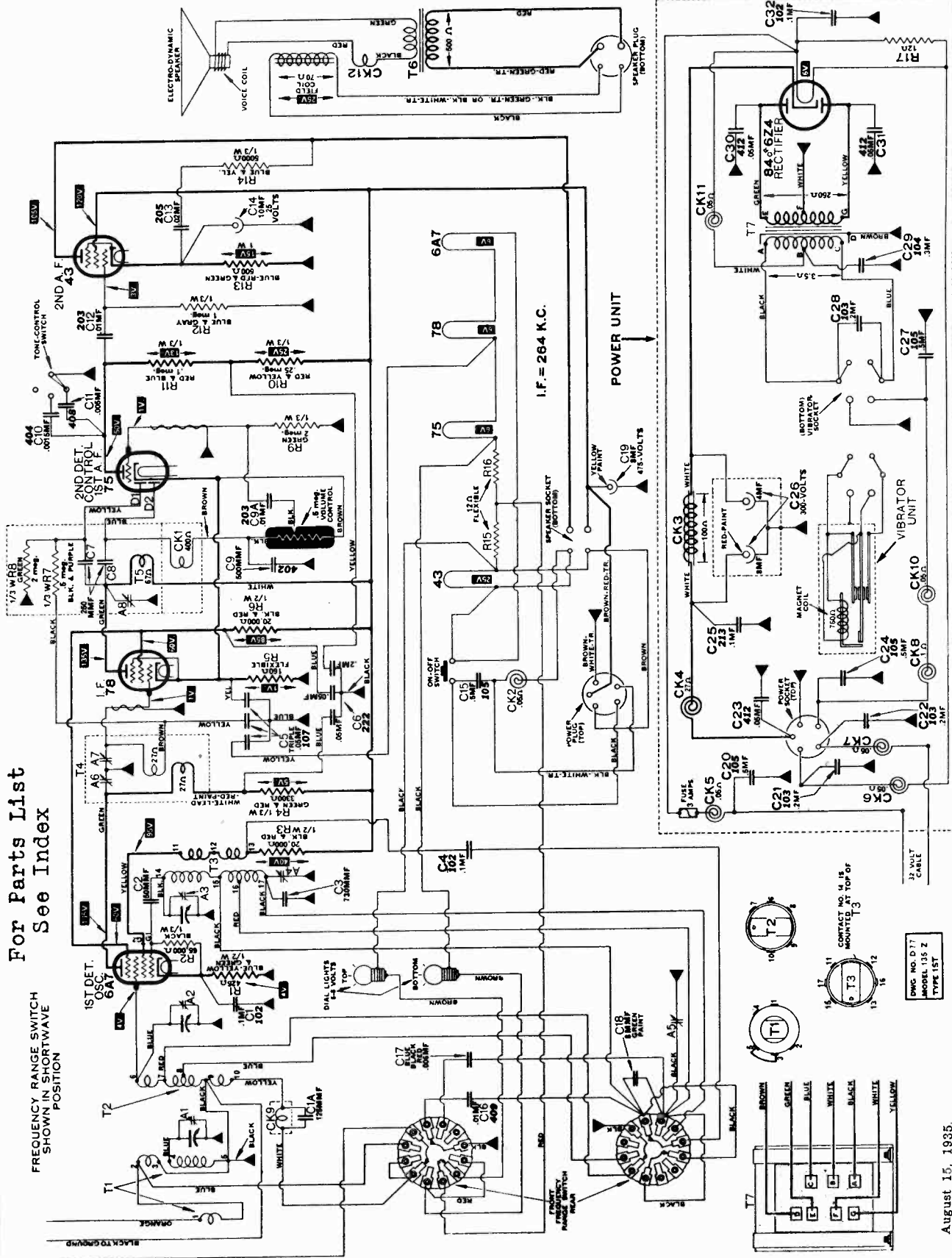
Ω=ohms U=megohms

ATWATER-KENT MFG. CO.

MODELS 135Z, 215Z
Schematic, Voltage

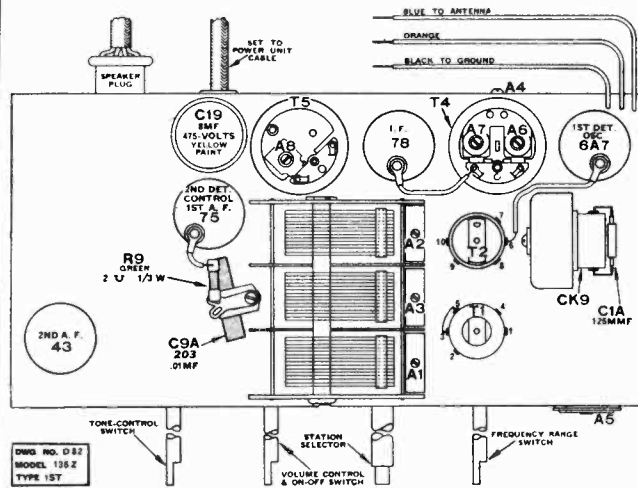
For Parts List
See Index

FREQUENCY RANGE SWITCH
SHOWN IN SHORTWAVE
POSITION

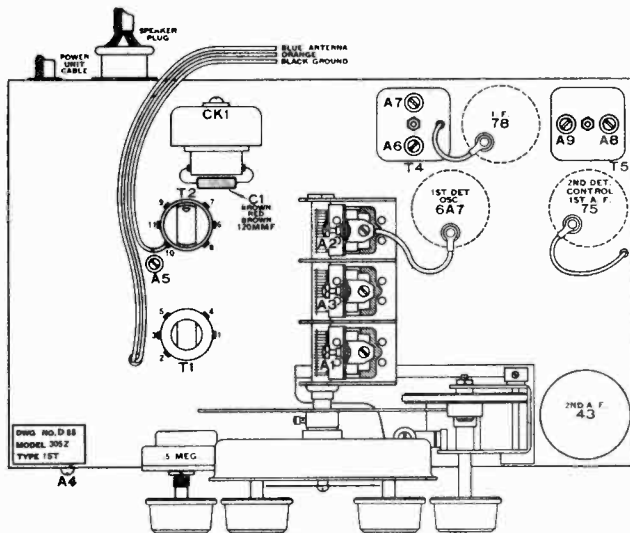


MODELS 135Z, 215Z
 MODELS 305Z, 565Z
 Trimmers, Socket
 Alignment

ATWATER-KENT MFG. CO.
 ADJUSTING TRIMMER CONDENSERS



MODELS 135Z AND 215Z



MODELS 305Z AND 565Z

- A1—Preselector, 1500 KC.
- A2—1st-detector, 1500 KC.
- A3—Oscillator, 15 MC.
- A4—Tracking, 560 KC.
- A5—Oscillator, 1500 KC.
- A6—1st-detector plate, 264 KC.
- A7—I. F. grid, 264 KC.
- A8—I. F. plate, 264 KC.

- A1—Preselector, 1500 KC.
- A2—1st-detector, 1500 KC.
- A3—Oscillator, 15 MC.
- A4—Tracking, 560 KC.
- A5—Oscillator, 1500 KC.
- A6—1st-detector plate, 264 KC.
- A7—I. F. grid, 264 KC.
- A8—I. F. plate, 264 KC.
- A9—2nd-detector, 264 KC.

EQUIPMENT.

1. **OSCILLATOR.** The oscillator should cover the I. F. and R. F. frequencies. It should be well shielded and have a good attenuator. If the oscillator is not well shielded, it may be difficult to peak the pre-selector trimmers, owing to pick-up by the 1st-detector grid circuit. In general, it is advisable to connect an .00025 MFD fixed condenser in series with the pick-up lead at the antenna terminal of the set.
2. **OUTPUT METER.** Use a sensitive output meter and keep the radio volume control turned on full volume, and the tone control at high pitch. This is necessary to minimize the effect of the automatic volume control action of the set which would otherwise prevent sharp peaking of the trimmers.
3. **I. F. COUPLING UNIT.** Purchase from your distributor one of the special Atwater Kent I. F. coupling units No. 42590. This is placed on the grid cap of the I. F. or the 1st-detector tube, as specified, and the lead that normally connects to the grid cap is attached to the coupling unit.
4. Use a non-metallic screw driver for adjustment of the trimmers.

GENERAL NOTES.

1. Do not tamper with the trimmer adjustments unless the necessity is clearly apparent.
2. On the oscillator trimmer there are two different settings at which the signal will be received. Always use the first of these two positions as you screw the trimmer in from a loose or minimum-capacity position. **THIS IS IMPORTANT.**
3. Check the I. F. trimmers first.
4. In checking the set, do not disturb the position of the wiring any more than necessary.

DIAL CALIBRATION.

The dial calibration depends on the oscillator circuit of the set, providing that the I. F. trimmers are correctly aligned to their specified frequency. The pre-selector (R. F. and 1st-detector) trimmers do not affect the dial calibration, but simply affect sensitivity.

The oscillator trimmer is used to adjust the high-frequency end of the scale.

The oscillator tracking condenser adjusts the low-frequency end of the scale.

If adjustment of the oscillator trimmer and the oscillator tracking trimmer condenser does not correct the dial readings, it may be necessary to replace the fixed oscillator tracking condenser or the oscillator transformer.

Naturally the I. F. trimmers should be checked and adjusted, if necessary, before any attempt is made to align the R. F. or oscillator trimmers.

PROCEDURE

I. F. TRIMMERS.

Connect I. F. test oscillator (264 KC) to I. F. grid by means of regular I. F. coupling unit. Peak A8 (and A9 in 305Z, 565Z). Connect I. F. oscillator to 1st-detector grid and peak A7, A6.

DIAL POINTER ADJUSTMENT.

With rotor of variable condenser fully meshed, dial indicator should be at 538 KC.

R. F. TRIMMERS.

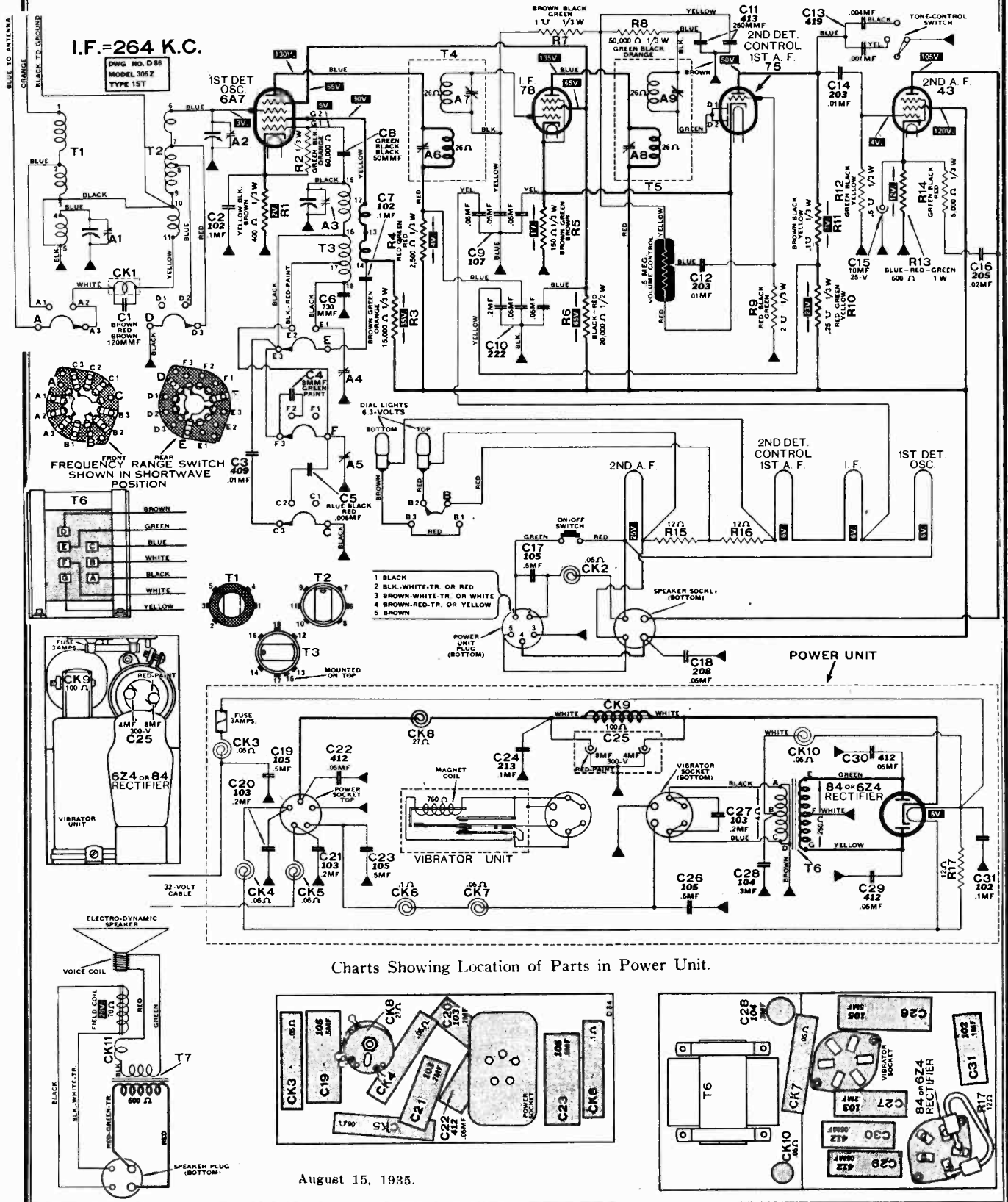
Connect an R. F. oscillator to antenna and ground of set.
Short-wave range. With oscillator and dial at 15 MC, peak A3. Use the first point on the trimmer, as it is screwed in from a loose or minimum-capacity position.
Police range. No trimmers on this range.
Broadcast range. With oscillator and dial at 1500 KC, peak A5, A2 and A1. With oscillator and dial at 560 KC, peak A4.

ATWATER-KENT MFG. CO.

MODELS 305Z, 565Z
Schematic, Voltage
SPU Layout

MODELS 305Z AND 565Z

For Parts List See Index

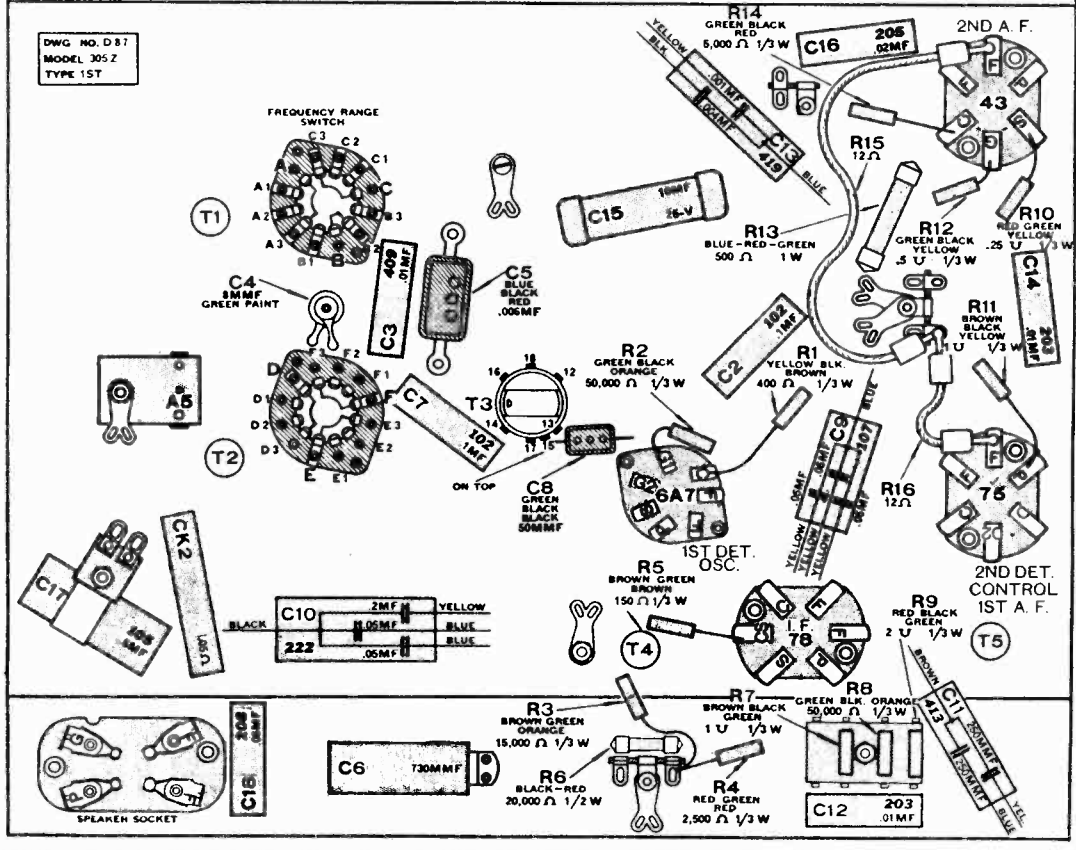
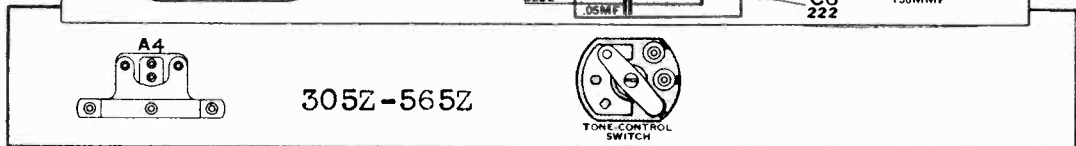
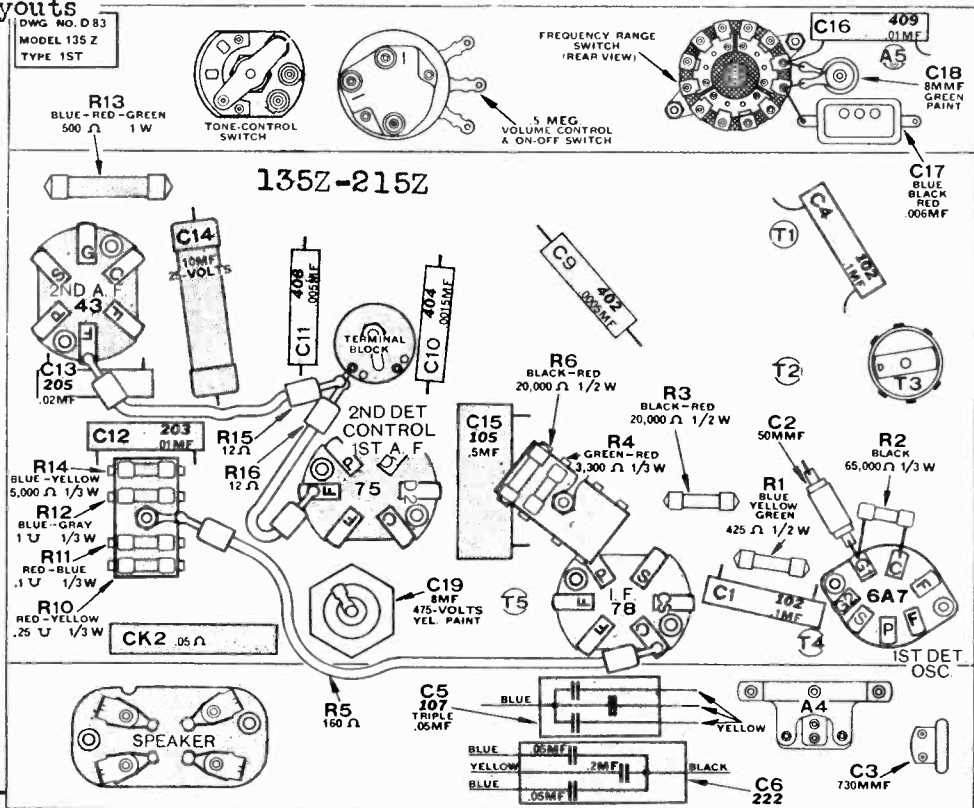


Charts Showing Location of Parts in Power Unit.

August 15, 1935.

MODELS 135Z, 215Z
MODELS 305Z, 565Z
Chassis Layouts

ATWATER-KENT MFG. CO.



ATWATER-KENT MFG. CO.

MODELS 135Z, 215Z
MODELS 305Z, 565Z
Parts Lists

PARTS LIST MODELS 135Z AND 215Z

For part numbers of tubular resistors and condensers, refer to lists in previous supplements.

TRANSFORMERS		SOCKETS	
T1 43060 No. 1 R. F. T.	28831 Cabinet with screen	21336 4-prong speaker socket unit	
T2 44970 No. 2 R. F. T.	27908 Screen	20985 5-prong tube socket on power unit	
T3 43080 Osc. trans. F. T.	28331 Excitecon and crystal	21337 5-prong cable socket on power unit	
T4 42750 Tone control switch assembly	27425 Volume control, 5 U	26986 6-prong tube socket on power unit	
T5 45150 No. 2 I. F. T.	39620 Tone control switch and blade	26988 Range switch	
T6 41820 Power T.	41670 Variable cond. assem.	26989 6-prong tube socket on chassis	
T7 21672 Output T.	27692 Tuning eye	26111 7-prong tube socket	
CONDENSERS		POWER UNIT	
C1 41650 120 MMF, 500-V., on wave trap	28281 Front and back plate assembly	(Models 135Z, 215Z, 305Z, 565Z)	
C4 25661 8 MMF, 500-V.	28452 Power unit less 84 tube	41910 Power unit complete with vibrator	
C5 25035 6000 MMF, 450-V.	28594 Tuning eye	28845 Power unit less 84 tube	
C6 45090 730 MMF, 500-V.	22657 Dial rubber and bushing	28452 Power unit container	
C8 23749 Fuse, 3 amps.	27947 Dial plate holder	28915 Side cover	
C15 25379 10 MF, 25-V. (electrolytic)	28354 Dial plate	28915 Side cover	
C25 26995 8 MF, 4 MF, 300-V.	28355 Dial plate (215Z)	28915 Side cover	
CHOKES		TRIMMERS	
CK1 41020 Wave trap assembly	28878 Lamp socket for lamp socket	A4 39630 Rear of chassis	
CK6 41780 Double layer choke	28219 Spring for lamp socket	A5 38890 Front of chassis	
CK8 36620 R. F. + B filter choke	28219 Spring for lamp socket	A6, 7 32860 On 4	
CK9 27011 A. F. + B filter choke (iron core)	28577 Cab and plug assembly (5-prong)	A8 40610 On T3	
Chokes not listed above are No. 36630.	22663 Tube shield	CHOKES	
SOCKETS		CK1 27792 In No. 2, I. F. T., assembly	
21336 4-prong speaker socket	22985 Knob, volume control (front)	CK3 27011 Filter choke (iron core)	
24494 6-prong tube socket on chassis	24296 Knob, tuning (back)	CK4 36620 +B R. F. filter	
26111 7-prong tube socket	27495 Knob, tone control	CK8 41780 Double-layer choke on power unit	
	26569 Knob, frequency range	CK9 41020 Trap choke and condenser assembly	
	27952 Instruction sheet, F-1159	Chokes not listed above are No. 36630.	
	28741 Shipping container (215Z)	TRANSFORMERS	
	TRANSFORMERS		T1 39850 No. 1 R. F. T.
	T1 39850 No. 1 R. F. T.	T2 39850 No. 2 R. F. T.	
	T3 39840 Oscillator trans.	T4 28625 No. 1 I. F. T.	
	T5 27791 No. 2 I. F. T.	T6 21672 Output trans.	
	T7 41820 Power trans.		

PARTS LIST MODELS 305Z AND 565Z

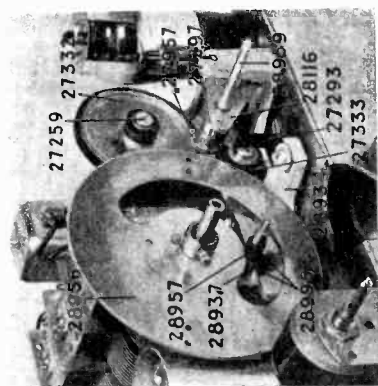
For part numbers of tubular resistors and condensers, refer to lists in previous supplements.

TRANSFORMERS		SOCKETS	
T1 43060 No. 1 R. F. T.	28831 Cabinet with screen	21336 4-prong speaker socket unit	
T2 44970 No. 2 R. F. T.	27908 Screen	20985 5-prong tube socket on power unit	
T3 43080 Osc. trans. F. T.	28331 Excitecon and crystal	21337 5-prong cable socket on power unit	
T4 42750 Tone control switch assembly	27425 Volume control, 5 U	26986 6-prong tube socket on power unit	
T5 45150 No. 2 I. F. T.	39620 Tone control switch and blade	26988 Range switch	
T6 41820 Power T.	41670 Variable cond. assem.	26989 6-prong tube socket on chassis	
T7 21672 Output T.	27692 Tuning eye	26111 7-prong tube socket	
CONDENSERS		POWER UNIT	
C1 41650 120 MMF, 500-V., on wave trap	28281 Front and back plate assembly	(Models 135Z, 215Z, 305Z, 565Z)	
C4 25661 8 MMF, 500-V.	28452 Power unit less 84 tube	41910 Power unit complete with vibrator	
C5 25035 6000 MMF, 450-V.	28594 Tuning eye	28845 Power unit less 84 tube	
C6 45090 730 MMF, 500-V.	22657 Dial rubber and bushing	28452 Power unit container	
C8 23749 Fuse, 3 amps.	27947 Dial plate holder	28915 Side cover	
C15 25379 10 MF, 25-V. (electrolytic)	28354 Dial plate	28915 Side cover	
C25 26995 8 MF, 4 MF, 300-V.	28355 Dial plate (215Z)	TRIMMERS	
CHOKES		A4 39630 Rear of chassis	
CK1 41020 Wave trap assembly	28878 Lamp socket for lamp socket	A5 38890 Front of chassis	
CK6 41780 Double layer choke	28219 Spring for lamp socket	A6, 7 32860 On 4	
CK8 36620 R. F. + B filter choke	28577 Cab and plug assembly (5-prong)	A8 40610 On T3	
CK9 27011 A. F. + B filter choke (iron core)	22663 Tube shield	CHOKES	
Chokes not listed above are No. 36630.	22985 Knob, volume control (front)	CK1 27792 In No. 2, I. F. T., assembly	
SOCKETS		CK3 27011 Filter choke (iron core)	
21336 4-prong speaker socket	24296 Knob, tuning (back)	CK4 36620 +B R. F. filter	
24494 6-prong tube socket on chassis	27495 Knob, tone control	CK8 41780 Double-layer choke on power unit	
26111 7-prong tube socket	26569 Knob, frequency range	CK9 41020 Trap choke and condenser assembly	
	27952 Instruction sheet, F-1159	Chokes not listed above are No. 36630.	
	28741 Shipping container (215Z)	TRANSFORMERS	
	TRANSFORMERS		T1 39850 No. 1 R. F. T.
	T1 39850 No. 1 R. F. T.	T2 39850 No. 2 R. F. T.	
	T3 39840 Oscillator trans.	T4 28625 No. 1 I. F. T.	
	T5 27791 No. 2 I. F. T.	T6 21672 Output trans.	
	T7 41820 Power trans.		

PARTS LIST MODELS 135Z AND 215Z

For part numbers of tubular resistors and condensers, refer to lists in previous supplements.

TRANSFORMERS		SOCKETS	
T1 43060 No. 1 R. F. T.	28831 Cabinet with screen	21336 4-prong speaker socket unit	
T2 44970 No. 2 R. F. T.	27908 Screen	20985 5-prong tube socket on power unit	
T3 43080 Osc. trans. F. T.	28331 Excitecon and crystal	21337 5-prong cable socket on power unit	
T4 42750 Tone control switch assembly	27425 Volume control, 5 U	26986 6-prong tube socket on power unit	
T5 45150 No. 2 I. F. T.	39620 Tone control switch and blade	26988 Range switch	
T6 41820 Power T.	41670 Variable cond. assem.	26989 6-prong tube socket on chassis	
T7 21672 Output T.	27692 Tuning eye	26111 7-prong tube socket	
CONDENSERS		POWER UNIT	
C1 41650 120 MMF, 500-V., on wave trap	28281 Front and back plate assembly	(Models 135Z, 215Z, 305Z, 565Z)	
C4 25661 8 MMF, 500-V.	28452 Power unit less 84 tube	41910 Power unit complete with vibrator	
C5 25035 6000 MMF, 450-V.	28594 Tuning eye	28845 Power unit less 84 tube	
C6 45090 730 MMF, 500-V.	22657 Dial rubber and bushing	28452 Power unit container	
C8 23749 Fuse, 3 amps.	27947 Dial plate holder	28915 Side cover	
C15 25379 10 MF, 25-V. (electrolytic)	28354 Dial plate	28915 Side cover	
C25 26995 8 MF, 4 MF, 300-V.	28355 Dial plate (215Z)	TRIMMERS	
CHOKES		A4 39630 Rear of chassis	
CK1 41020 Wave trap assembly	28878 Lamp socket for lamp socket	A5 38890 Front of chassis	
CK6 41780 Double layer choke	28219 Spring for lamp socket	A6, 7 32860 On 4	
CK8 36620 R. F. + B filter choke	28577 Cab and plug assembly (5-prong)	A8 40610 On T3	
CK9 27011 A. F. + B filter choke (iron core)	22663 Tube shield	CHOKES	
Chokes not listed above are No. 36630.	22985 Knob, volume control (front)	CK1 27792 In No. 2, I. F. T., assembly	
SOCKETS		CK3 27011 Filter choke (iron core)	
21336 4-prong speaker socket	24296 Knob, tuning (back)	CK4 36620 +B R. F. filter	
24494 6-prong tube socket on chassis	27495 Knob, tone control	CK8 41780 Double-layer choke on power unit	
26111 7-prong tube socket	26569 Knob, frequency range	CK9 41020 Trap choke and condenser assembly	
	27952 Instruction sheet, F-1159	Chokes not listed above are No. 36630.	
	28741 Shipping container (215Z)	TRANSFORMERS	
	TRANSFORMERS		T1 39850 No. 1 R. F. T.
	T1 39850 No. 1 R. F. T.	T2 39850 No. 2 R. F. T.	
	T3 39840 Oscillator trans.	T4 28625 No. 1 I. F. T.	
	T5 27791 No. 2 I. F. T.	T6 21672 Output trans.	
	T7 41820 Power trans.		

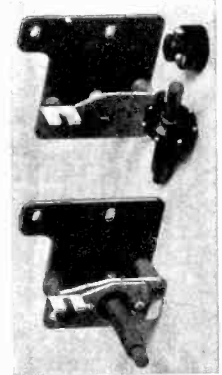


PARTS FOR TUNING MECHANISM

Illustration of Dual-Speed Tuning Mechanism in Models 305Z, 565Z, etc.

28944 Condenser mounting bracket	28934 Tuning gear bracket (rear)
28995 Gear stop stud	27947 Dial pointer holder
27947 Dial pointer holder	27696 Screw for the above
27696 Screw for the above	27759 Excitecon and crystal assem.
27759 Excitecon and crystal assem.	21522 Dial pointer
21522 Dial pointer	27535 Dial pointer screw
27535 Dial pointer screw	28116 Gear frame (rubber tired)
28116 Gear frame (rubber tired)	27333 Sarge gear (rubber tired)
27333 Sarge gear (rubber tired)	28959 Tuning shaft
28959 Tuning shaft	27297 Broadcast pinion gear
27297 Broadcast pinion gear	27297 Pin
27297 Pin	27293 Detention spring

Illustration of Early and Late Type Vernier Drive Arrangement used in Models 135Z, 215Z, etc.



EARLY TYPE LATE TYPE

Replacement, it is necessary to install the complete new type of two parts, No. 28281, front-and-back-plate assembly; and No. 28894, tuning shaft assembly.
The dial rubber and bushing, No. 22657, is the same in both type

August 15, 1935.

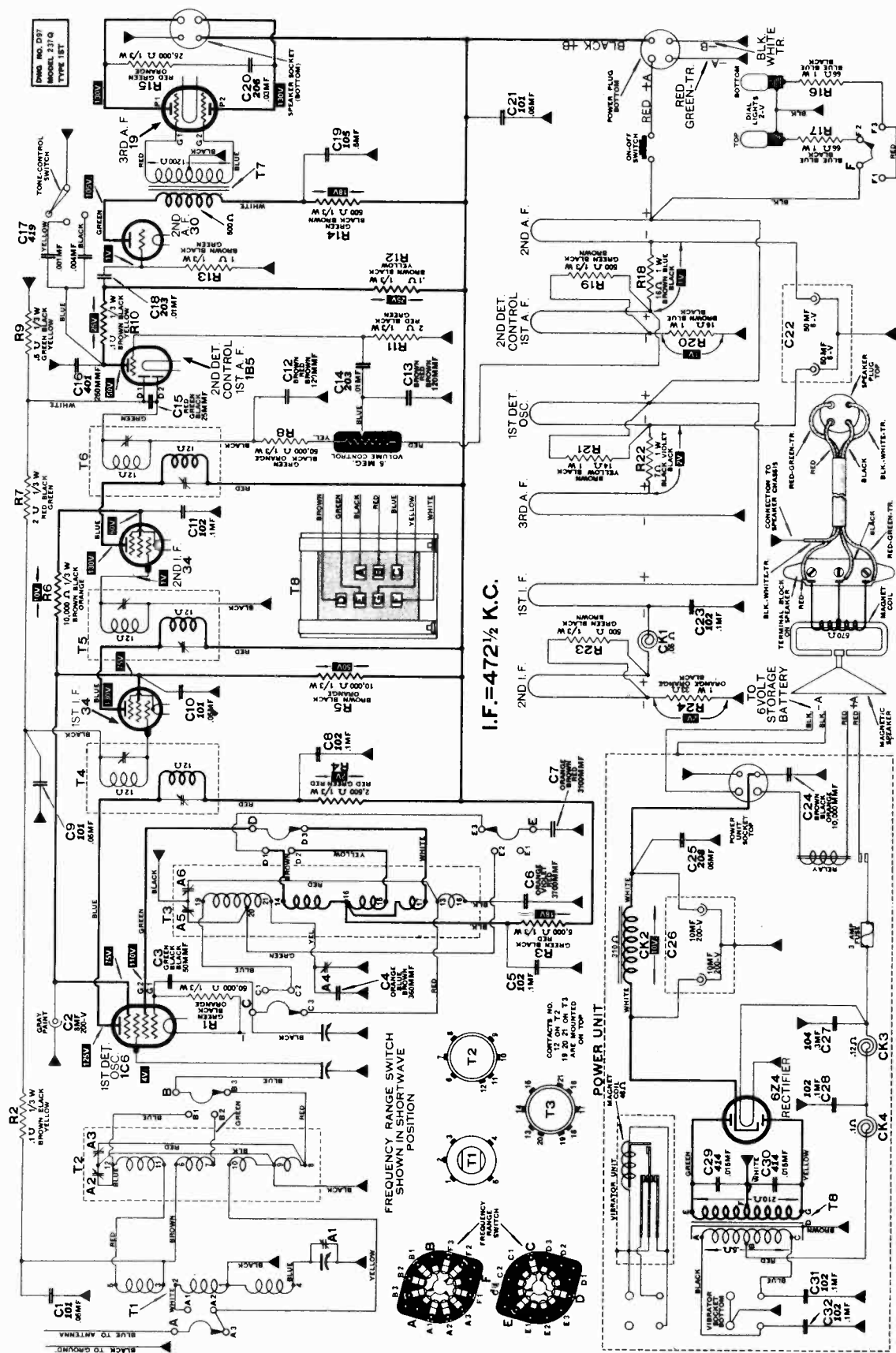
August 15, 1935.

MODELS 237Q, 467Q
Schematic, Voltage

ATWATER-KENT MFG. CO.

TENTATIVE SERVICE DATA
MODELS 237Q AND 467Q

For Alignment Data
See Index.

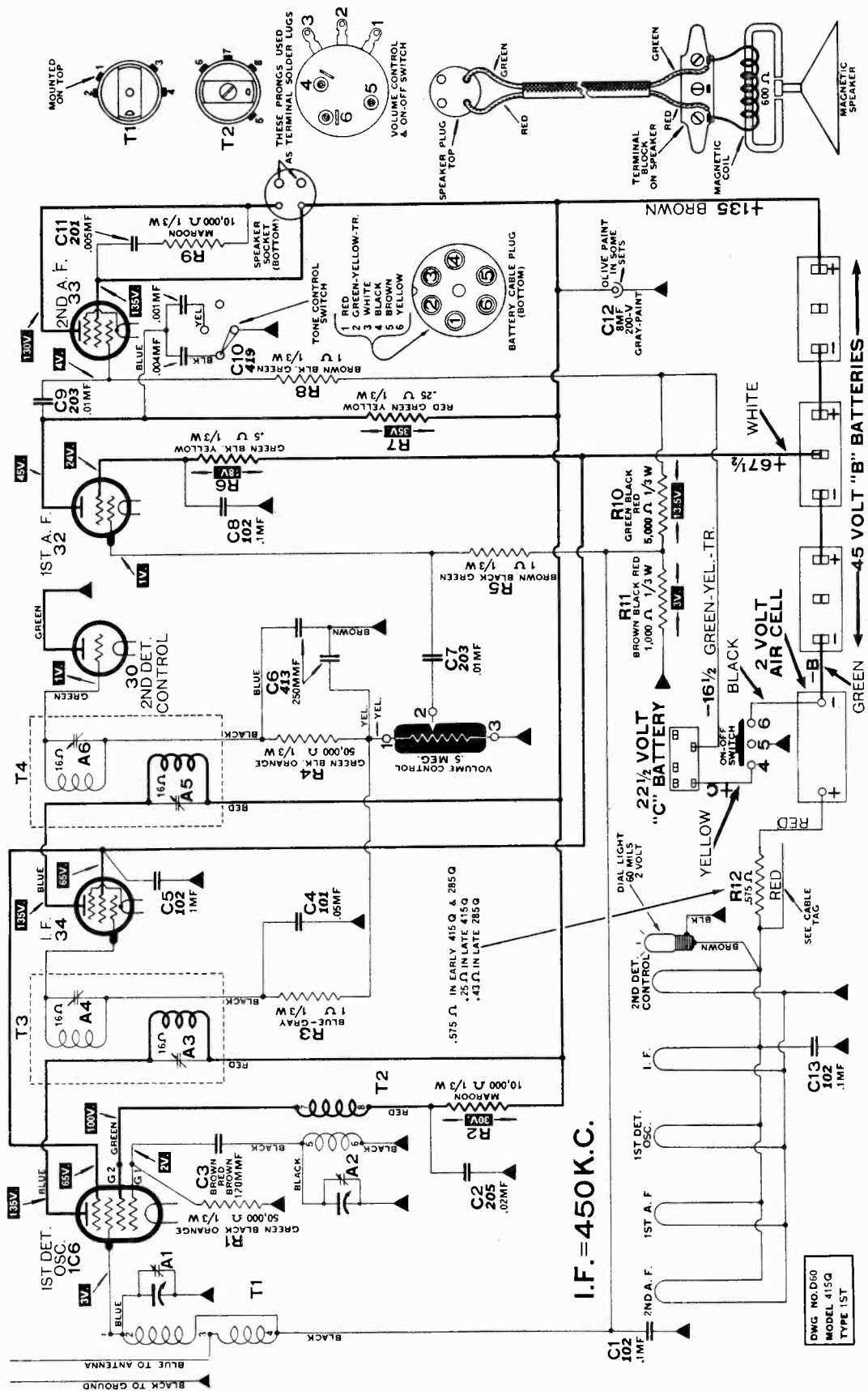


August 10, 1935.

MODELS 285Q, 415Q
Schematic, Voltage

ATWATER-KENT MFG. CO.

MODELS 285Q AND 415Q



I.F. = 450K.C.

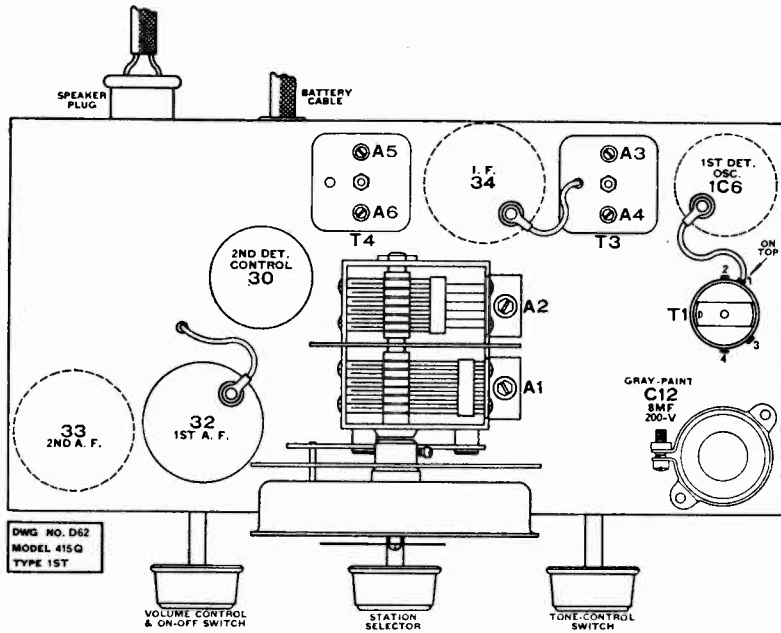
DWG. NO. D60
MODEL 415Q
TYPE 1ST

CHANGES. In late sets trimmer A1 is omitted; resistor R10 is 7500 ohms and resistor R11 is 1500 ohms.

June, 1935

MODELS 285Q, 415Q
Trimmers, Chassis
Alignment

ATWATER-KENT MFG. CO.

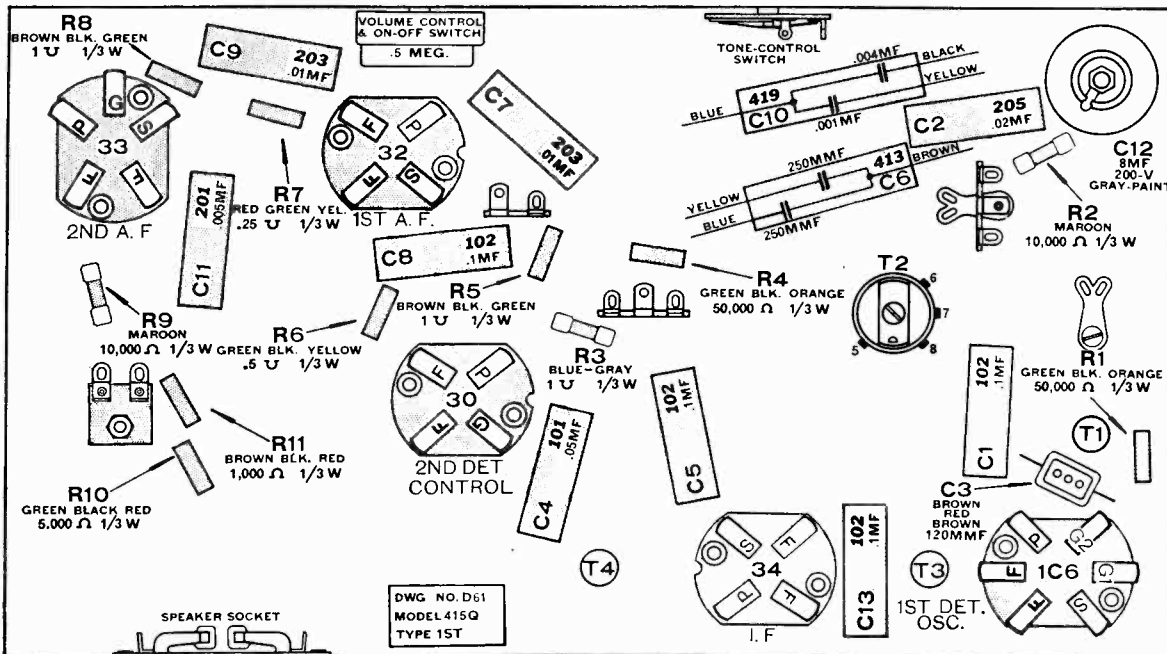


ADJUSTING TRIMMERS

I. F. Connect I. F. test oscillator (450 KC) to I. F. tube by means of regular I. F. coupling unit. Adjust A6 and A5 for maximum output. Connect coupling unit to 1st-detector and peak A4 and A3.

DIAL. With rotor of variable condenser fully meshed, dial indicator should be at 545 KC.

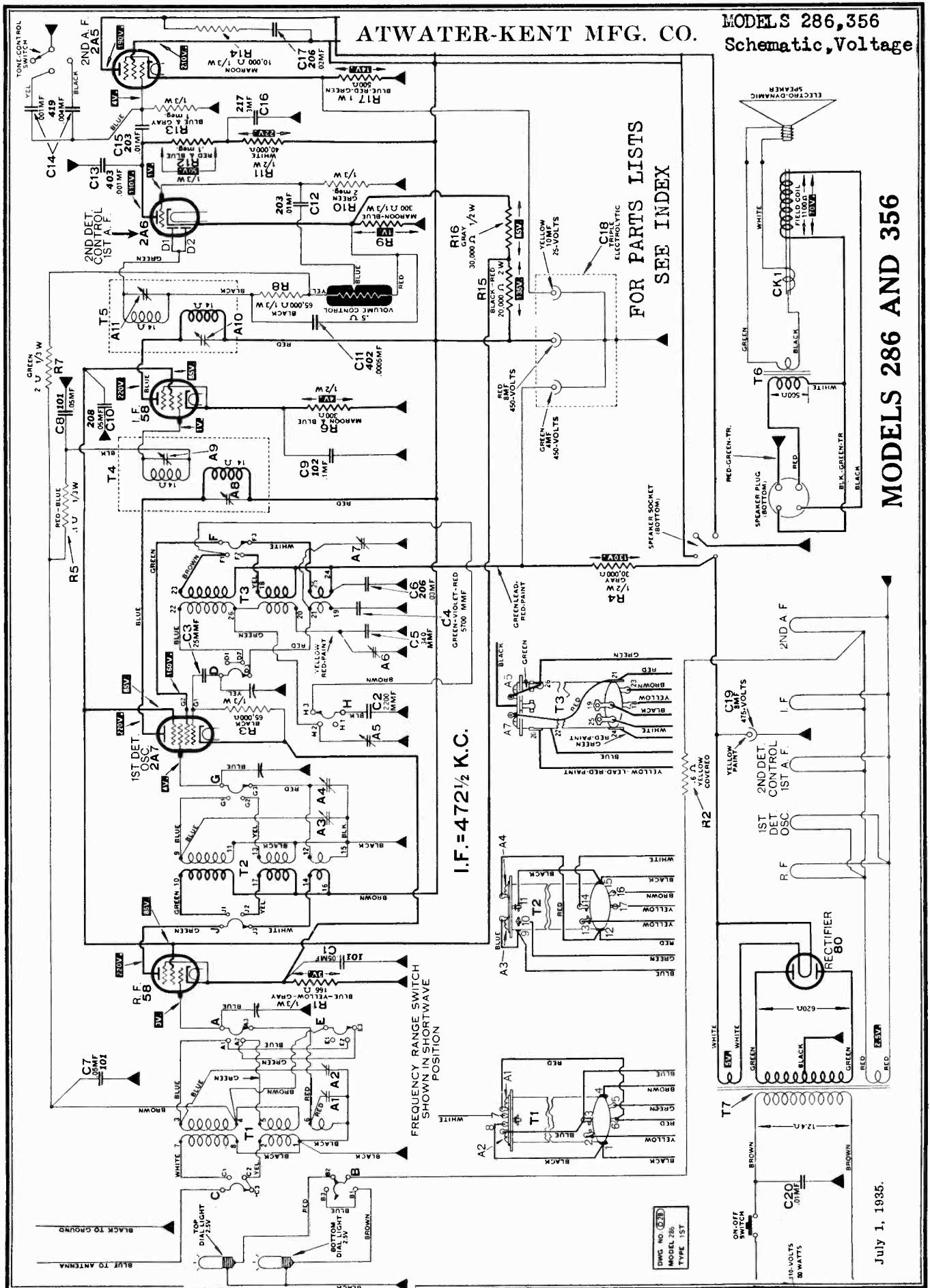
R. F. Connect R. F. test oscillator (1700 KC) to antenna and ground. With dial at 1700 KC, Peak A1 and A2. (On late sets A1 is not used.)



In late sets, R10 is 7500 ohms, and R11 is 1500 ohms.

ATWATER-KENT MFG. CO.

MODEL S 286,356
Schematic, Voltage



MODELS 286 AND 356

July 1, 1935.

MODELS 286, 356
Trimmers, Chassis
Alignment

ATWATER-KENT MFG. CO.

I. F. TRIMMERS.

Connect test oscillator (472½ KC) to I. F. tube by means of regular I. F. coupling unit. Peak A10, A11. Connect oscillator to 1st-detector tube and peak A8, A9.

DIAL POINTER ADJUSTMENT.

With rotor of variable condenser fully meshed, dial indicator should be at 535 KC.

R. F. TRIMMERS.

Connect an R. F. oscillator to antenna and ground of set.

Short-wave range. With oscillator and dial at 15 MC, peak A7, A4, A1.

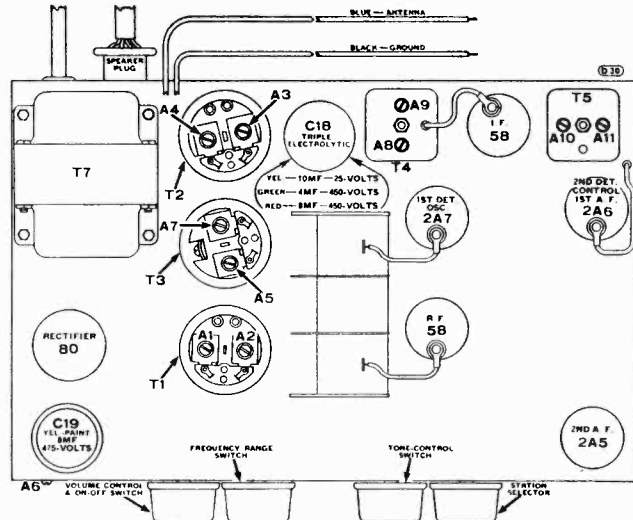
Police range. No trimmers on this range.

Broadcast range. With oscillator and dial at 1500 KC, peak A5, A3, A2. With oscillator and dial at 560 KC, peak A6.

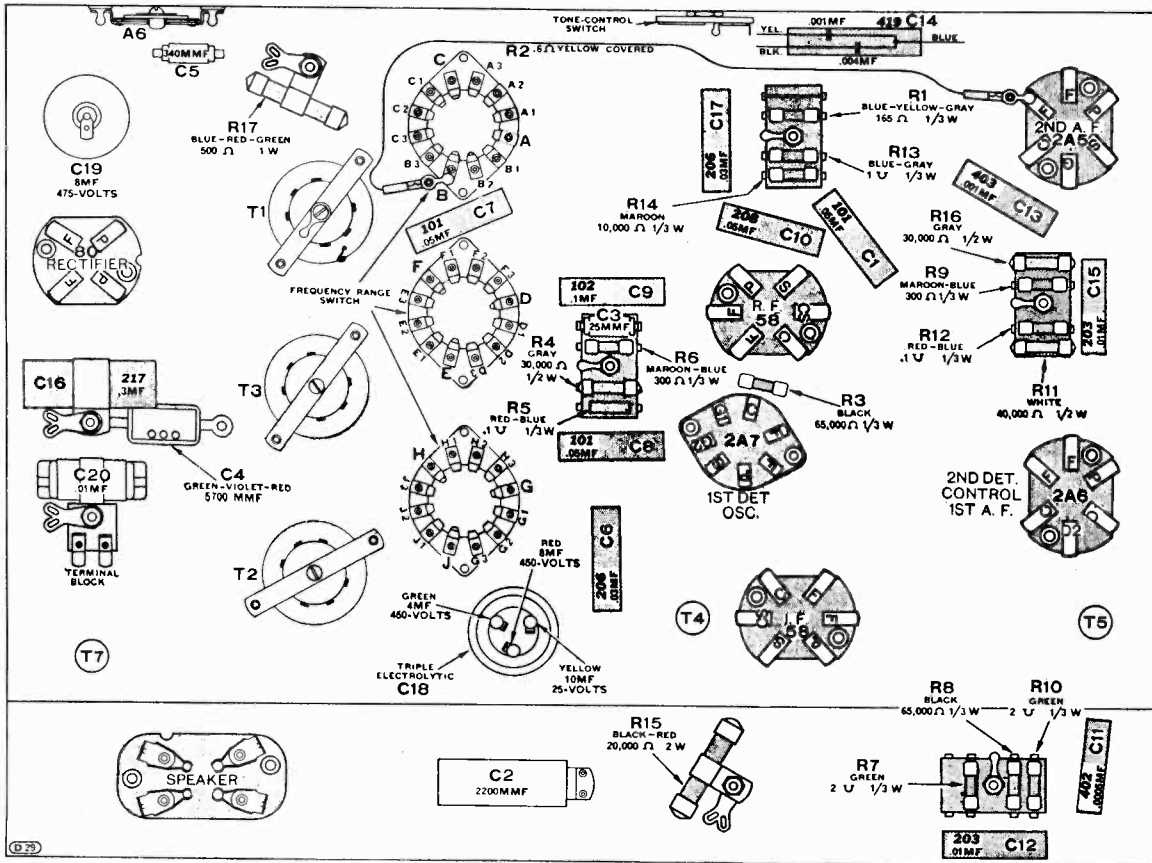
MODELS 286 AND 356

TRIMMERS

- A1—R. F., 15 MC.
- A2—R. F., 1500 KC.
- A3—1st-detector, 1500 KC.
- A4—1st-detector, 15 MC.
- A5—Oscillator, 1500 KC.
- A6—Oscillator, 560 KC.
- A7—Oscillator, 15 MC.
- A8—1st-detector plate, 472½ KC.
- A9—I. F. grid, 472½ KC.
- A10—I. F. plate, 472½ KC.
- A11—2nd-detector, 472½ KC.



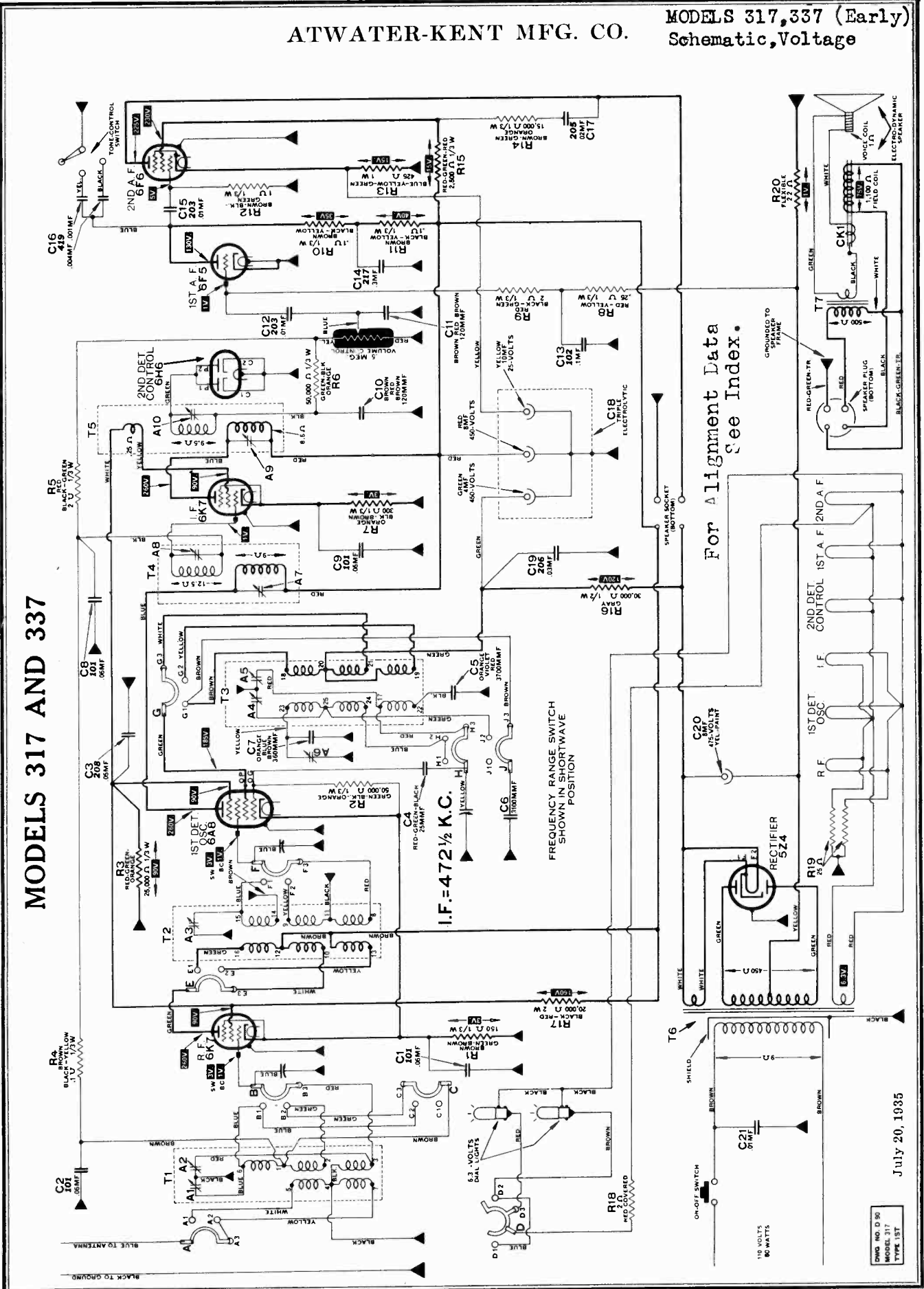
Trimmer location, Models 286, 356



ATWATER-KENT MFG. CO.

MODELS 317,337 (Early)
Schematic, Voltage

MODELS 317 AND 337



For Alignment Data
See Index.

I.F. = 472 1/2 K.C.

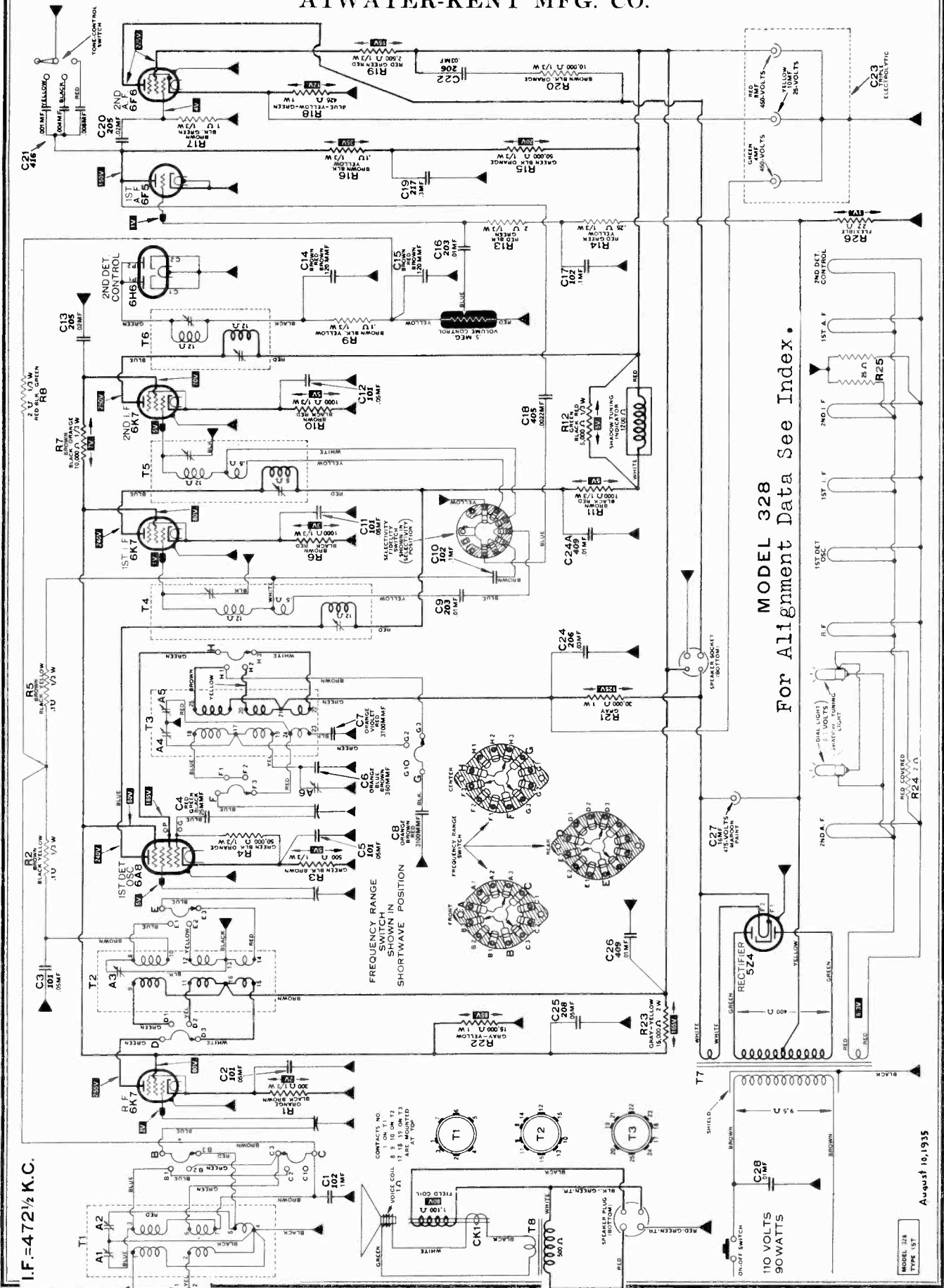
July 20, 1935

DWG NO. D 90
MODEL 317
TYPE 1ST

MODEL 328 (Early)

ATWATER-KENT MFG. CO.

Schematic, Voltage



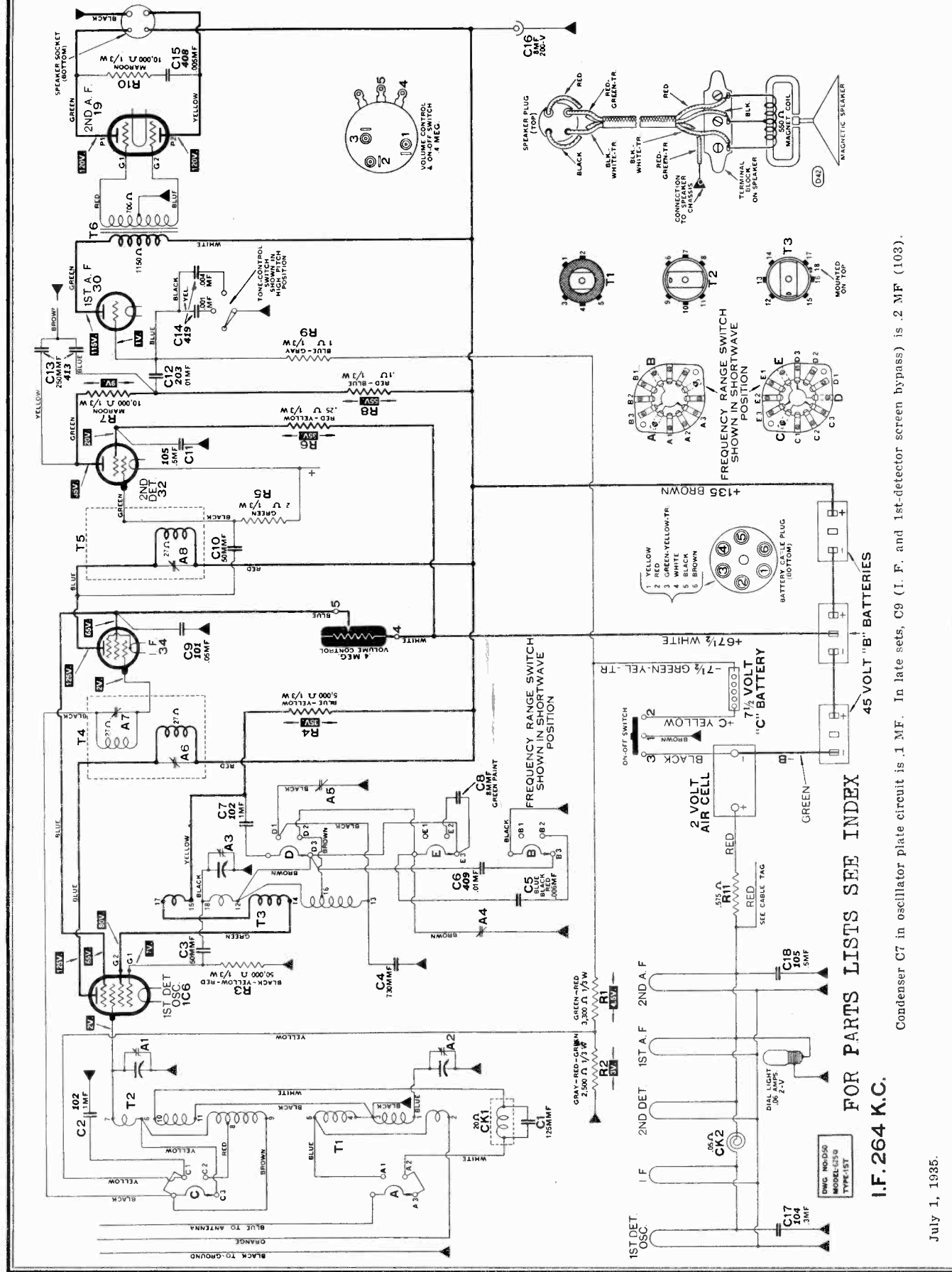
For Alignment Data See Index.

I.F. = 472 1/2 K.C.

August 16, 1935

ATWATER-KENT MFG. CO.

MODEL S 385Q, 625Q
Schematic, Voltage



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FOR PARTS LISTS SEE INDEX
I.F. 264 K.C.

July 1, 1935.

MODELS 385Q, 625Q
 Trimmers, Socket
 Chassis, Alignment

ATWATER-KENT MFG. CO.

MODELS 385Q AND 625Q

I. F. TRIMMERS.

Connect I. F. test oscillator (264 KC) to I. F. tube by means of regular I. F. coupling unit. Peak A8. Connect I. F. oscillator to 1st-detector tube and peak A6, A7.

DIAL POINTER ADJUSTMENT.

With rotor of variable condenser fully meshed, dial indicator should be at 535 KC.

R. F. TRIMMERS.

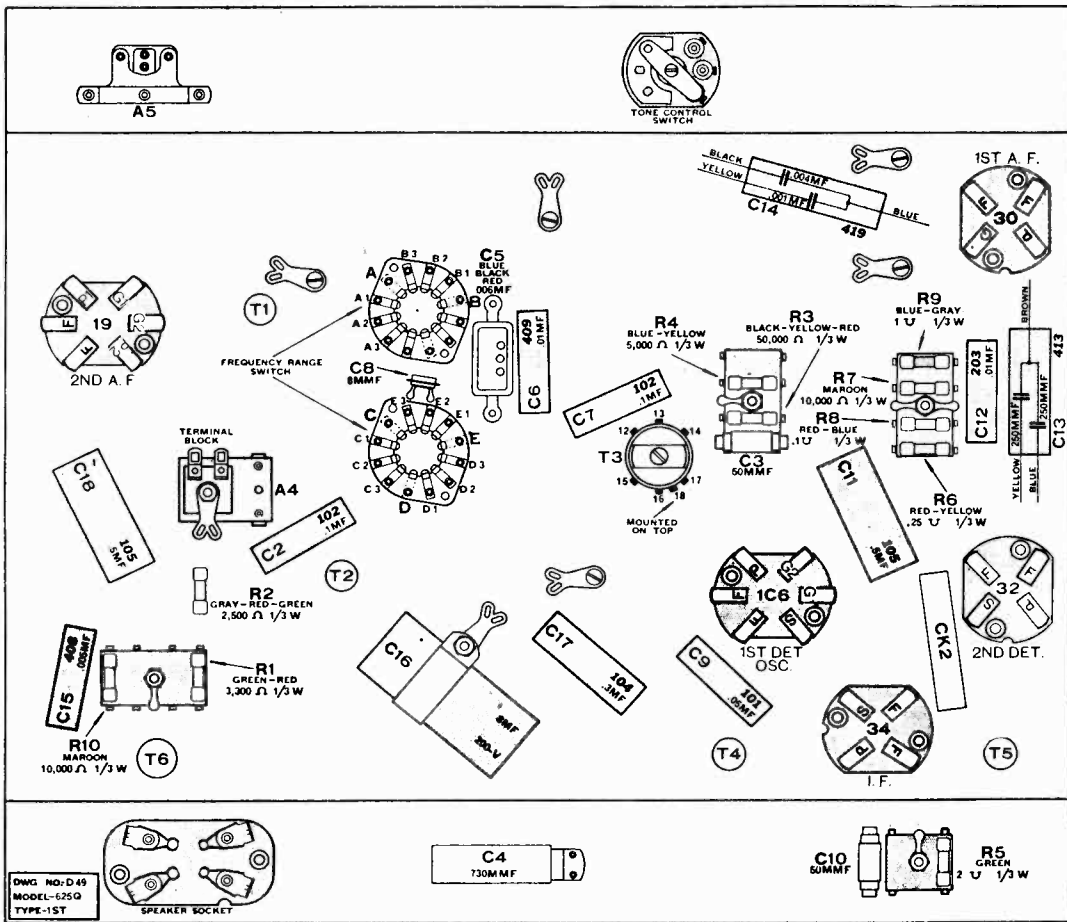
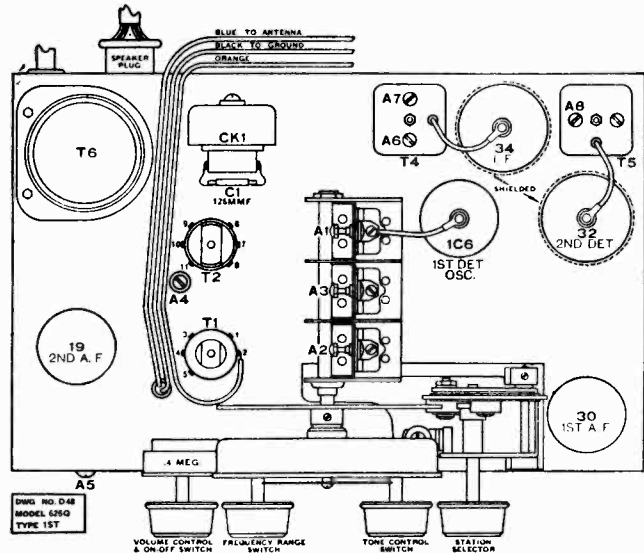
Connect an R. F. oscillator to the antenna and ground of set. *Short-wave range.* With oscillator and dial at 15 MC, peak A3.

Police range. No trimmers on this range.

Broadcast range. With oscillator and dial at 1500 KC, peak A4, A1, A2. With oscillator and dial at 560 KC, peak A5.

TRIMMERS

- A1—1st-detector, 1500 KC.
- A2—Pre-selector, 1500 KC.
- A3—Oscillator, 15 MC.
- A4—Oscillator, 1500 KC.
- A5—Oscillator, 560 KC.
- A6—1st-detector plate, 264 KC.
- A7—I. F. grid, 264 KC.
- A8—I. F. plate, 264 KC.

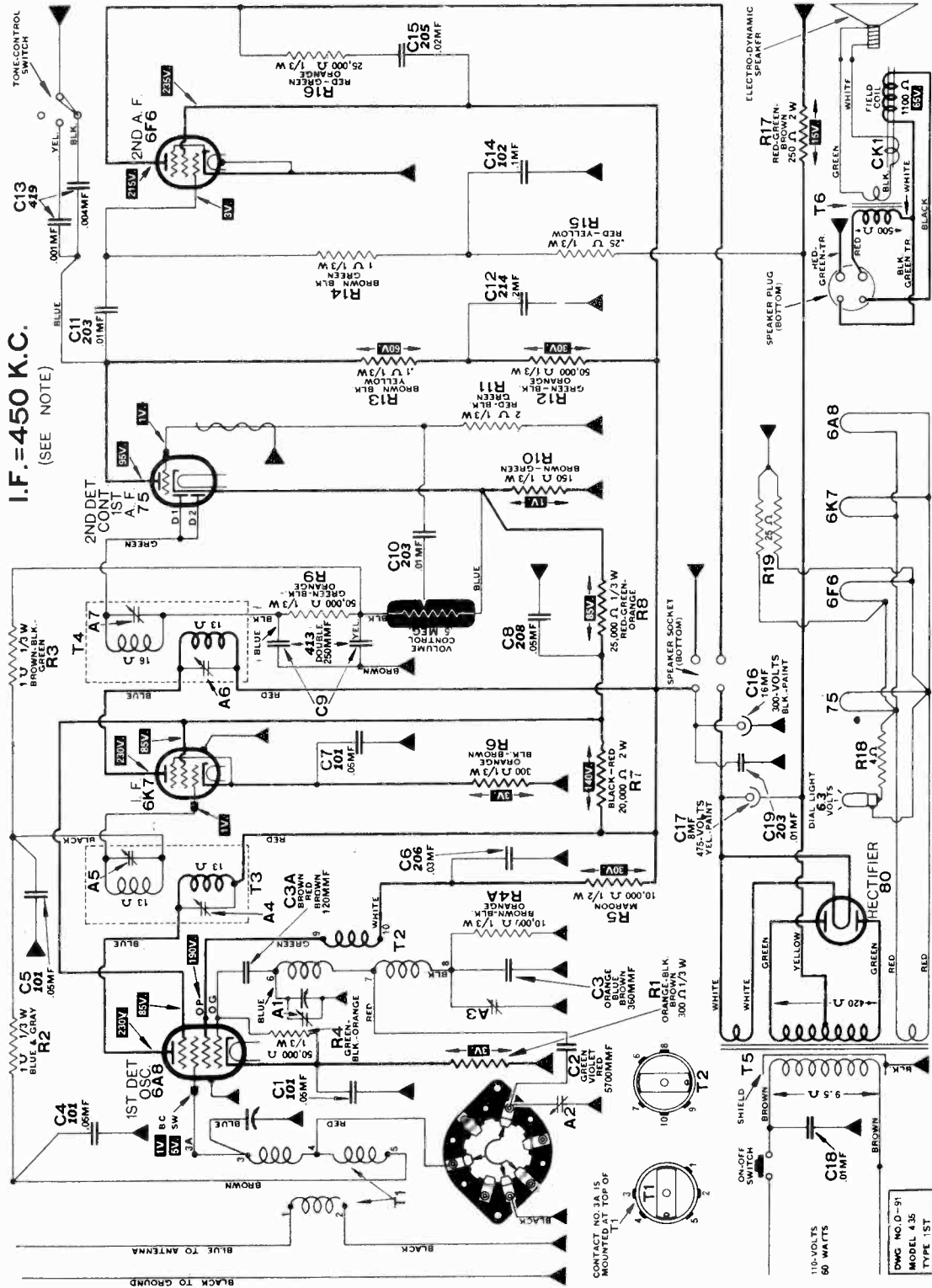


DWG NO: D-49
 MODEL-625Q
 TYPE-1ST
 SPEAKER SOCKET

ATWATER-KENT MFG. CO.

MODEL 435 (Early)
Schematic, Voltage

MODEL 435 DIAGRAM



The frequency-range switch is shown in the short-wave position.

The I. F. in some Model 435 sets is 472½ KC and a label to this effect is attached to the rear of the chassis. The I. F. transformers and trimmers, etc., are exactly the same for either 450 or 472½ KC.

MODELS 286, 356
 MODELS 385Q, 625Q
 MODELS 475, 735
 Parts Lists

ATWATER-KENT MFG. CO.

MODELS 286, 356

- 29404 Cabinet with screen (356)
- 29127 Screen (356)
- 28531 Escutcheon and crystal
- 28954 Range switch
- 28961 Vol. control
- 42750 Tone control switch assem.
- 29101 Shaft and blade for the above
- 28946 Knob without dot (tuning and range)
- 28947 Knob with dot (volume and tone)
- 27432 Var. condenser
- 28968 Dial holder
- 28542 I. F. T. shield
- 27933 T1, T2 shield
- 27932 T3 shield
- 40090 Dial light socket assem.
- 27676 Dial lamp, 2.5-V (frosted)
- 22683 Tube shield
- 25058 R. F. T. shield cover
- 15213 Tube shield (R. F.)
- 29038 Shipping container (286)
- 29135 Shipping container (356)
- 29017 Instruction sheet, F-1217

TRANSFORMERS

- T1 42560 No. 1 R. F. T.
- T2 42570 No. 2 R. F. T.
- T3 42580 Osc. trans.
- T4 28527 No. 1 I. F. T. (includes trimmers)
- T5 28528 No. 2 I. F. T. (includes trimmers)
- T6 21672 Output trans.
- T7 28084 Power trans.

RESISTORS

- R2 16081 .6 Ω dial light resis.

CONDENSERS

- C2 40380 2200 MMF, 100-V.
- C3 33930 25 MMF, 500-V.
- C4 27599 5700 MMF, 450-V.
- C5 41580 340 MMF, 500-V.
- C18 27592 Triple elec., 4 MF, 8 MF, 450-V., 10 MF, 25-V.
- C19 28031 8 MF, 475-V.
- C20 23250 .01 MF, 450-V., line cond.

TRIMMERS

- A1, 2 39430 On T1
- A3, 4 39430 On T2
- A5, 7 39430 On T3
- A6 39630 Front of chassis (560 KC)

SOCKETS

- 24492 4 prong
- 24494 6 prong
- 26111 7 prong
- 21336 Speaker

475 and 286 SPEAKER No. 41800

- 25525 Small choke
- 21260 Field coil (1100 Ω)
- 21672 Output transformer
- 20737 Diaphragm
- 27611 Cable and plug
- 15079 Plug

735 and 356 SPEAKER No. 41900

- 25525 Small choke
- 21260 Field coil (1100 Ω)
- 21672 Output transformer
- 19465 Diaphragm
- 28345 Cable and plug
- 15079 Plug

MODELS 475, 735

- 29403 Cabinet with screen (735)
- 29143 Screen (735)
- 28531 Escutcheon and crystal assem.
- 27431 Variable condenser
- 42750 Tone control switch assem.
- 29101 Shaft and blade for the above
- 28961 Volume control, .5 U
- 28986 Range switch
- 28946 Knob without dot
- 28947 Knob with dot
- 28968 Dial holder
- 29121 Dial plate (735)
- 28989 Dial plate (475)
- 29183 I. F. T. shield
- 41020 Wave trap assem. (264 KC)
- 40090 Dial light socket assem.
- 27676 Dial lamp, 2.5-V. (frosted)
- 22683 Tube shield
- 28993 Base cover (475)
- 29133 Instruction sheet, F-1217
- 29184 Shipping container (735)
- 29038 Shipping container (475)

TRANSFORMERS

- T1 43060 No. 1 R. F. T.
- T2 43070 No. 2 R. F. T.
- T3 43080 Osc. trans.
- T4 43290 No. 1 I. F. T.
- T5 43310 No. 2 I. F. T.
- T6 21672 Output trans. (on speaker)
- T7 25191 Power trans.

RESISTORS

- R1 16081 .6 Ω dial light

CONDENSERS

- C1 41650 125 MMF, 500-V.
- C2 25035 .006 MF, 450-V.
- C3 25661 8 MMF, 500-V.
- C7 42830 800 MMF, 100-V.
- C9 33930 25 MMF, 500-V.
- C20 25379 10 MF, 25-V.
- C21 28031 8 MF, 475-V.
- C22 27585 8 MF, 350-V.

TRIMMERS

- A4 28843 Osc. trimmer
- A5 39630 On front of chassis
- A6, 7 29119 On T4
- A8, 9 29119 On T5

CHOKES

- CK2 25525 On speaker

SOCKETS

- 24492 4 prong
- 24494 6 prong
- 26111 7 prong
- 21336 Speaker

PARTS FOR TUNING MECHANISM

(Used in all sets in this supplement)

- 28944 Condenser mounting bracket (rear)
- 28934 Tuning gear bracket
- 28995 Gear stop stud
- 28956 Tuning gear
- 27947 Dial pointer holder
- 27696 Screw for the above
- 28531 Escutcheon and crystal assem.
- 27522 Dial pointer
- 27535 Dial pointer screw
- 28116 Gear frame
- 27332 Large gear (rubber tired)
- 27333 Small gear (rubber tired)
- 28959 Tuning shaft
- 27957 Broadcast pinion gear
- 27297 Pin
- 27293 Detention spring

MODELS 385Q, 625Q

- 28986 Range switch
- 42750 Tone control switch assembly
- 29101 Shaft and blade for above
- 29251 Volume control, 4 U
- 40090 Dial light socket assembly
- 26721 Lamp, 2-V., .06 amp.
- 27431 Variable cond. assem.
- 29262 Dial holder
- 28531 Escutcheon and crystal assem.
- 29228 Dial plate (625Q)
- 29229 Dial plate (385Q)
- 29282 Tube shield (paper)
- 29183 I. F. T. shield
- 24327 Wave trap shield
- 29236 Instruction sheet, F-1238
- 29038 Shipping container (385Q)
- 29135 Shipping container (625Q)
- 30032 Cabinet with screen (625Q)
- 29127 Screen
- 28993 Base cover
- 41020 Wave trap assem. (264 KC)

CABLES

- 29331 Male cable and plug assembly (625Q)
- 29673 Female cable and socket assem. (385Q and 625Q)
- 30036 Male cable and plug assem. (385Q)
- 29055 Battery socket assembly
- 29054 Battery plug assembly
- 29227 Battery cable tag, F-1234

TRANSFORMERS

- T1 43060 Antenna trans.
- T2 44040 1st-det. trans.
- T3 44050 Osc. trans.
- T4 44070 No. 1 I. F. transformer
- T5 44170 No. 2 I. F. transformer
- T6 44240 Audio transformer

RESISTORS

- R11 40330 .575 Ω (on cable)
- 44230 1.03 Ω (in envelope)

CONDENSERS

- C1 41650 125 MMF, 500-V.
- C3 35840 50 MMF, 500-V.
- C4 43970 730 MMF, 100-V.
- C5 25035 .006 MF, 450-V., blue, blk., red
- C8 25661 8 MMF, 500-V.
- C10 35840 50 MMF, 500-V.
- C16 22472 8 MF, 200-V., dry electro.

TRIMMERS

- A4 28843 Osc. BC trimmer
- A5 39630 Osc. track cond.
- A6, 7 29119 On No. 1 I. F. T.
- A8 29119 On T5, No. 2 I. F. T.

CHOKES

- CK2 44160 Filament choke

SOCKETS

- 24492 4 prong
- 24494 6 prong
- 21336 Speaker

385Q SPEAKER No. 46800
 625Q SPEAKER No. 46700

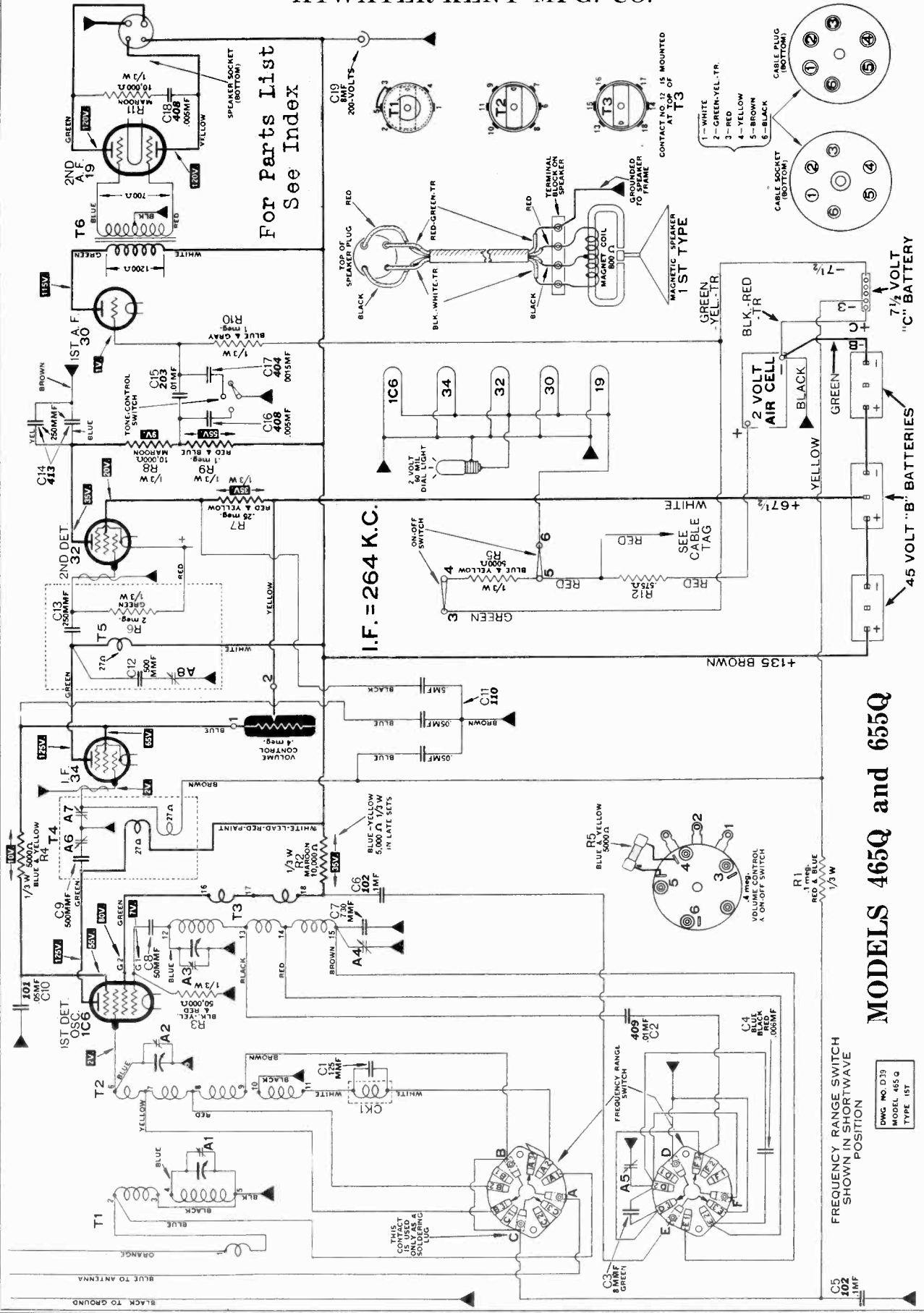
- 28974 Cone housing (625Q)
- 28979 Cone housing (385Q)
- 19469 Segment
- 29074 Cable and plug assembly
- 29075 Diaphragm assembly
- 29076* Sound unit complete
- 29077 Drive rod
- 17868 Drive rod nut

* Parts for this unit are not sold separately.

Schematic, Voltage

ATWATER-KENT MFG. CO.

MODELS 465Q, 655Q



For Parts List See Index

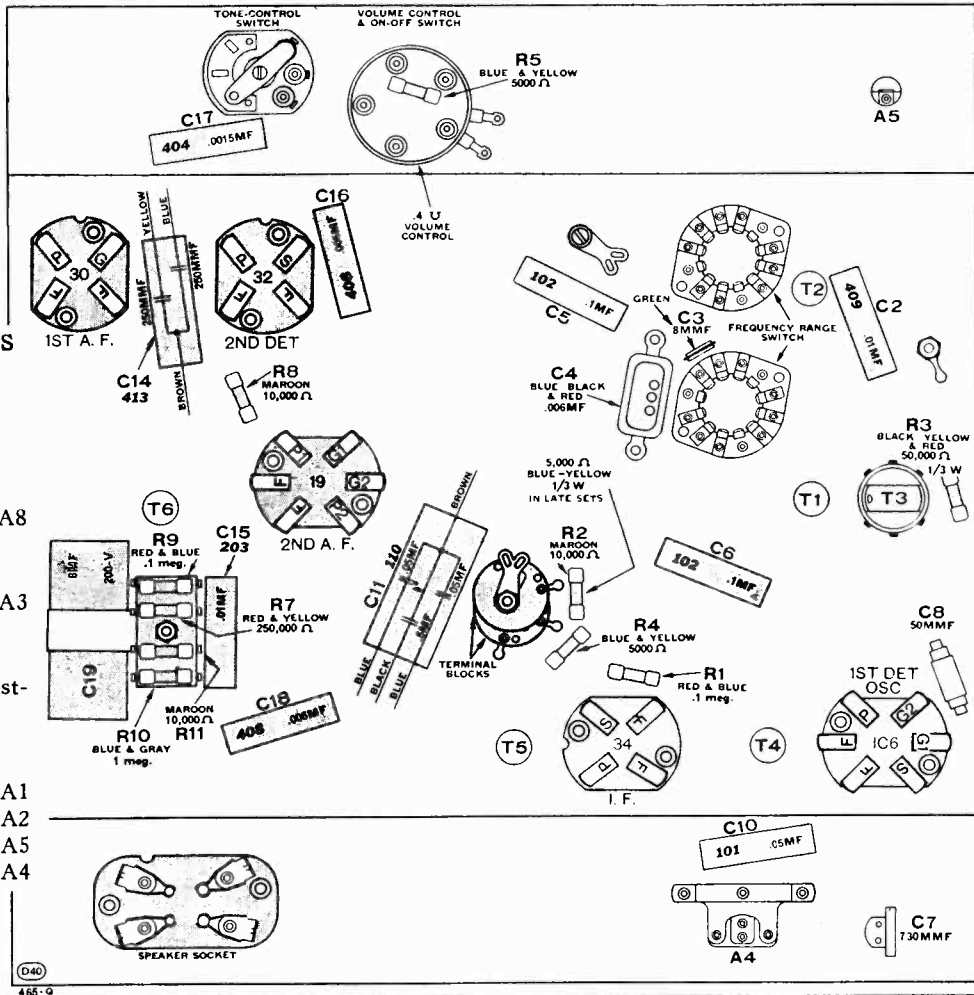
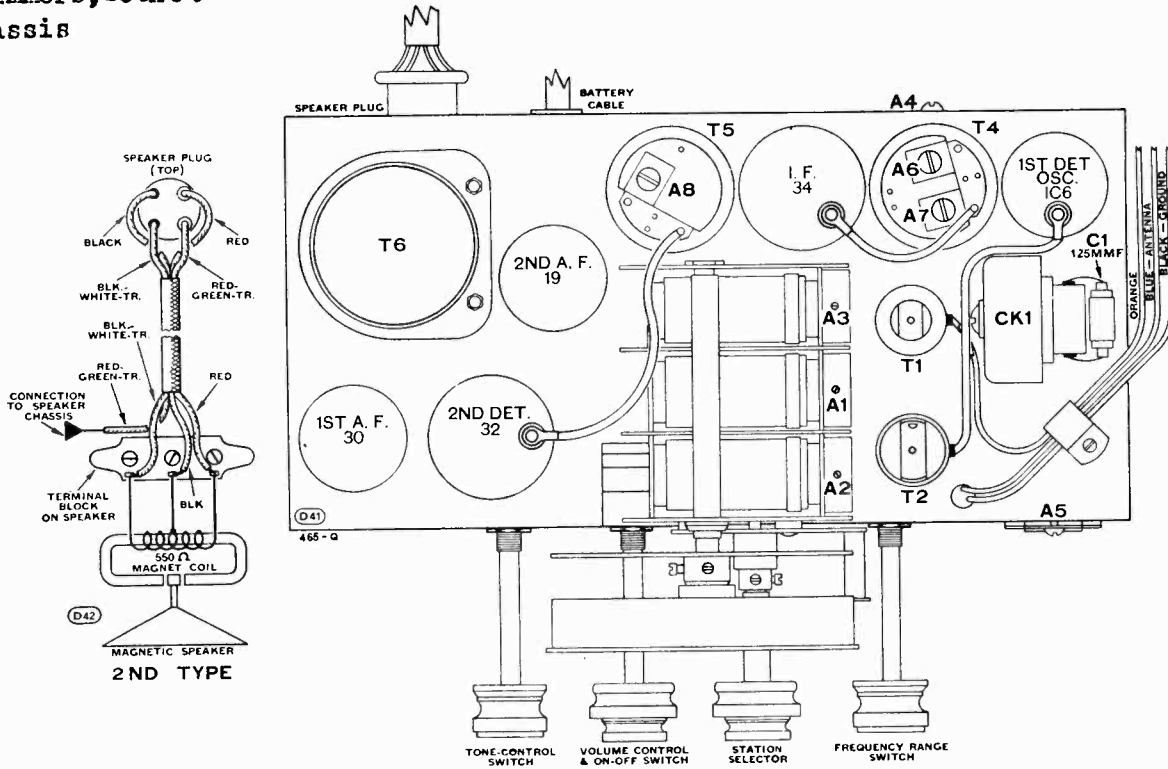
I.F. = 264 K.C.

MODELS 465Q and 655Q

A choke, No. 36630, not shown above, is used in the filament circuit of some Model 465Q and 655Q sets. Connections of the 2nd type speaker are shown on page 6-25

MODELS 465Q, 655Q
Trimmers, Socket
Chassis

ATWATER-KENT MFG. CO.



TRIMMERS ON MODELS
465Q and 655Q

I. F. TRIMMERS

I. F. (264 KC).....A6, A7, A8

5.3 to 16 MC RANGE

Oscillator (15MC).....A3

1.6 to 4.8 MC RANGE

There are no trimmer adjustments for this range.

540 to 1600 KC RANGE

Antenna (1500 KC).....A1

1st-Det. (1500 KC).....A2

Oscillator (1500 KC).....A5

Tracking (560 KC).....A4

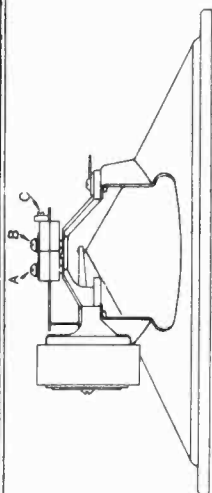
ATWATER-KENT MFG. CO.

MODELS 465Q, 655Q
 Speaker Data, Alignment
 MODELS 768Q, 978Q
 Speaker Data

SERVICE DATA

MODELS 465Q, 655Q, 768Q and 978Q

SPEAKER ADJUSTMENT

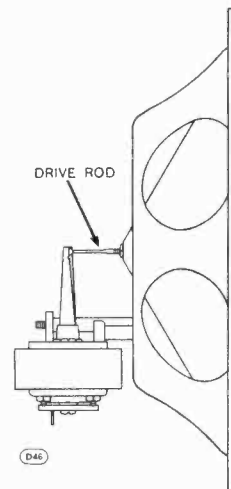


1st TYPE

1st Type: When adjustment is required, place set and speaker in operation and tune in a signal. Loosen screw A and tighten B, or vice versa, in order to center the armature in the magnet gap. If the armature is not correctly centered, it may strike against one pole of the magnet and cause chattering. If the speaker overloads or chatters only on a very strong signal, turn screw C anti-clockwise. This tightens the armature movement. In general it is not advisable to disturb the adjustment of screw C.

2nd Type: There are no centering adjustments on the 2nd type speaker used in late models 465Q and 655Q. If the unit becomes open or requires adjustment, it is necessary to replace the complete sound unit.

The diaphragm is clamped to the drive rod between two nuts. When installing a new diaphragm or unit, turn the rear nut back on the drive rod, fasten the diaphragm or unit to cone housing, and turn rear nut forward until it touches apex of diaphragm. Put the front nut on drive rod and tighten securely.



2nd TYPE

SYNCHRONIZING TRIMMER CONDENSERS

MODELS 465Q and 655Q

I. F. TRIMMERS.

Connect an I. F. test oscillator to the 1st-detector tube by means of the standard I. F. coupling unit described in January, 1935, supplement. Adjust the I. F. oscillator to 264KC. Connect a sensitive output meter to the set. Use the weakest possible oscillator signal that will give a reading on the output meter with the radio volume control on full. Turn the set to a quiet point near 1000 KC.

Peak trimmers A6, A7, and A8. Remove the I. F. coupling unit and seal the I. F. trimmers.

DIAL POINTER ADJUSTMENT.

With the variable condenser all the way in, the dial pointer should be set at 535 KC.

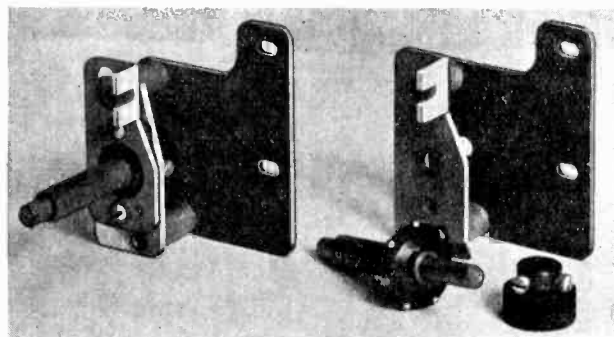
R. F. TRIMMERS.

Connect an R. F. test oscillator to the antenna and ground terminals of set. Use the weakest possible oscillator signal. Loosen the trimmer screws.

Short-wave range. Oscillator at 15 MC, and set turned to 15 MC mark, peak trimmer A3.

Police range. There are no trimmer adjustments for this range.

Broadcast range. Oscillator at 1500 KC, and dial pointer at 1500 KC mark, peak trimmers A5, A2 and A1. Tune oscillator and set to 560 KC. Peak A4. Repeat adjustments on A5 at 1500 KC and A4 at 560 KC if necessary.



EARLY TYPE

LATE TYPE

*Illustration of Early and Late Type Vernier Drive Arrangements used in Models 465Q, 655Q, etc.

The early type is superseded by the late type and parts for the early type are NOT furnished. When any part of the early type drive requires

replacement, it is necessary to install the complete new type assembly, which consists of two parts: No. 28281, front-and-back-plate assembly; and No. 28594, tuning shaft assembly.

The dial rubber and bushing, No. 22657, is the same in both types.

MODELS 465Q, 655Q
MODELS 768Q, 978Q
Parts Lists

ATWATER-KENT MFG. CO.

PARTS LIST FOR MODEL 465Q

- CONDENSERS
C1 41650 125 MMF. mica
C2 32810 .01 MF. 400-V. (409)
C3 28341 8 MMF. 500-V. mica
C4 25035 .006 MF. blue, black, red
C5 31530 1 MF. 100-V. (102)
C6 31530 1 MF. 100-V. (102)
C7 39660 730 MMF. 100-V. mica
C8 33840 50 MMF. 500-V. mica
C9 36510 50 MMF. 500-V. mica
C10 31160 .05 MF. 100-V. (101)
C11 31920 .05, .05, and .5, 100-V. (110)
C12 36510 500 MF. 500-V. mica
C13 33670 250 MMF. 500-V. mica
C14 33630 250 and 250 MMF. 400-V. (413)
C15 27630 .01 MF. 200-V. (203)
C16 29890 .005 MF. 400-V. (408)
C17 36650 .0015 MF. 400-V. (404)
C18 29890 .005 MF. 400-V. (408)
C19 22472 8 MF. 200-V., electrolytic
- TRIMMERS
A4 39630 Rear of chassis
A5 39630 Front of chassis
A6 39630 On T5 (double)
A8 40610 On T5 (single)
- CHOKES
CK1 28458 264K trap choke
CK2 36630 Filament choke
- SOCKETS
21336 4 prong (speaker)
24922 4 prong
24942 6 prong
- 465-Q SPEAKER No. 42900 (1st. type)
- TRANSFORMERS
T1 41250 No. 1 R. F. T.
T2 41260 No. 2 R. F. T.
T3 41270 Oscillator trans.
T4 28164 No. 1 I. F. T.
T5 28165 No. 2 I. F. T.
T6 40660 No. 2 I. F. T.
- WAVE TRAP
41020 Trap assembly (264K)
28458 Choke only (CK1)
11650 125 MMF., 300-V., condenser (C1)
24327 Shield
- RESISTORS
R1 30340 1 U. 1/2 watt, red, blue
R2* 30320 10,000 Ω, 1/2 watt, maroon
R3 30330 50,000 Ω, 1/2 watt, black, yellow, red
R4 36430 5000 Ω, 1/2 watt, blue, yellow, low
R5 36430 500 Ω, 1/2 watt, blue, yellow, low
R6 30370 2 U. 1/2 watt, green
R7 31970 .25 U. 1/2 watt, red, yellow, low
R8 30320 10,000 Ω, 1/2 watt, maroon
R9 30340 1 U. 1/2 watt, red, blue
R10 30360 1 U. 1/2 watt, blue, gray
R11 30320 10,000 Ω, 1/2 watt, maroon
R12 40340 505 Ω, 1/2 watt, maroon
— 40340 1.03 Ω, wire wound (for use with 3-V. "A" battery)
— 29076* Sound unit assembly
29077* Sound unit complete
17868 Drive rod nut
17868 Drive rod nut
*Parts for this unit are not sold separately.

MODEL 655-Q

- For parts not listed below refer to Model 465-Q
- Base plate
26985 Shipping container
29011 Shipping container (male)
29012 Cable and socket assm. (female)
29013 Cable and socket assm. (female)
28629 Dial with screen
27904 Screen
27922 Var. cond. assm.
27922 Range switch assm.
28253 Battery cable and plug (male)
28254 Battery cable and socket
29036 Battery plug assm. (male)
27254 Battery socket assm.
27254 Dial and frame assembly
27262 Dial frame only
27511 Dial plate
27962 Escutcheon
28896 Front panel assembly
26721 Dial lamp (2-V., 60 mils.)
27965 Tone control switch assm.
28908 Tone control switch assm. (above)
38740 Sensitivity switch assm.
27628 Shaft and blade for the above
28946 Knob (tuning and range)
28947 Knob (vol. and tone)
26571 Knob (sensitivity)
27695 Battery cable tag F1155
27951 Sh. sheet F1158
27993 Shipping container
- TRANSFORMERS
T1 41080 BC antenna trans.
T2 41090 BC and 4-12 det. trans.
T3 41120 1.6-4.5, 12-22 det. trans.
T4 41110 BC and 4-12 osc. trans.
T5 41130 1.6-4.5, 12-22 osc. trans.
T6 28166 No. 1 I. F. T.
T7 28166 No. 2 I. F. T.
T8 28168 No. 3 I. F. T.
T9 40710 Audio input trans.
- RESISTORS
R1 30340 1 U. red, blue, 1/2 watt
R2 31970 .25 U. red, yellow, 1/2 watt
R3 33475 50,000 Ω, maroon, 1/2 watt
R4 36430 5000 Ω, blue, yellow, 1/2 w.
R5 36430 500 Ω, blue, yellow, 1/2 w.
R6 30380 3300 Ω, green, red, 1/2 w.
R7 30350 .5 U. black, purple, 1/2 w.
R8 30370 2 U. green, 1/2 watt
R9 30360 1 U. blue, gray, 1/2 watt
R10 30340 1 U. red, blue, 1/2 watt
R11 30340 1 U. red, blue, 1/2 watt
R12 37390 300 Ω, black, red, 1/2 w.
R13 37390 300 Ω, maroon, blue, 1/2 watt
R14 37540 425 Ω, blue, yellow, green, 1/2 w.
R15 39790 500 Ω, blue, red, green, 1/2 watt
R15A 30320 10,000 Ω, maroon, 1/2 watt
R16 30360 1 U. blue, gray, 1/2 watt
R17 30330 .5 U. black, purple, 1/2 watt
R18 31970 .25 U. red, yellow, 1/2 watt
R19 40330 .575 Ω, wire wound (for use with 3-V. "A" battery)
— 40350 1.03 Ω, wire wound (for use with 3-V. "A" battery)

PARTS FOR TUNING MECHANISM

- 27460 Dial gear
27276 Dial pin
27254 Dial pointer
27332 Counter shaft gear (large)
27333 Idler gear (small)
27957 Gear screw
27957 Broadcast pinion gear
28116 Gear frame
27351 Screw (5/32" dia.)
27351 Tuning shaft
28016 Tuning shaft
27293 Detention spring
27298 Shaft spacer
27297 Bracket holding pin

768-Q SPEAKER No. 43100

978-Q SPEAKER No. 43200

- 28348 Cable and plug assembly
27128 Magnet
27129 Magnet clamping plate
8188 8/32 hex. nut
9908 No. 6 lock washer
25318 No. 2 washer
27139 Clamping block top
27141 Clamping block bottom
27141 Adjusting screw, 6/32
27142 Cover plate
27143 Mounting bracket
27145 Conehead assembly
28976 Coil
27147 Armature
27147 Mount brackets, pair (978-Q)
27148 Spring
27149 Terminal

MODEL 978-Q

- For parts not listed below refer to Model 768-Q.
28897 Front panel assm.
27963 Escutcheon
28256 Base cover
28254 Battery cable and socket (female)
TRIMMERS
A1 38190 Single trimmer on T1
A2.3 39430 Double trimmer on T2
A4.5 39430 Double trimmer on T3
A6 39420 560 KC tracking
A9 32850 1.6 KC tracking on T6
A12 32850 1.6 KC tracking on T6
A14.15 40610 Double trimmer on T7
A16 39140 Single trimmer on T8
A16 39140 Strip of four trimmers

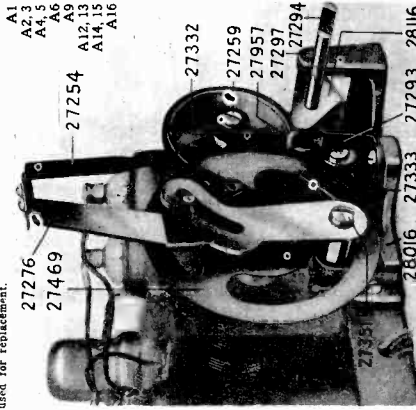
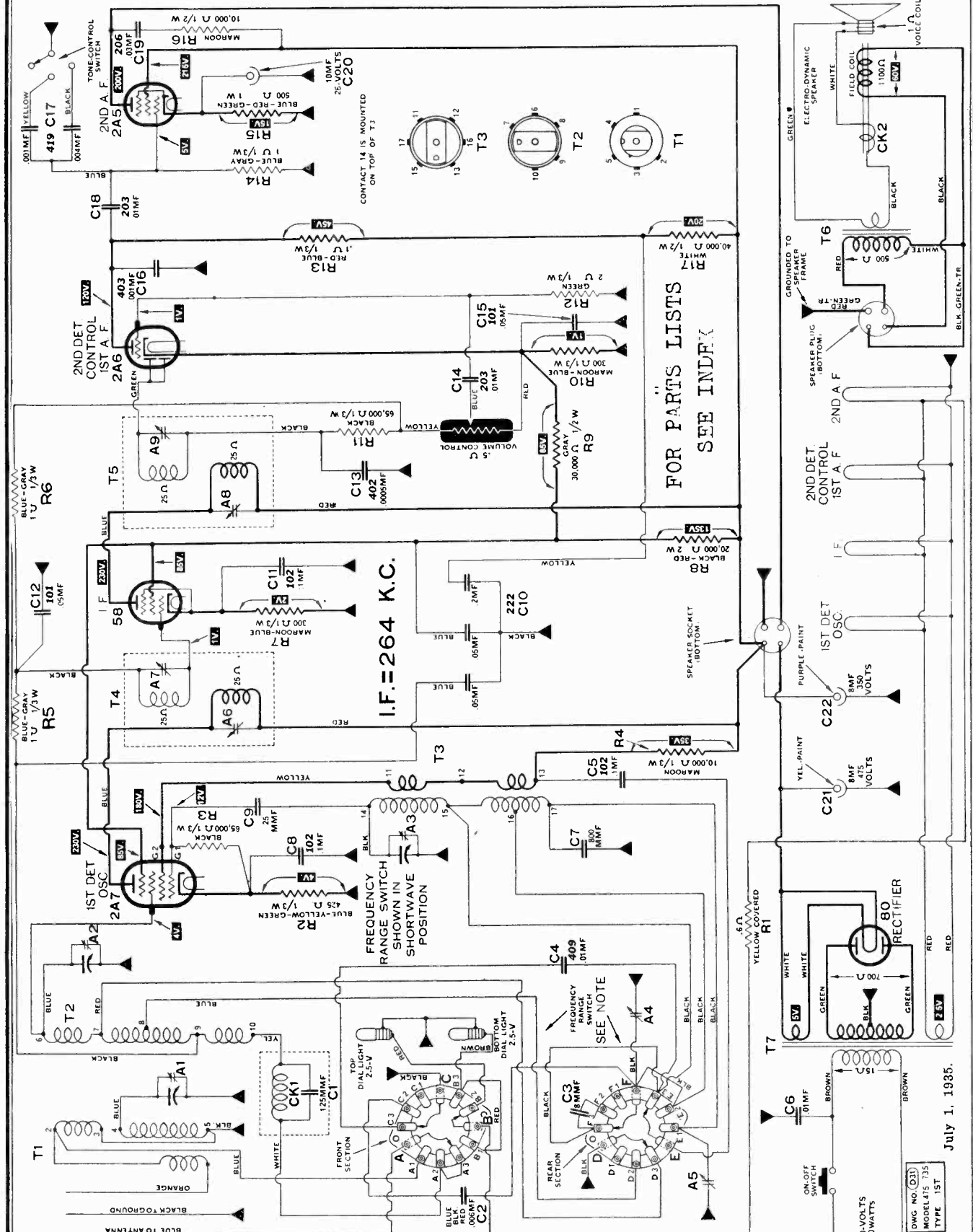


Illustration of parts in dual-speed component tuning mechanism in Models 768Q, 978Q, etc.

Ω = ohms.
U = megohms.

ATWATER-KENT MFG. CO.

MODELS 475, 735
Schematic, Voltage



The dial light switch arm connects to the top light when range switch is in "short-wave" position; connects bottom light at "police"; and connects both lights at "broadcast." In late sets R9 is 1 watt, and R4 (oscillator plate) is 1/2 watt.

DWG. NO. Q31
MODELS 475, 735
TYPE 1ST

MODELS 475, 735
Trimmers, Socket
Chassis Alignment

ATWATER-KENT MFG. CO.

I. F. TRIMMERS.

Connect I. F. test oscillator (264 KC) to I. F. tube by means of regular I. F. coupling unit. Peak A9, A8. Connect I. F. oscillator to 1st-detector tube and peak A7, A6.

DIAL POINTER ADJUSTMENT.

With rotor of variable condenser fully meshed, dial indicator should be at 535 KC.

R. F. TRIMMERS.

Connect an R. F. oscillator to antenna and ground of set.

Short-wave range. With oscillator and dial at 15 MC, peak A3. Use the first point on the trimmer, as it is screwed in from a loose or minimum-capacity position.

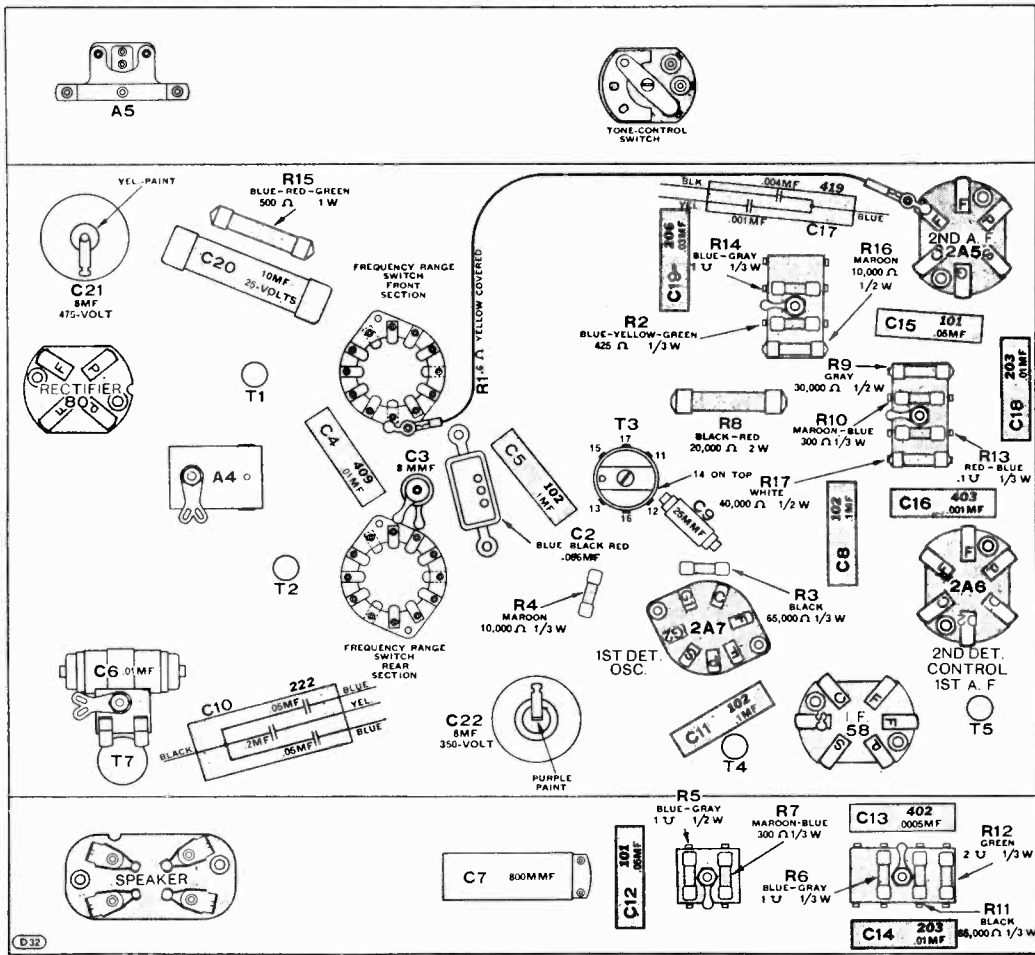
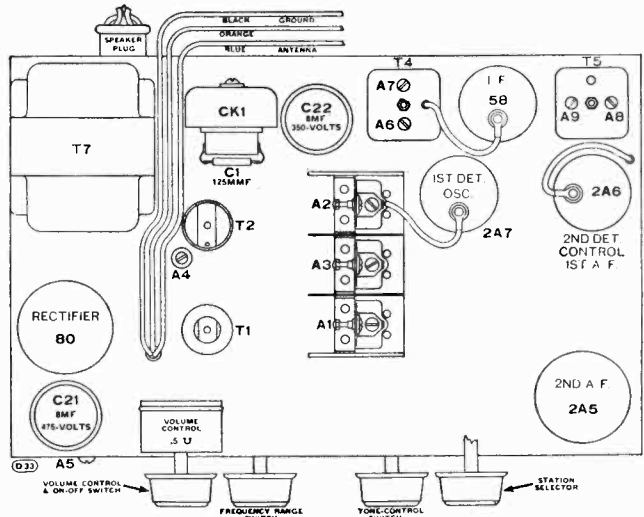
Police range. No trimmers on this range.

Broadcast range. With oscillator and dial at 1500 KC, peak A4, A2 and A1. With oscillator and dial at 560 KC, peak A5.

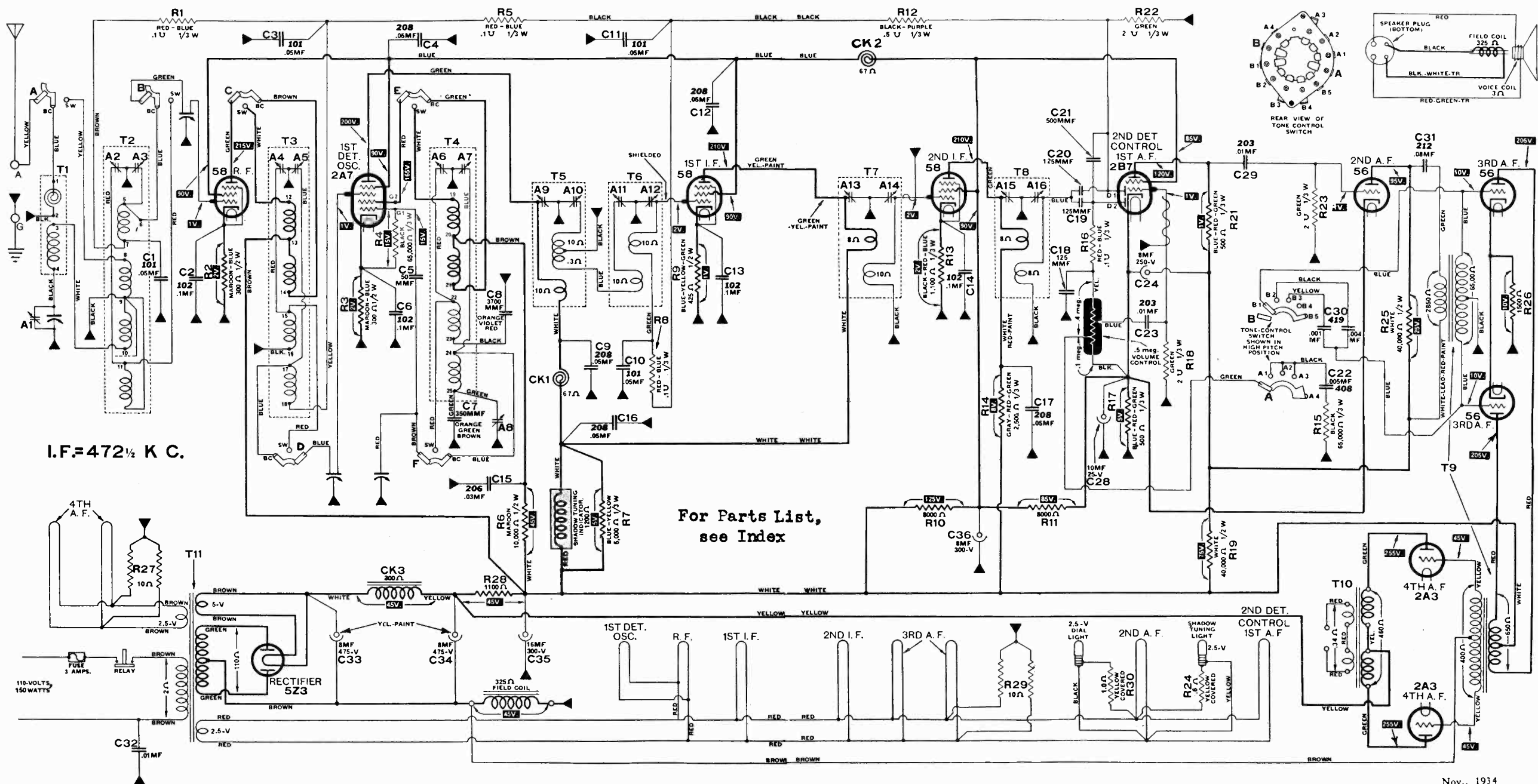
TRIMMERS

- A1—1st-detector, 1500 KC.
- A2—1st-detector, 1500 KC.
- A3—Oscillator, 15 MC.
- A4—Oscillator, 1500 KC.
- A5—Oscillator, 560 KC.
- A6—1st-detector plate, 264 KC.
- A7—I. F. grid, 264 KC.
- A8—I. F. plate, 264 KC.
- A9—2nd-detector, 264 KC.

MODELS 475 AND 735



ATWATER-KENT MFG. CO.



Only the late type audio circuit is shown above. In early sets, the plate circuit of the 2B7 is similar to that used in Model 112.

Model 511 has two frequency ranges: the broadcast range (BC) covers 540 to 1600 kilocycles, and the short-wave range (SW) covers 5500 to 15500 kilocycles.

Nov., 1934

ATWATER-KENT MFG. CO.

MODEL 511 Tune-O-Matic Data Socket, Chassis

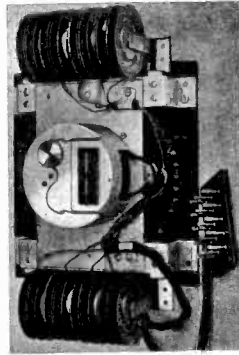
of the shaft and the bearing. The adjusting screw is then given $\frac{1}{4}$ additional turn in the same direction and the lock nut tightened.

RELAY

No trouble should be experienced with the OFF and ON relay used in conjunction with the TUNE-O-MATIC mechanism. Any tendency for contacts to stick may be removed by the use of emery cloth. In cases where buzzing of the relay occurs, it should be noted whether the armature seats properly.

STATION SELECTOR DISCS

Tension collar at rear of station discs may be loosened if station selector discs are difficult to set. However sufficient pressure should be retained to keep the discs in the position which they have been set, while the mechanism is in operation.



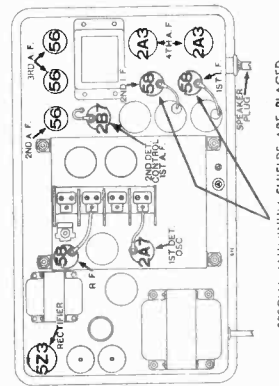
SERVICING TUNE-O-MATIC CLOCK ASSEMBLY

SEC. B. Improper adjustment of large and small pulleys. The large pulley is adjusted first, so that when it makes contact with the lower portion of the motor driving solenoid is approximately one-half inch. The small pulley is then adjusted so that there is about $\frac{1}{32}$ space between large pulley and motor driving-nib when the driving-nib is in contact with the small pulley. This adjustment should place the small pulley in a position of positive contact with the motor driving-nib when the solenoid is not energized. If it does not, the mechanism will fail to return from the position of maximum mesh of the gang condenser.

Improper adjustment of worm shaft bearings will cause heating and partial or complete "freezing" of the shaft and bearing. To adjust the worm gear drive shaft bearings, the bearing adjusting screw is turned clockwise until a slight movement of the small pulley is observed, indicating contact

The TUNE-O-MATIC clock assembly is illustrated at right. No attempt should be made to make adjustments on any part of the clock assembly unit other than pointed out below. Where major adjustments are required, the complete unit must be removed from the cabinet and returned to the distributor.

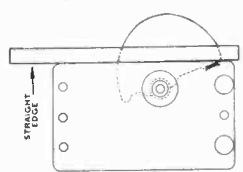
In cases where the contact arm, on the rear of the jack panel, jumps a noticeable period of time before or after the MINUTE hand reaches each successive 15 minute mark on the clock face, it will be necessary to set both the hour hand and the minute hand on 12, when the contact arm is on the 12 o'clock jack. To make this adjustment the clock crystal should be carefully removed, by releasing the crystal retaining spring (use narrow blade screwdriver), to allow access to the clock hands. Turn the knurled clock-hand adjusting knob on the rear of the clock until the hand is almost at 12, then allow the clock to run on its own power. The instant the contact arm jumps to the 12 o'clock jack see that both the hour and the minute hand are within the black mark at 12. Both hands are held on their respective shafts by friction only, and therefore may be moved in either direction manually to the 12 o'clock position. After the hands have been adjusted as indicated above, the relation of the minute hand and the time the contact arm jumps to the succeeding positions may be checked at other points on the clock face in a like manner, and if found satisfactory, the clock crystal should be replaced and the retaining spring adjusted.



SPECIAL ALUMINUM SHIELDS ARE PLACED OVER THESE TWO TUBES
Top View, Model 511

This illustration shows the correct position of the variable condenser rotor on a dial pointer setting of 177.5 KC. To make this adjustment, the variable condenser and the rotor is turned so the spacing bar (shown as a small black oblong) is just touching the straight edge of the bakelite. The thickness of the bakelite bar is $\frac{1}{8}$ inch, $\frac{3}{16}$ wide, and $6\frac{1}{2}$ long. The $\frac{3}{16}$ side is held against the mounting plate.

See section on "Dial Pointer Adjustment."



SERVICING THE Tune-O-Matic MECHANISM

In addition to the simplicity of design and operation of the TUNE-O-MATIC, the rugged construction and positive adjustments are such that, under normal conditions of operation, it WILL NOT be necessary for the Service Man to make ANY mechanical adjustments on this mechanism, other than that of setting the station selector discs. However should the initial adjustments of any part of the mechanism become changed at any time, it will cause the mechanism to function unsatisfactorily and corrective adjustments will be necessary. Several of the probable sources of trouble in this respect have been tabulated below, with a brief statement of the adjustments required. For additional details in regard to the latter, reference should be made to the respective sections under ADJUSTMENTS.

TROUBLE OBSERVED

1. Reversal switch control cam does not operate reversing switch.
2. Motor does not drive mechanism through complete operating cycle.
3. Mechanism runs continuously.
4. Difficulty in manual tuning.

ADJUSTMENT REQUIRED

1. Loosen reversal switch mounting screws and move bakelite switch base to the right or left as required. (See Adjustments—Sec. A.)
2. Check bearing adjustments. Check large and small pulley adjusting screws. Check for continuous contact between selector disc and contact finger in question.
3. Reversal switch does not trip or does not make contact after it does trip. (See also, instructions—clock assembly adjustments.)
4. Loosen setscrew of reversal switch control cam on condenser shaft and relieve pressure of clutch-spring on clutch-disc gear sufficiently to allow tuning knob to turn easily during manual operation, but not enough to cause it to slip during automatic operation.

MECHANICAL NOISE DURING OPERATION OF MECHANISM

CAUSED BY

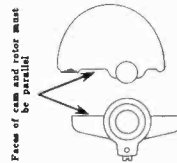
1. Dry worm and gear.
2. "Squeak" in motor bearings.
3. Improper mesh of worm and gear.
4. Worm shaft loose in bearings.
5. Solenoid plunger hangar wire does not hold plunger snugly.
6. Solenoid plunger and mounting arm vibrate.
7. Felt washer omitted between top of plunger and plunger mounting arm.
8. Pointer control gear teeth in contact with metal of pointer control pinion instead of bakelite section.
9. Noise from selector disc dust cover.

REMEDY

1. Use graphite sparingly.
2. ONE DROP of 3 in 1 oil.
3. See that gear is centered in worm, and meshes about half the depth of the teeth.
4. See Adjustments Sec. B.
5. Pinch ends of hangar wire with pliers.
6. Set spacing between plunger and top of solenoid to $\frac{1}{2}$ " by adjustment of large pulley.
7. Replace with Part No. 27767.
8. Adjust pointer control gear on condenser shaft.
9. Tighten mounting screws and make sure that cover does not contact clutch-disc gear.

ADJUSTMENTS

SEC. A. Failure of reversal switch control cam to operate reversal switch in either maximum positions may be corrected by adjusting solenoid switch position as previously mentioned. If further adjustment is necessary it should be made as follows: Checking the reversal switch by manual operation of the large pointer control gear—in position of minimum capacity of the gang condenser, the pointer control gear is adjusted on the condenser shaft so that the stop arm attached to the gear makes contact with the reverse switch is tripped to the OFF position by reversal switch control cam, when the stop is within approximately $\frac{1}{8}$ " of the pointer control pinion gear. In the position of maximum capacity of the gang condenser, it may be necessary to move the reversal switch control cam slightly in a clockwise direction (when facing the rear of the mechanism) on the condenser shaft, in order that the reversal switch will be tripped to the ON position when the gang condenser is within $\frac{1}{8}$ " of complete mesh. It should be noted that when the proper adjustment has been made, the contact faces of the reversal switch cam are parallel to the flat edge of the condenser rotors.

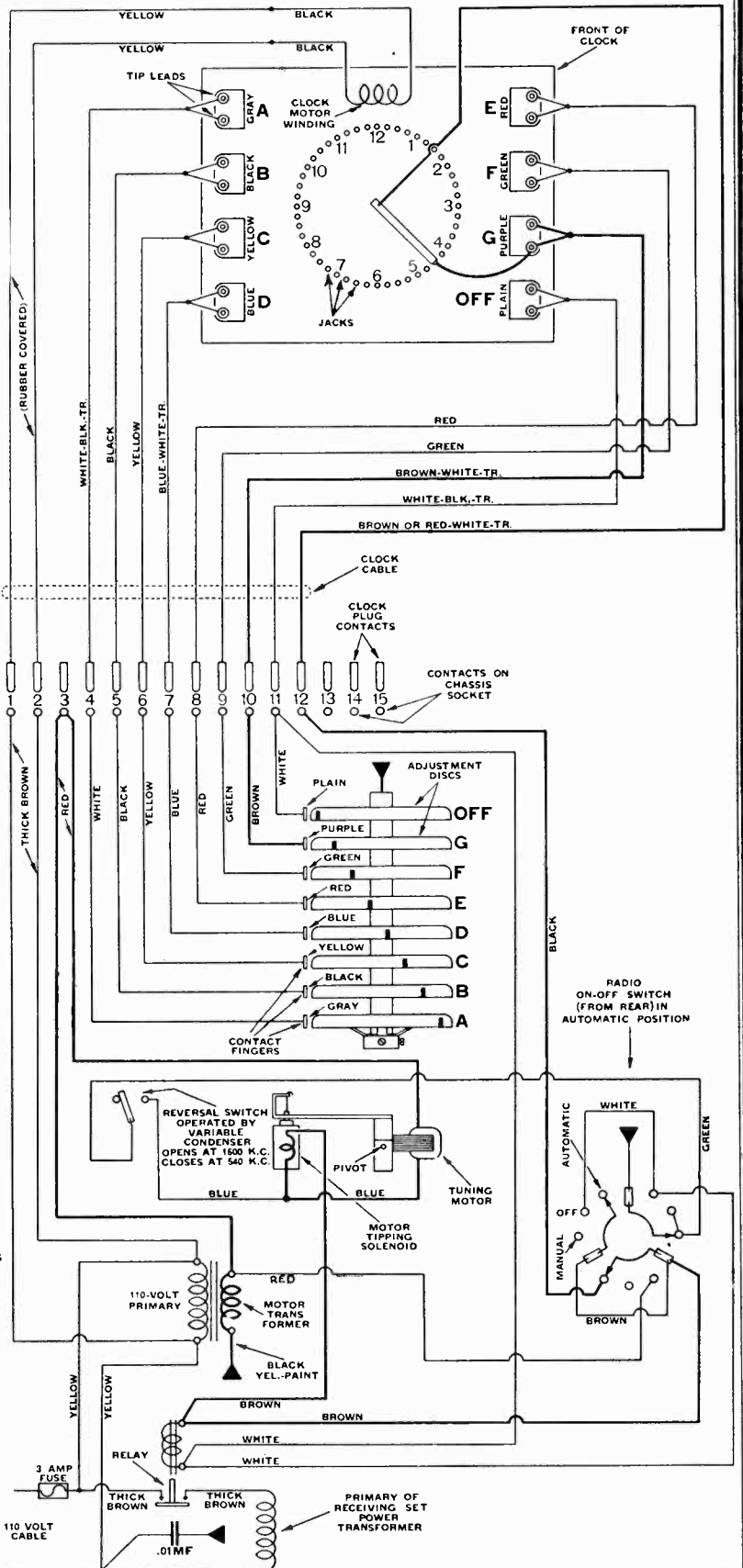
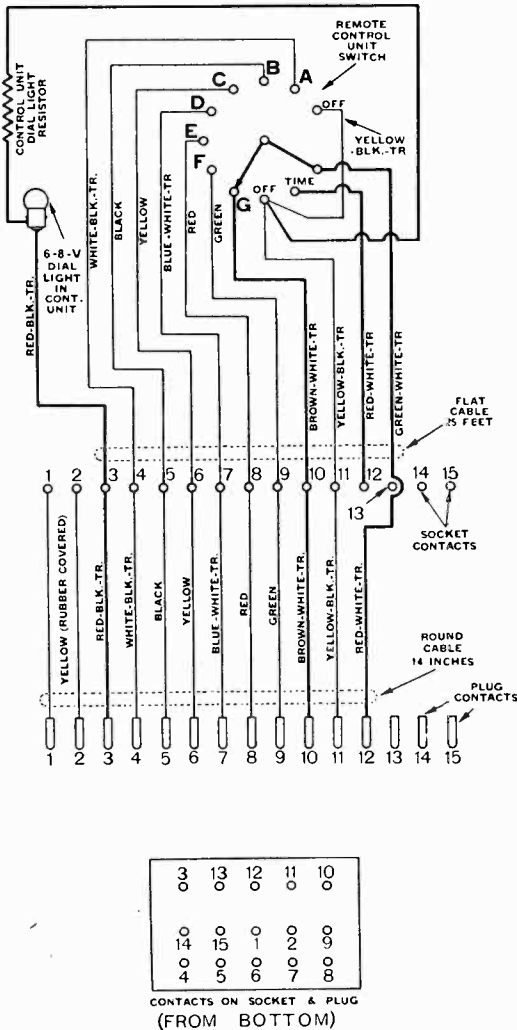


MODEL 511
 ATWATER-KENT MFG. CO. Automatic Tuning, Clock,
 Control Units Schematic

CIRCUIT OF AUTOMATIC TUNING MECHANISM, CLOCK ASSEMBLY,
 AND
 REMOTE CONTROL UNIT.

When using Model 511 without remote control, the cable from the clock assembly is plugged into the chassis socket.

The remote control is added to Model 511 by removing the clock-assembly plug from the chassis socket and inserting it in the socket which is attached to the remote control. The plug of the remote control is inserted in the socket on the chassis.

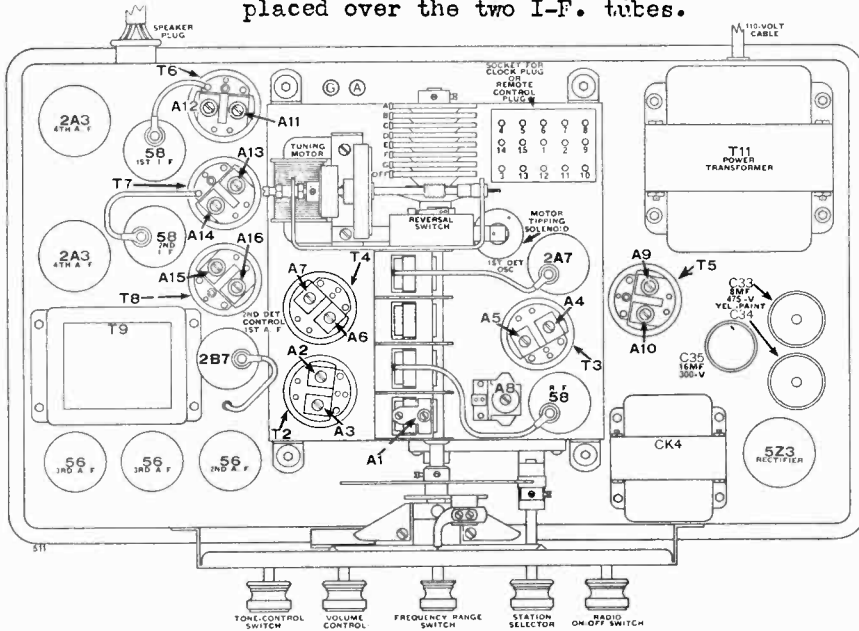


MODEL 511
Trimmers, Socket,
Alignment Data

ATWATER-KENT MFG. CO.

Special aluminum shields are placed over the two I-F. tubes.

TOP VIEW MODEL 511



	5.4 to 15.5 M.C.	540 to 1600 K.C.
R. F.	A2	A1 & A3
1st-Detector ...	A4	A5
Oscillator	A6	A7
Tracking	None	A8
I. F. Trimmers are	A9 to A16 inclusive	

DIAL POINTER ADJUSTMENT.

If the dial gear and indicator have not been tampered with, leave them alone; but if they have been changed in any way, reset as follows:

1. Loosen the two set screws which hold pointer gear on condenser shaft.
2. Turn condenser to minimum.
3. See illustration at bottom of page 13. Place straight-edge gauge in vertical position with the long flat face against the front mounting plate of the variable condenser as shown. Turn the condenser until the front edge of the rotor spacing bar just touches the straight edge. Hold the condenser in this position and move the pointer arm so the pointer is at 1575 KC, after which tighten the set screws to hold the dial gear securely.
4. Loosen the screws which hold the pointer to the pointer arm, and adjust the pointer so that when the condenser is completely meshed, the pointer is at 530 KC.

Recheck at 1575 KC and repeat procedure 3 and 4 if necessary.

EQUIPMENT.

1. **OSCILLATOR.** The oscillator should extend from the lowest I. F. frequency (125 KC in Atwater Kent sets) to at least 18 MC. The oscillator should have a good attenuator and should be well shielded. If the oscillator is not well shielded, it may be difficult to peak the pre-selector trimmers on some models, owing to pick-up by the 1st-detector grid circuit. In general, it is advisable to connect an .00025MFD fixed condenser in series with the oscillator pick-up lead at the antenna terminal of the set.
2. **OUTPUT METER.** Use a sensitive output meter and keep the radio volume control turned on full volume. This is necessary to minimize the effect of the automatic-volume-control action of the set which would otherwise prevent sharp peaking of the trimmers.
3. **BALANCING UNIT.** Build or purchase from your distributor two of the Type "A" balancing units and one of the I. F. coupling units shown on right. These are required for correct adjustment of Atwater Kent super-heterodynes. The coupling unit is placed on the grid cap of the 1st-detector tube, and the lead that normally connects to the grid cap is attached to the end of the maroon resistor as shown.
4. Use a non-metallic screw driver for adjustment of the trimmers.

R. F. TRIMMERS.

Connect an RF oscillator to the antenna and ground terminals of the set. Use the weakest possible oscillator signal to give a reading on the output meter. Loosen the trimmer screws for the range or ranges that are to be re-adjusted.

5.4 to 15.5 MC range. Tune test oscillator to 15 MC. Turn oscillator trimmer A6 "in", stopping at the peak of position where the signal is first heard as the trimmer is turned in. Then tune the set to 14.06 MC and note whether the oscillator signal is present at this frequency and considerably weaker than at 15 MC. If so, the oscillator trimmer adjustment is correct and the R.F. trimmers A2 and A4 should be peaked at 15 MC.

Broadcast range. Tune test oscillator and set to 1500 KC. Turn trimmer A7 "in" until oscillator signal is heard and peaked. Peak R.F. trimmers A1, A3, and A5. Tune test oscillator and set to 560KC. Peak A8. Go back and forth between A7 at 1500 and A8 at 560 until both of these frequencies come in at the correct points on the dial.

I. F. TRIMMERS.

Connect an IF test oscillator to the 1st-detector tube by means of the IF coupling unit shown in FIG. 1. Adjust the IF oscillator to 472½ K.C. Connect a sensitive output meter to the set. Use the weakest possible oscillator signal that will give a reading on the output meter with the radio volume control full on. Put tone control in 2nd position from right.

- Put unit A on A15 and peak A16.
- Put unit A on A16 and peak A15.
- Put unit A on A13 and peak A14.
- Put unit A on A14 and peak A13.
- Put one unit A on A11 and one on A 9. Peak A12 and A10.
- Put one unit A on A12 and one on A10. Peak A11 and A 9.

In case of instability while adjusting A15 and A16, place an extra balancing unit A across A12.

Remove the I. F. coupling unit and the balancing units and seal the trimmers.

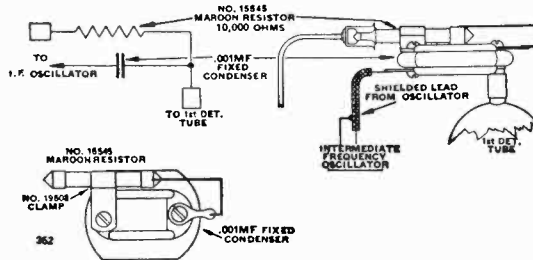


Fig. 1. I. F. Coupling unit, Part No. 42590

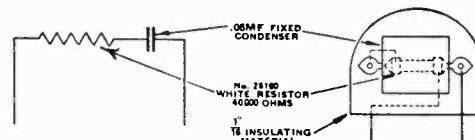
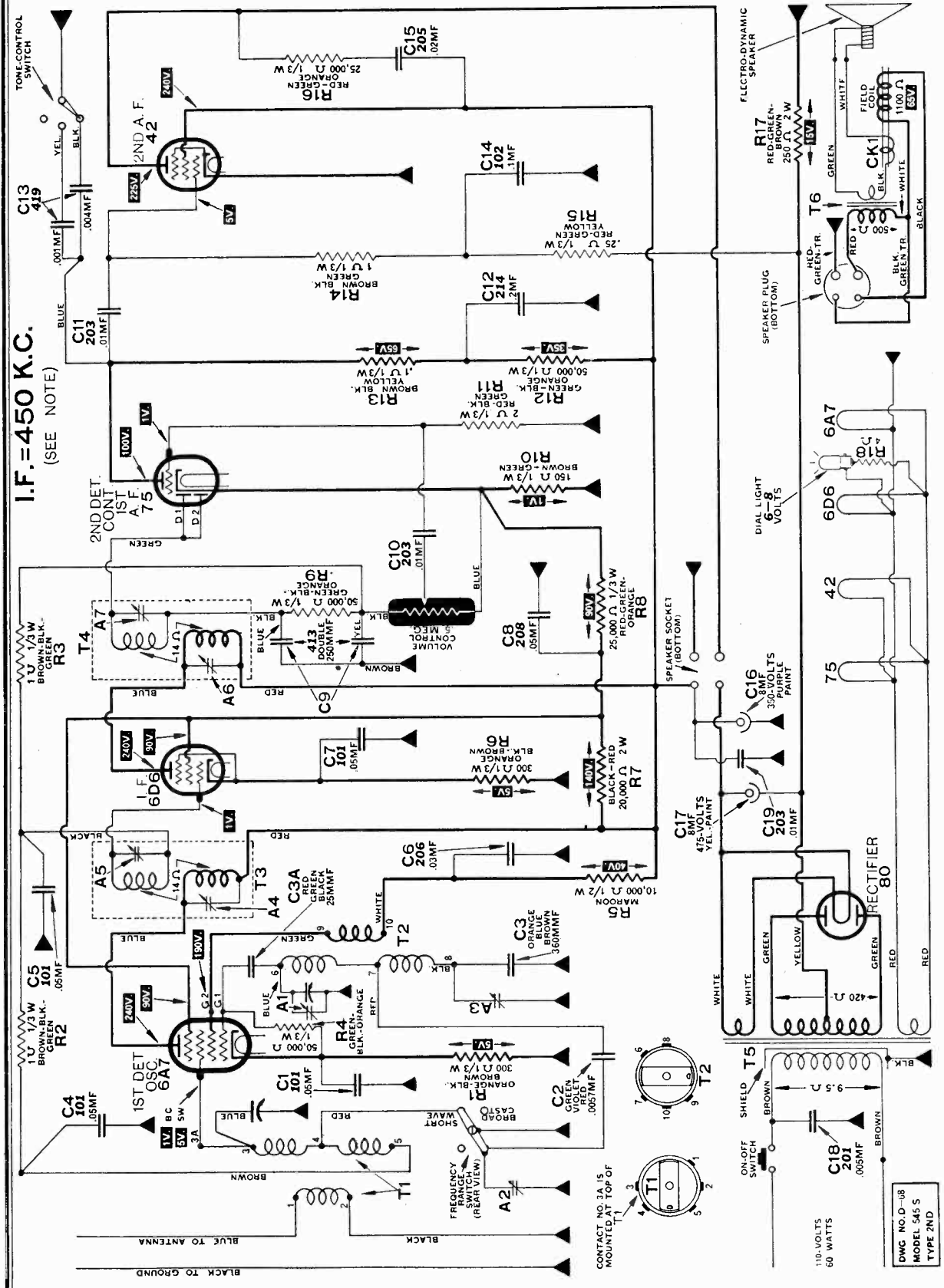


Fig. 2. Balancing unit "A," Part No. 42610

ATWATER-KENT MFG. CO.

MODEL 545
Schematic, Voltage



I.F. = 450 K.C.
(SEE NOTE)

The I. F. in some Model 545 sets is 472½ K.C. and a label to this effect is attached to the rear of the chassis. The I. F. transformers and trimmers, etc., are exactly the same for either 450 or 472½ K.C.
CHANGES: Early Model 545 has 2.5-volt tubes and the circuit is similar to that shown above. Late sets have .01 MF line bypass; electrolytic C16 is 300-V, 16 MF; a filament shunt resistor of 25-ohms (tapped at 12.5) is added and the filament circuit is not grounded except through this resistor; dial light in late sets is 6.3 volts.

DWG NO. D-08
MODEL 545 S
TYPE 2ND

June, 1935

MODEL 545

Trimmers, Socket,
Chassis, Alignment

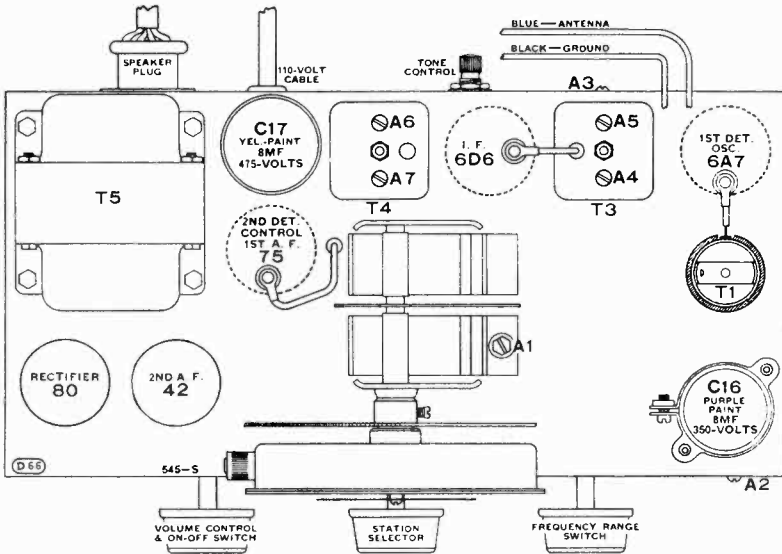
ATWATER-KENT MFG. CO.

ADJUSTING TRIMMERS

I. F. Connect I. F. test oscillator (450* KC) to I. F. tube by means of regular I. F. coupling unit. Peak A7 and A6. Connect coupling unit to 1st-detector and peak A5 and A4.

DIAL. With rotor of variable condenser fully meshed, dial indicator should be at 540 KC.

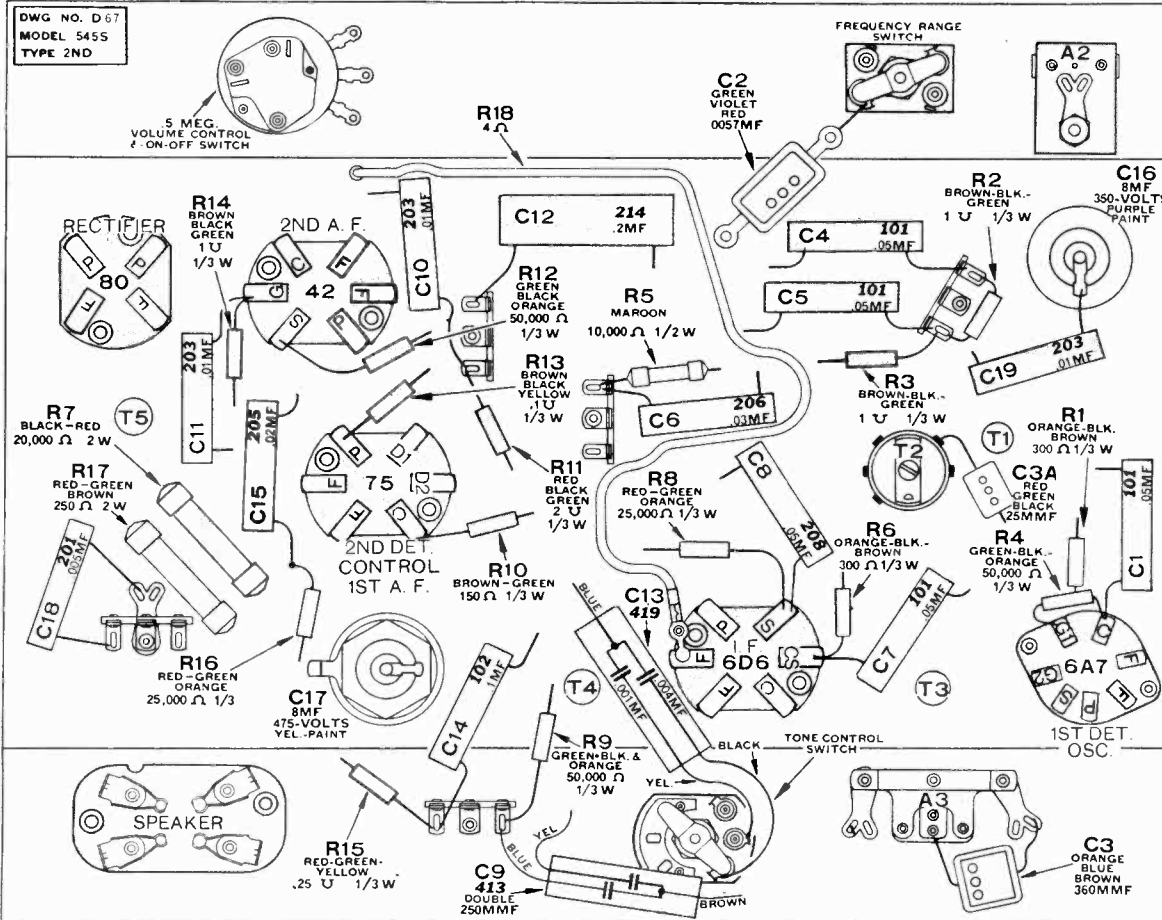
R. F. Connect a 6 MC oscillator to antenna and ground. Peak A1. With oscillator and dial at 1700 KC, peak A2. With oscillator and dial at 540 KC, peak A3.



	Short-Wave Range	Broadcast Range
1st Detector
Oscillator A1	A2
Tracking	A3

The I. F. trimmers are A4 to A7, inclusive.

*In some Model 545 sets, the I. F. is 472½ KC and a label to this effect is attached to rear of chassis.



Schematic, Voltage

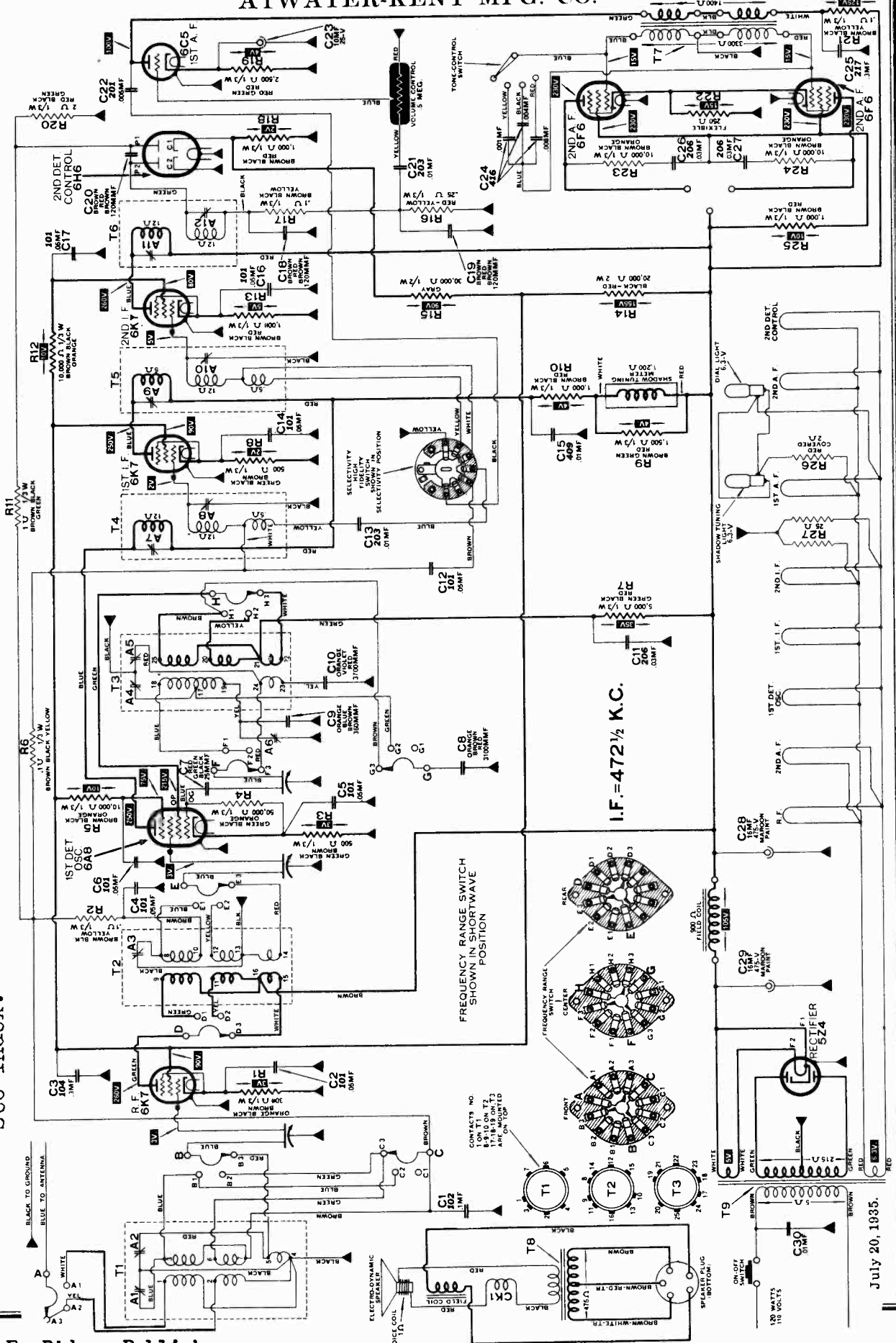
ATWATER-KENT MFG. CO.

MODEL 649 (Early)

MODEL 649

For Alignment Data See Index.

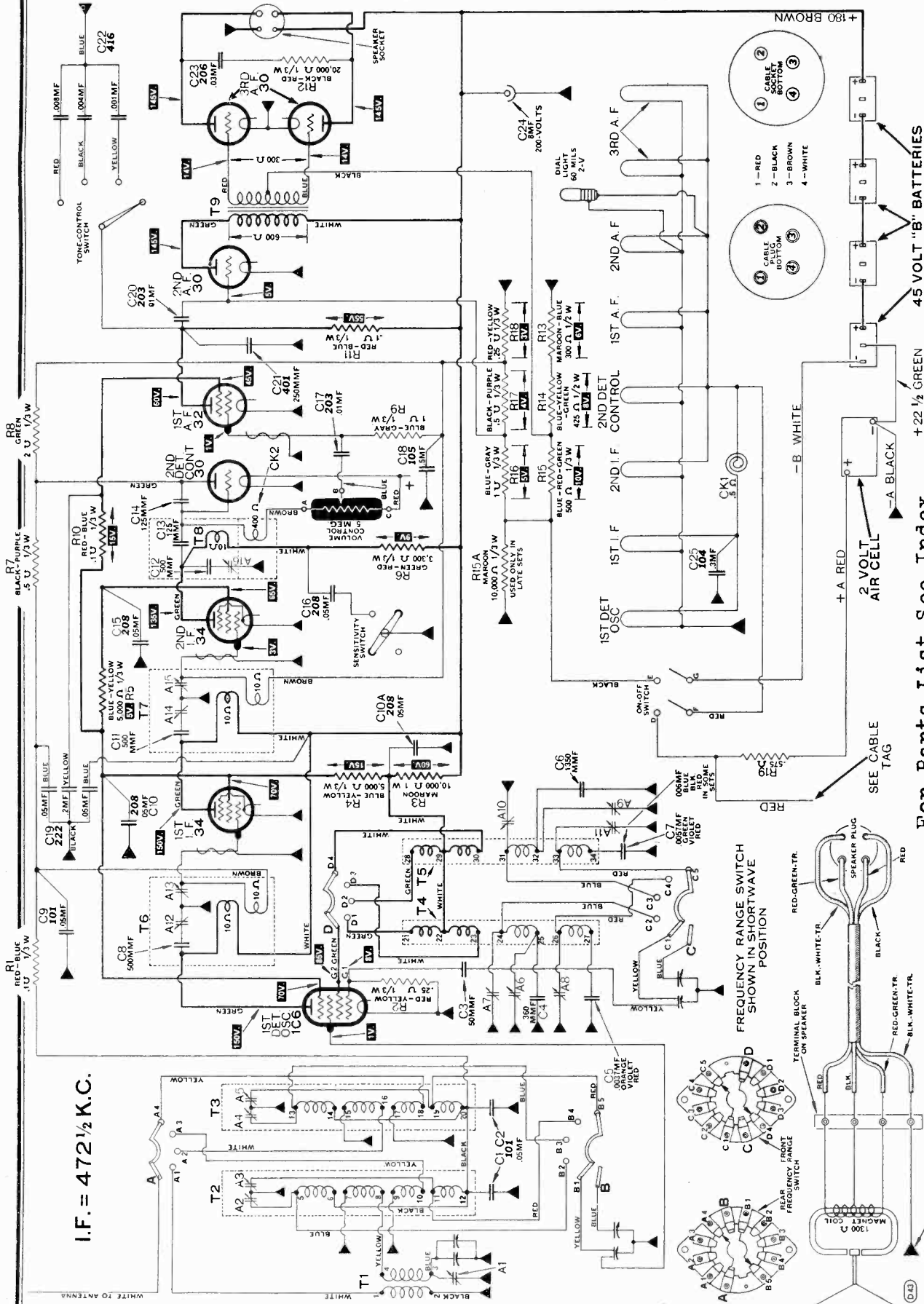
OWG NO. D52
MODEL 649
TYPE 1ST



MODELS 768Q, 978Q

ATWATER-KENT MFG. CO.

Schematic, Voltage



For Parts List See Index

An extra tracking condenser (No. 25837, 1100 MMF, brown-brown-red) is connected across C5 in some models.

MODELS 768Q and 978Q

March, 1935.

ATWATER-KENT MFG. CO.

MODELS 768Q, 978Q
Chassis
Alignment

MODELS 768Q and 978Q

I. F. TRIMMERS.

Connect an I. F. test oscillator to the 1st-detector tube by means of the standard I. F. coupling unit described in the January, 1935, supplement. Adjust the test oscillator to 472½ KC. Connect a sensitive output meter to the set. Use the weakest oscillator signal that will give a reading on the output meter with the radio volume control on full.

Peak A16. Then peak A15, 14, 13, and 12, using a 40000-ohm balancing unit alternately in the usual manner. Remove the coupling unit and seal the I. F. trimmers.

R. F. TRIMMERS.

12 to 22.5 MC range. Oscillator at 18 MC, dial pointer at 18 MC, peak trimmers A11, and A5.

4.6 to 12.2 MC range. Oscillator and pointer at 12 MC, peak trimmers A8, and A3.

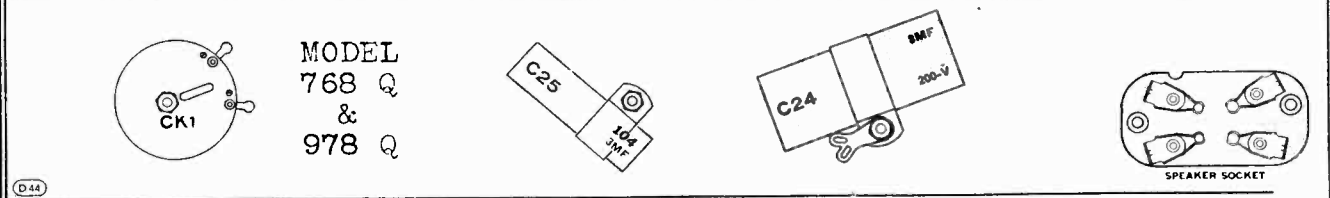
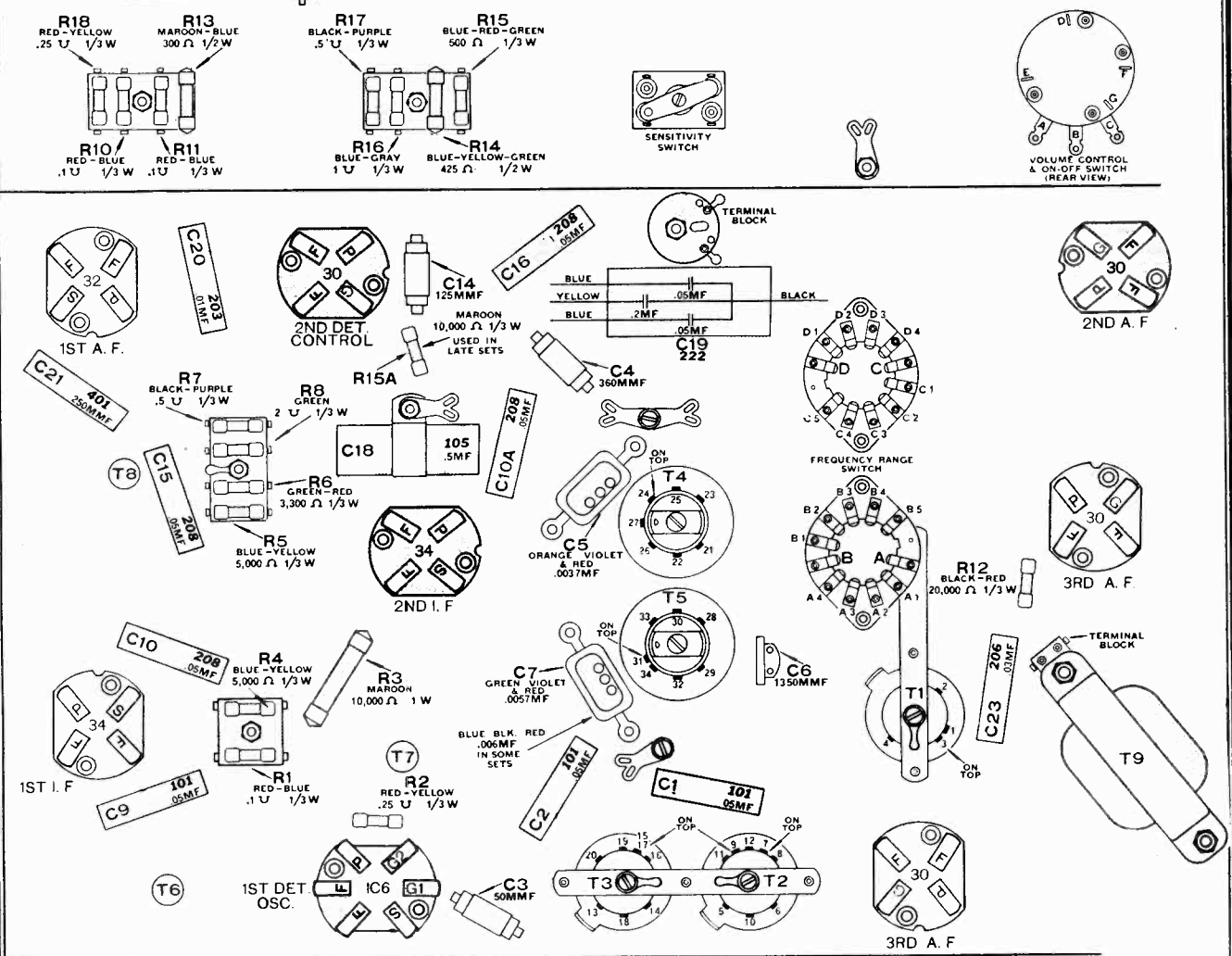
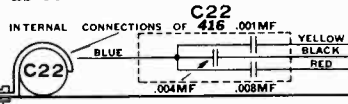
1.6 to 4.6 MC range. Oscillator and pointer at 4 MC, peak trimmers A10, and A4.

Tune oscillator to 1.7 with pointer at 1.7, peak A9.

Broadcast range. Oscillator at 1500 KC, and pointer at 1500 KC, peak A7, A1, and A2. With oscillator and dial pointer at 560, peak A6.

DIAL POINTER ADJUSTMENT.

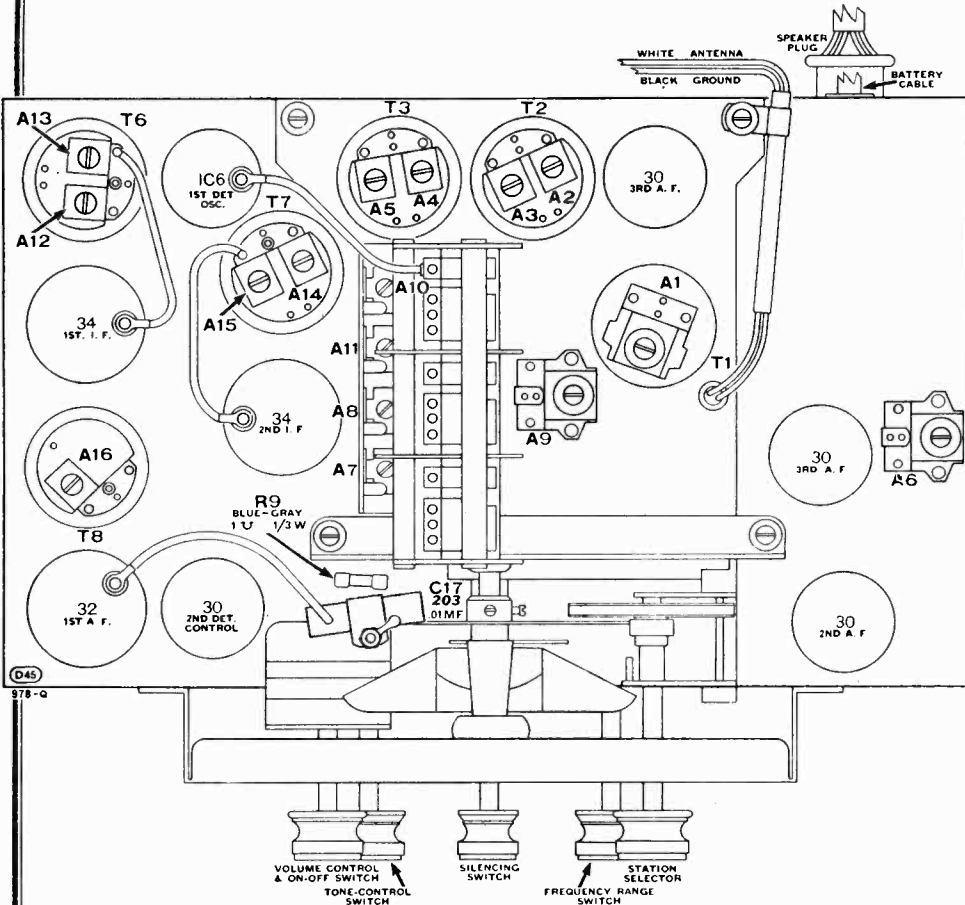
This procedure is the same as for Models 447 and 318



MODELS 768Q, 978Q
 Socket, Trimmers
 Battery Connections

ATWATER-KENT MFG. CO.

TOP VIEW, MODELS 768Q and 978Q



TRIMMERS ON MODELS 768Q and 978Q

(See page 1 for trimmer adjustment data.)

I. F. TRIMMERS

I. F. (472½ KC)....A12 to A16

12 to 22.5 MC RANGE

1st-Det. (18 MC).....A5
 Oscillator (18 MC).....A11

4.6 to 12.2 MC RANGE

1st-Det. (12 MC).....A3
 Oscillator (12 MC).....A8

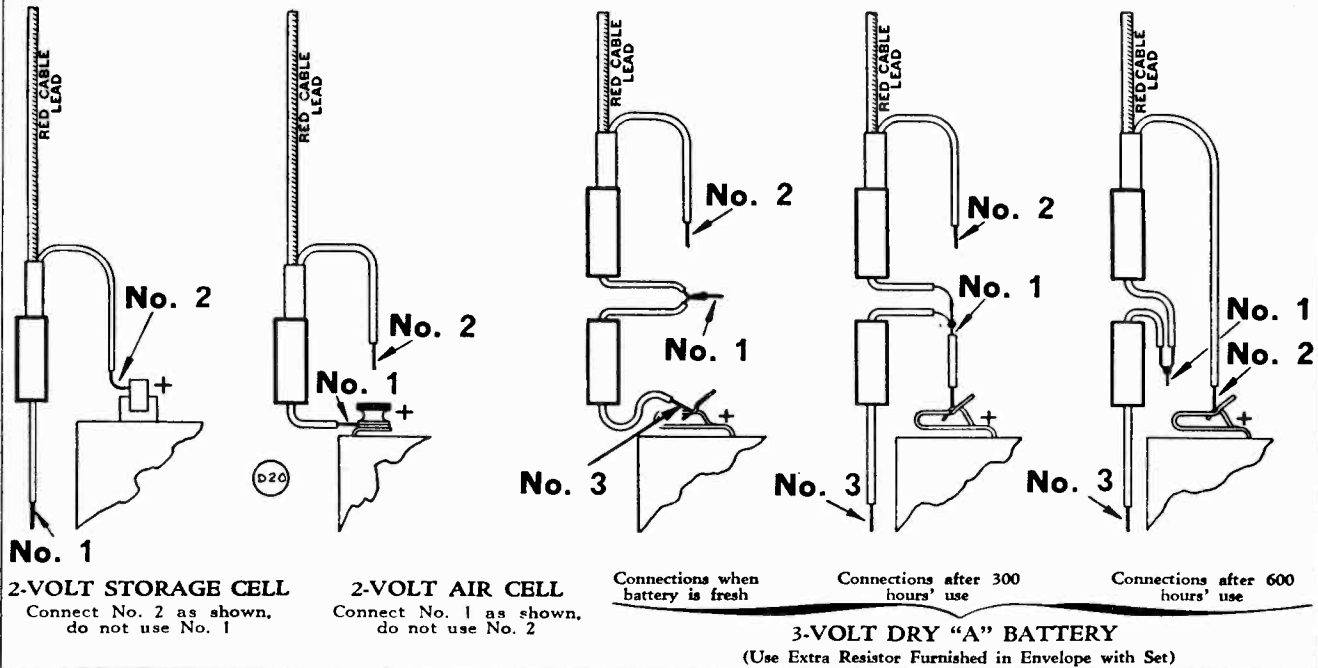
1.6 to 4.6 MC RANGE

1st-Det. (4 MC).....A4
 Oscillator (4 MC).....A10
 Tracking (1.7 MC).....A9

540 to 1600 KC RANGE

Antenna (1500 KC).....A1
 1st-Det. (1500 KC).....A2
 Oscillator (1500 KC).....A7
 Tracking (560 KC).....A6

CONNECTIONS FOR DIFFERENT TYPES OF "A" BATTERIES

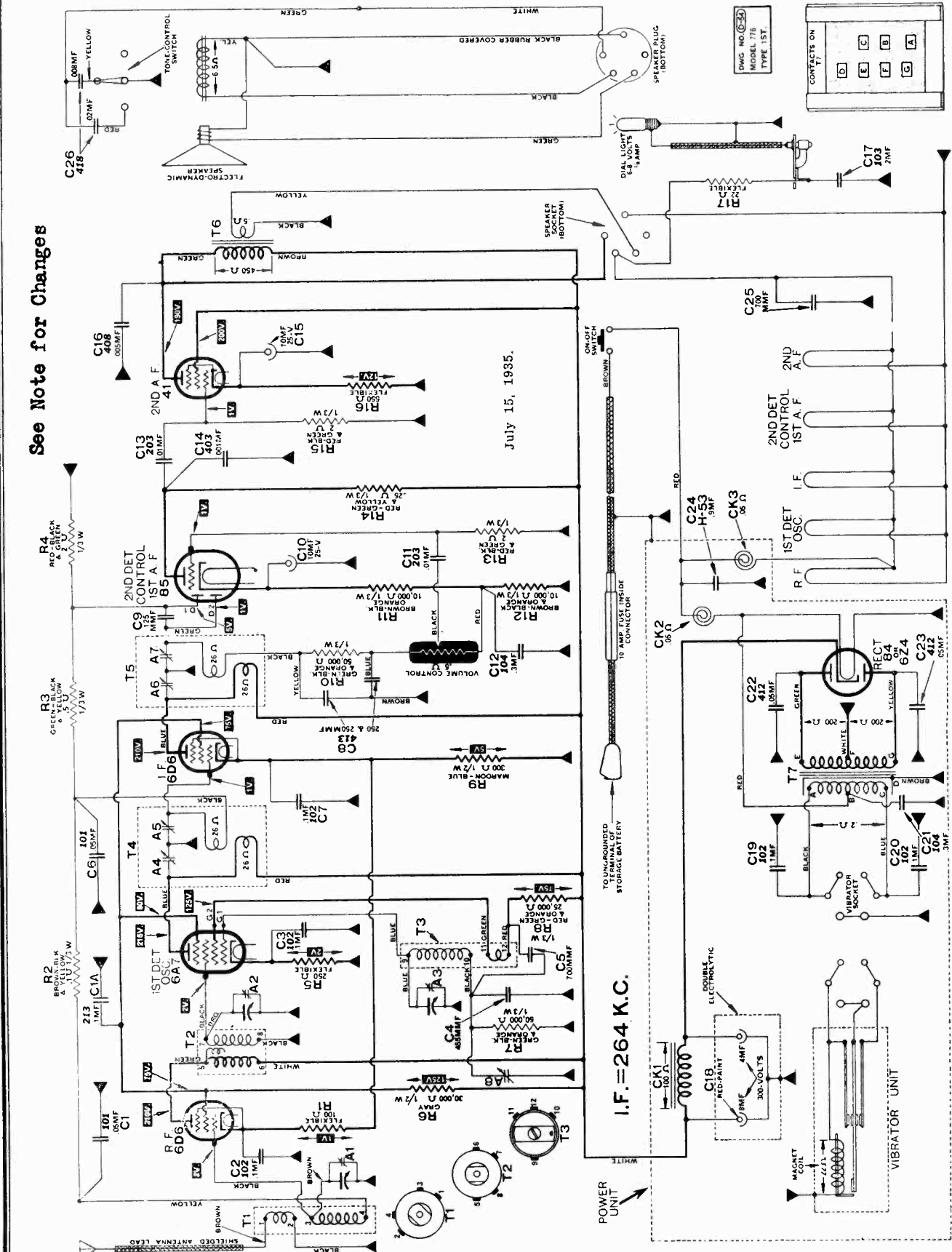


ATWATER-KENT MFG. CO.

MODEL 776 Schematic, Voltage

See Note for Changes

July 15, 1935.

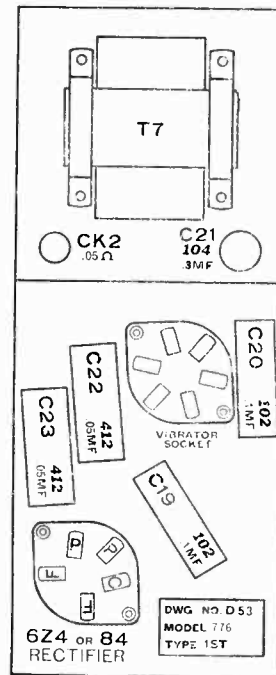
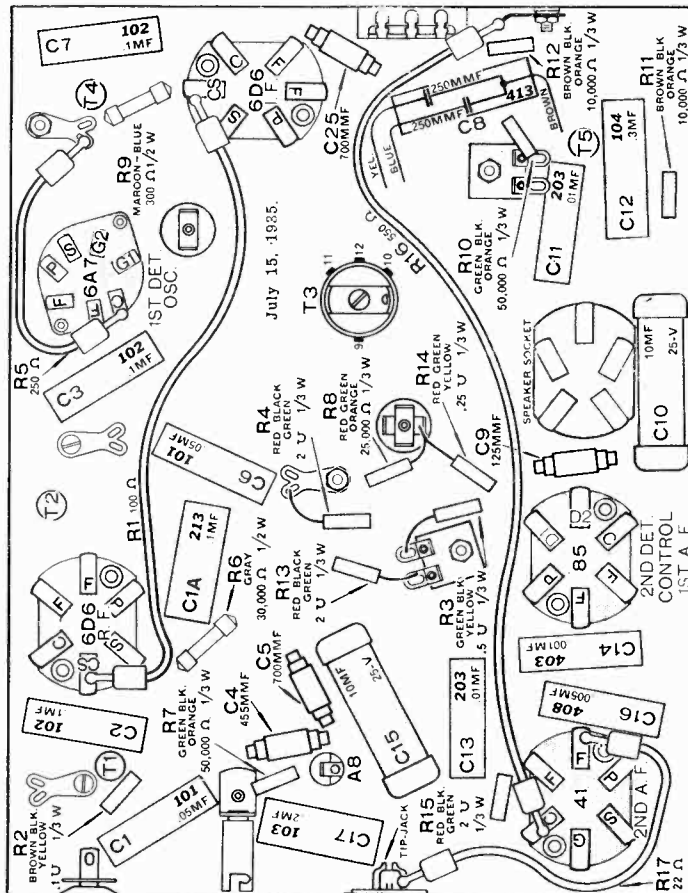
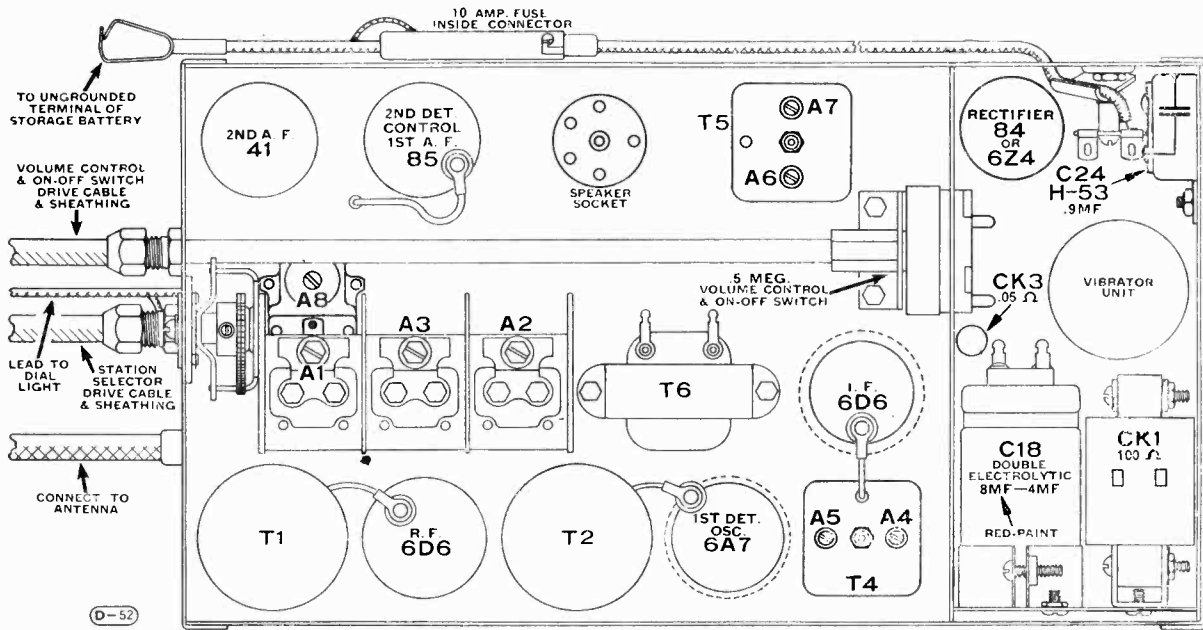


MODEL 776

Socket, Trimmers
Chassis
Changes

ATWATER-KENT MFG. CO.

In early sets R11 is 5,000 ohms with a drop of 4 volts and R12 is 15,000 ohms with a drop of 10 volts. In late sets these two resistors are each 10,000 ohms and there is approximately 6 volts across each. (At the same time this change was made, the 1st-A. F. plate resistor, R14 was changed from 1 meg. to .25 meg. With the .1 meg. resistor, the drop across it is 55 volts, and the plate voltage is 125. With the .25 meg. resistor, the plate voltage is lower. All voltages are measured with the 250-volt scale of a 1,000-ohm-per-volt voltmeter.)
The voltage across R11 regulates the "squelch" or minimum-signal level at which the 2nd-detector begins to function. The combined voltage across R11 and R12 acts as the bias on the AVC and the 1st-A. F. grid.
Early Model 776 sets do not have tone control, and the "A" filter circuit is slightly different from that shown.
C17 in the lower right-hand part of the diagram is .2 MF.



ATWATER-KENT MFG. CO.

PARTS LIST FOR MODEL 776

For part numbers of tubular resistors and condensers, refer to lists in previous supplements.

- 29296 Cabinet body, complete, less lid
- 29297 Inner plate with spring
- 29298 Tuning cable chuck and plate less nut
- 29225 Vol. control chuck less nut
- 29226 Chuck nut
- 26523 Rubber gasket
- 26128 Thumbscrew (specify gold finish)
- 29233 Instruction folder, F-1235
- 21143 Plug suppressor
- 21144 Distributor suppressor
- 23260 1 MF, 200-V. condenser (K 1)
- 38270 Filter cond., .5 MF (224)
- 26098 Antenna cable
- 26099 Battery cable
- 26511 Shipping container
- 26462 Variable condenser
- 29286 Shield for T3
- 27095 Shield for T1 and T2
- 29183 I. F. T. shield
- 26505 Volume control .5 U
- 26033 Volume control mounting bracket
- 29224 Volume control hex. nut
- 29232 Volume control shaft-tube support
- 29279 Volume control shaft tube
- 44340 Tone control switch assembly
- 30037 Tone control shaft and blade
- 26451 Tube shield (cardboard)
- 29094 Terminal card

SOCKETS

- 24493 5-prong socket
- 24494 6-prong socket (85, 41)
- 27023 6-prong socket (6D6)
- 26111 7-prong socket
- 26372 Tip jack

TRANSFORMERS

- T1 38010 No. 1 R. F. T.
- T2 43840 No. 2 R. F. T.
- T3 43860 Osc. trans.
- T4 43640 No. 1 I. F. T.
- T5 43650 No. 2 I. F. T.
- T6 26982 Output T.
- T7 26291 Power T.

RESISTORS

- R1 20040 100 Ω, flexible
- R5 31830 250 Ω, flexible
- R16 23780 550 Ω, flexible
- R17 16840 22 Ω, flexible

CONDENSERS

- C4 43910 455 MMF, 500-V.
- C5 36510 700 MMF, 500-V.
- C9 35290 125 MMF, 500-V.
- C10, 15 25379 10 MF, 25-V. (electrolytic)
- C18 26995 8 MF-4 MF, 300-V. (electrolytic)
- C24 45530 .9 MF (H53)
- C25 36510 700 MMF, 500-V.

- TRIMMERS
- A4, 5 29119 On T4
 - A6 29119 On T5
 - A7 39420 Under var. cond.

POWER UNIT

- 43940 Power unit complete with tube
- 29289 Power unit container
- 27005 Vibrator
- 27038 Vibrator cover tube
- 26985 5-prong socket (rectifier)
- 26986 6-prong socket (vibrator)
- 27011 Filter choke (iron core)
- 36530 Choke (48-turn)
- 29264 Clamp for 48-turn choke
- 29094 Terminal card
- 29252 "A" lead from power unit
- 26291 Power transformer
- 26995 Electrolytic cond., 4 and 8 MF, 300-V.

SPEAKER

- 26851 Speaker less cable
- 29293 Lid with metal screen
- 26448 Plug only
- 19508 Cond. clamp
- 26826 Cone head assem.
- 26827 Field coil (6.5 Ω)

CONTROL UNIT

(The key numbers refer to illustration on facing page.)

- 1 30001 Case
- 2 30003 Bezel
- 3 30016 Dial plate
- 4 30002 Crystal
- 5 29341 Remote control complete with mounting parts less cables
- 6 30011 Key knob (volume)
- 7 30008 Tuning knob
- 8 30009 Tuning knob set screw
- 9 30023 Case mounting screw
- 10 30017 Pointer shaft
- 11 30007 Drive-shaft retaining screw
- 12 30038 Key retaining spring
- 13 30022 Post mounting screw
- 14 27118 6-8-volt dial light (green)
- 15 30013 Dial light socket and lead less lamp
- 16 30005 Drive shaft (gear)
- 17 30004 Dial pointer
- 18 30021 Lock washer
- 19 30006 Drive-shaft washer
- 20 29338 Strap and bushing
- 21 30015 Pointer gear
- 22 30014 Pointer pinion gear
- 23 26894 "U" washer, blue
- 24 30012 "U" washer, flat
- 25 29254 Vol. control cable assem.
- 26 29339 Steering post mtg. bracket
- 27 26105 Tuning cable assem.
- 30019 Sheath-clamping screw

I. F. COUPLING UNIT. Purchase from your distributor one of the special Atwater Kent I. F. coupling units No. 42590. This is placed on the grid cap of the I. F. or the 1st-detector tube, as specified, and the lead that normally connects to the grid cap is attached to the coupling unit.

GENERAL NOTES.

1. Do not tamper with the trimmer adjustments unless the necessity is clearly apparent.
2. On the oscillator trimmer there are two different settings at which the signal will be received. Always use the first of these two positions as you screw the trimmer in from a loose or minimum-capacity position. THIS IS IMPORTANT.
3. Check the I. F. trimmers first.
4. In checking the set, do not disturb the position of the wiring any more than necessary.

DIAL CALIBRATION.

The dial calibration depends on the oscillator circuit of the set, providing that the I. F. trimmers are correctly aligned to their specified frequency. The pre-selector (R. F. and 1st-detector) trimmers do not affect the dial calibration, but simply affect sensitivity.

The oscillator trimmer is used to adjust the high-frequency end of the scale.

The oscillator tracking condenser adjusts the low-frequency end of the scale.

If adjustment of the oscillator trimmer and the oscillator tracking trimmer condenser does not correct the dial readings, it may be necessary to replace the fixed oscillator tracking condenser or the oscillator transformer.

Naturally the I. F. trimmers should be checked and adjusted, if necessary, before any attempt is made to align the R. F. or oscillator trimmers.

PROCEDURE

I. F. TRIMMERS.

Connect I. F. test oscillator (264 KC) to I. F. tube by means of the regular I. F. coupling unit. Peak A6, A7. Connect I. F. oscillator to 1st-detector tube and peak A4, A5.

DIAL POINTER ADJUSTMENT.

Connect oscillator (560 KC) to antenna and ground and peak A8 while rocking the variable condenser for maximum sensitivity. Then adjust dial pointer to 560 KC mark by turning the adjustment nut at rear of control unit.

R. F. TRIMMERS.

Connect R. F. oscillator to antenna and ground of set.

With oscillator and dial at 1500 KC, peak A3, A2, A1. Check frequency alignment at 560 KC.

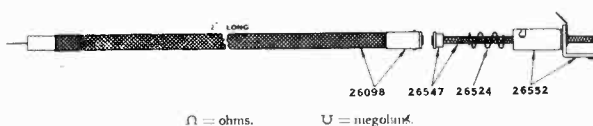
- | Part Number | Description |
|-------------|--|
| 21144 | Distributor suppressor, 15,000 Ω. |
| 27943 | .5 MF, 200-V., condenser for Ford cars. |
| 21143 | Plug suppressor, 15,000 Ω. |
| 23520 | Ignition filter. (Used in early models of Atwater Kent motor car receivers.) |
| 38270 | .5 MF, 200-V. condenser. |
| 23260 | 1 MF, 200-V., condenser (K1) |

- | Part Number | Description |
|-------------|--|
| 26943 | Universal mounting bracket for control unit in Models 666, 816, 926, 936, for mounting control head at lower edge of instrument panel. |

The mounting plates and bracket listed below are for Model 776 control unit

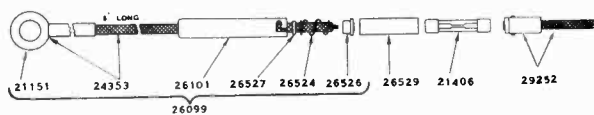
- | | | |
|-------|---|-------------------------------|
| 30025 | 1934 Ford | Dash finish. |
| 30029 | Universal mounting bracket for flush mounting of control head at lower edge of instrument panel. This type mounting may be used on all General Motors and other cars for which there are no mounting plates available. Also for cars which do not have the cut-out space in instrument panel. | |
| 29592 | 1935 Chrysler Air Stream | Vertical wood-grain finish. |
| 30027 | 1935 Plymouth, Dodge, DeSoto | Horizontal wood-grain finish. |
| 29591 | 1935 Ford | Taupe finish. |
| 30028 | 1935 Hudson and Terraplane | Dash finish. |
| 30026 | 1934 Chrysler, Plymouth, Dodge | Black finish. |

ANTENNA CABLE PARTS



Ω = ohms. U = megohm.

BATTERY CABLE PARTS

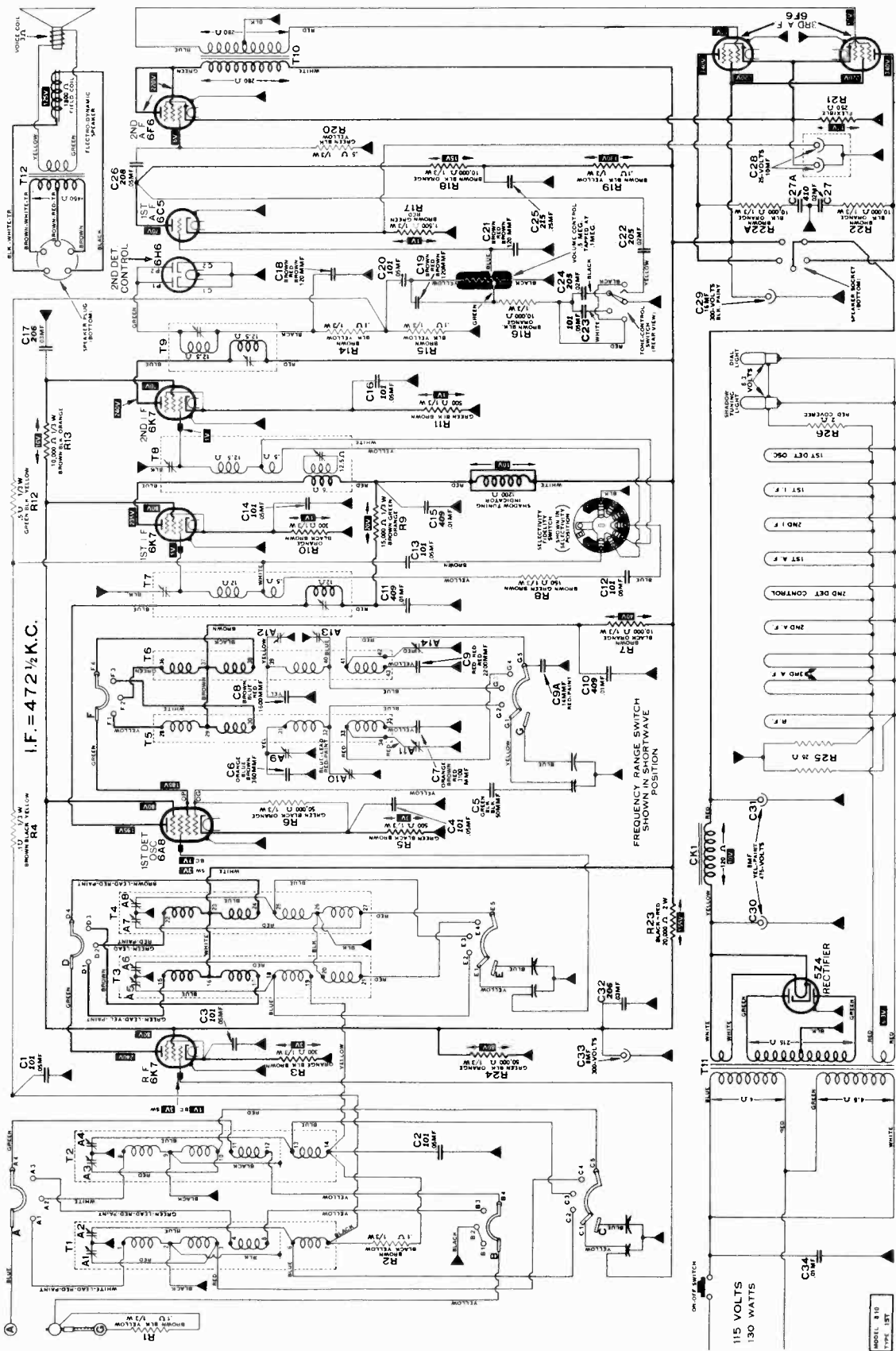


MODEL 810
Schematic, Voltage

ATWATER-KENT MFG. CO.

MODEL 810

For Alignment Data See Index.



I.F. = 472 1/2 K.C.

FREQUENCY RANGE SWITCH
SHOWN IN SHORT WAVE
POSITION

115 VOLTS
130 WATTS

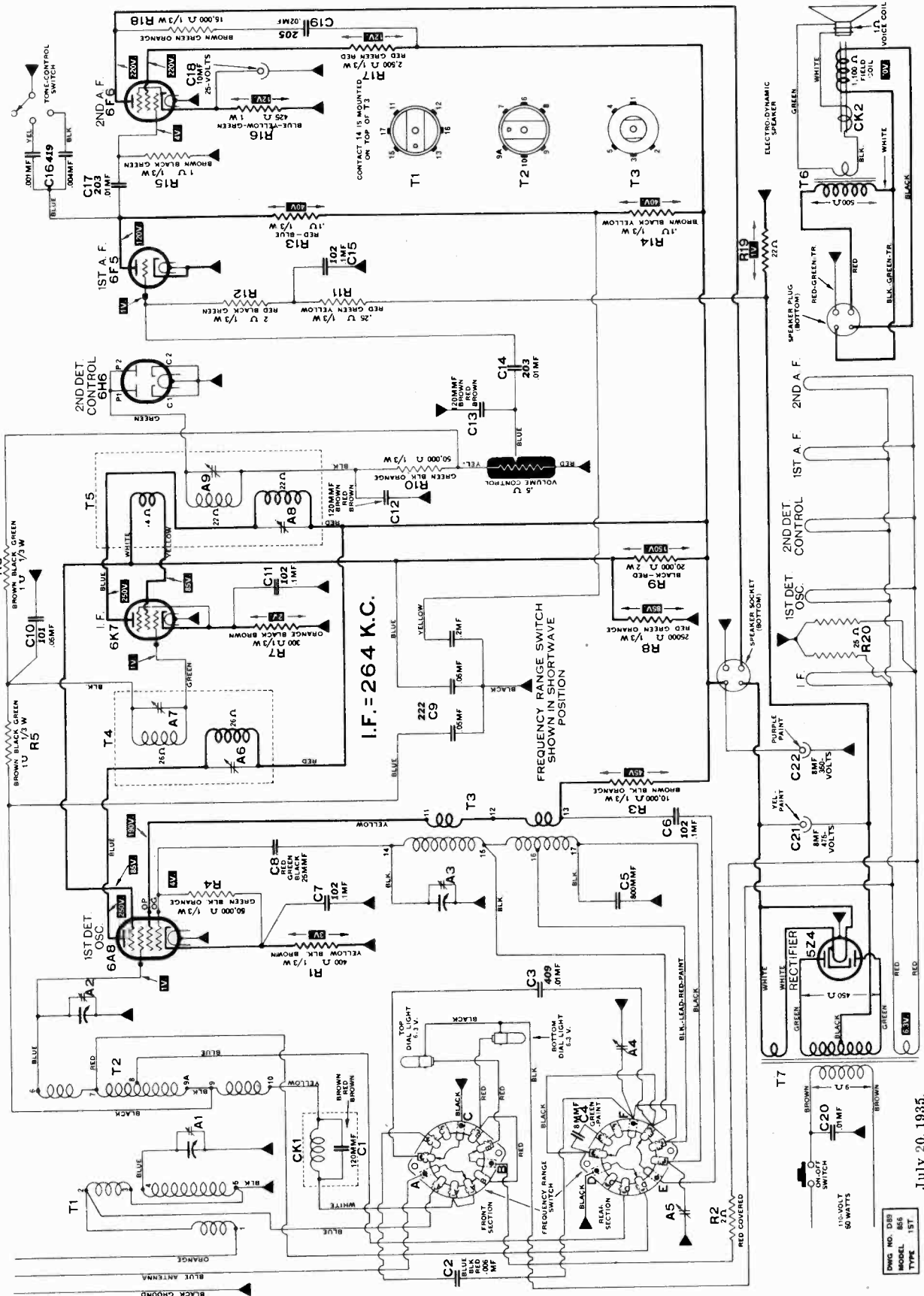
MODEL 810
TYPE 1ST

MODELS 856,976 (Early)
Schematic, Voltage

ATWATER-KENT MFG. CO.

MODELS 856 AND 976

For Alignment Data
See Index.



MODELS 237Q, 467Q

MODELS 317, 337

MODELS 856, 976

Trimmers, Alignment

ATWATER-KENT MFG. CO.

ATWATER KENT RADIO

ADJUSTING TRIMMER CONDENSERS

MODELS 237Q, 317, 328, 337, 467Q, 649, 810, 856 AND 976

GENERAL DATA.

When adjusting trimmers, keep the radio volume control turned on full, keep the tone control at "high," and turn the selectivity-fidelity switch (used in some models) to "selectivity."

Use the weakest possible oscillator signal that will give a reading on a sensitive output meter.

Use an Atwater Kent No. 42590 coupling unit to couple the I. F. oscillator to set. The coupling unit may be purchased from any Atwater Kent distributor, and is a necessity for correct I. F. alignment of Atwater Kent receivers.

On trimmers in the oscillator circuit, it may be found that there are two peaks (one peak where the oscillator frequency is higher than the signal by an amount equal to the I. F. frequency, and the second peak where the oscillator is lower than the signal by an amount equal to the I. F. frequency). The first peak (as the trimmer is screwed in from a loose or minimum-capacity position) is the correct peak.

On the 5- and 6-tube models, always peak the short-wave oscillator trimmer, which is mounted on variable condenser, before peaking the broadcast trimmer.

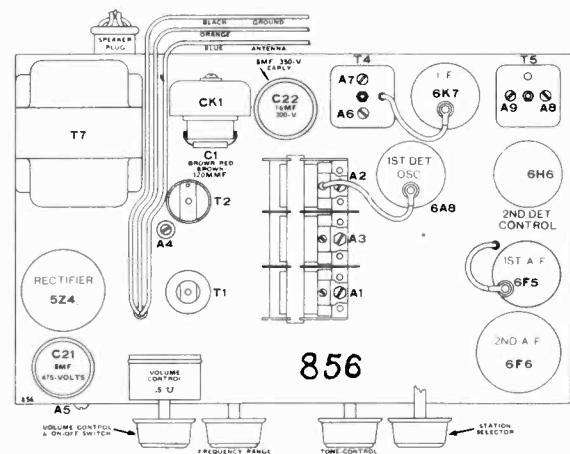
R. F. TRIMMERS.

Connect an R. F. test oscillator to the antenna and ground leads of set.

Short-wave range. With oscillator and dial at 18 MC, peak A5 and A2.

Police range. No trimmer adjustments on this range.

Broadcast range. With oscillator and dial at 1500 KC, peak A4, A3 and A1. With oscillator and dial at 560 KC, peak A6.



MODELS 856 AND 976

I. F. TRIMMERS.

Connect I. F. test oscillator (264 KC) to I. F. tube by means of regular I. F. coupling unit No. 42590. Peak A9 and A8. Connect I. F. oscillator to the 1st-detector grid and peak A7 and A6.

DIAL POINTER ADJUSTMENT.

With the variable condenser fully meshed, the dial pointer should be set at 535 KC.

R. F. TRIMMERS.

Connect an R. F. oscillator to the antenna and ground terminals of set.

Short-wave range. With oscillator and dial at 18 MC, peak A3.

Police range. No trimmers on this range.

Broadcast range. With oscillator and dial at 1500 KC, peak A4, A2 and A1. With oscillator and dial at 560 KC, peak A5.

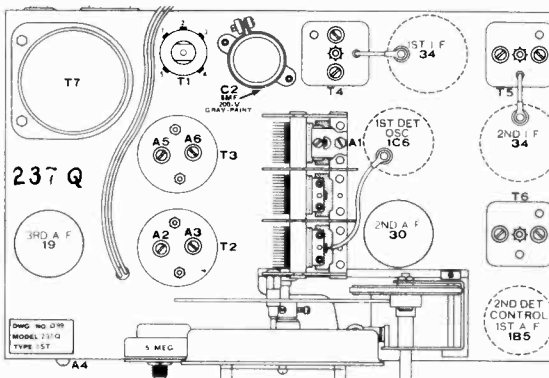
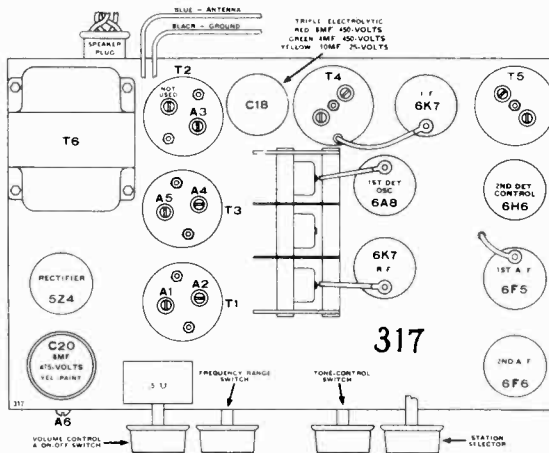
MODELS 317 AND 337

I. F. TRIMMERS.

Connect I. F. test oscillator (472½ KC) to I. F. tube by means of regular I. F. coupling unit No. 42590. Peak A9 and A10. Connect I. F. oscillator to grid of 1st-detector and peak A7 and A8.

DIAL POINTER ADJUSTMENT.

With variable condenser fully meshed, the dial pointer should be set at 538 KC.



MODELS 237Q AND 467Q

I. F. TRIMMERS.

Connect I. F. test oscillator (472½ KC) to 2nd-I. F. grid by means of regular I. F. coupling unit No. 42590. Peak two trimmers on top of T6.

Connect oscillator to 1st-I. F. grid and peak two trimmers on top of T5.

Connect oscillator to 1st-detector grid and peak two trimmers on T4.

DIAL POINTER ADJUSTMENT.

With the variable condenser fully meshed, the dial pointer should be set slightly below 540 KC.

R. F. TRIMMERS.

Connect an R. F. oscillator to the antenna and ground leads of set.

Short-wave range. Oscillator at 18 MC, and dial pointer at 18 MC, peak A6 and A3.

Police range. No trimmer adjustments for this range.

Broadcast range. Oscillator at 1500 KC, and dial pointer at 1500 KC, peak A5, A2 and A1. Tune oscillator to 560 KC, and with dial pointer at 560 KC mark, peak A4. Repeat adjustment of A5 at 1500 KC and A4 at 560 KC, if necessary.

ATWATER-KENT MFG. CO.

MODELS 328, 649
MODEL 810
Trimmers, Alignment

TRIMMERS ON MODEL 810

	12 to 18 MC range	4.6 to 12.2 MC range	1.6 to 4.6 MC range	540 to 1600 KC range
R. F.	A3	A1	A4	A2
1st-DET.	A7	A6	A8	A5
OSCILLATOR	A14	A11	A13	A10
TRACKING			A12	A9

There are six I. F. trimmers, two on top of each I. F. transformer (T7, 8, 9). These are adjusted at 472½ KC.

MODELS 328 AND 649

I. F. TRIMMERS.

Connect I. F. test oscillator (472½ KC) to grid of 2nd-I. F. tube by means of regular I. F. coupling unit No. 42590. Peak two trimmers on top of T6. Connect I. F. oscillator to grid of 1st-I. F. and peak two trimmers on top of T5. Connect I. F. oscillator to grid of 1st-detector and peak two trimmers on top of T4.

DIAL POINTER ADJUSTMENT.

Refer to instructions under Model 810.

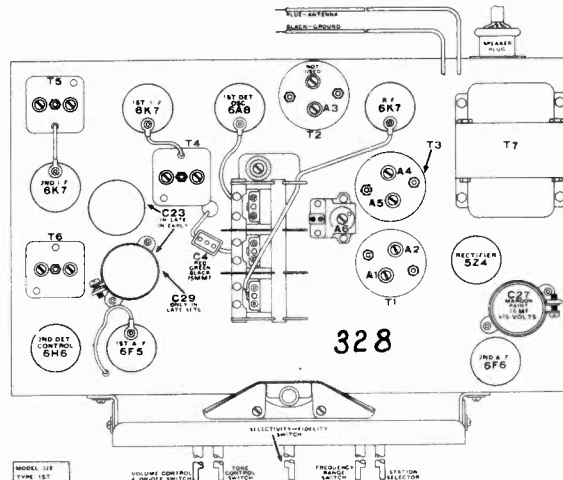
R. F. TRIMMERS.

Connect an R. F. test oscillator to the antenna and ground terminals of set. Loosen the trimmer screws for the range or ranges that are to be adjusted.

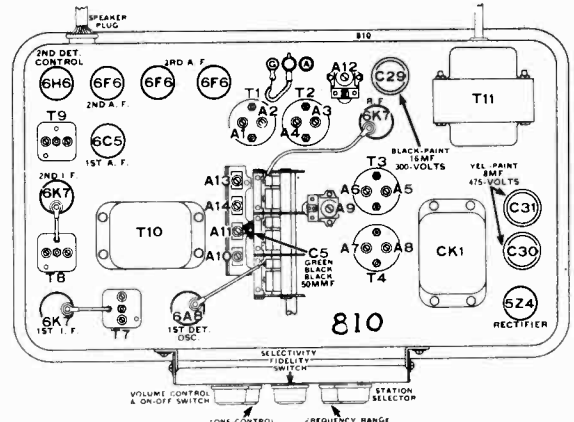
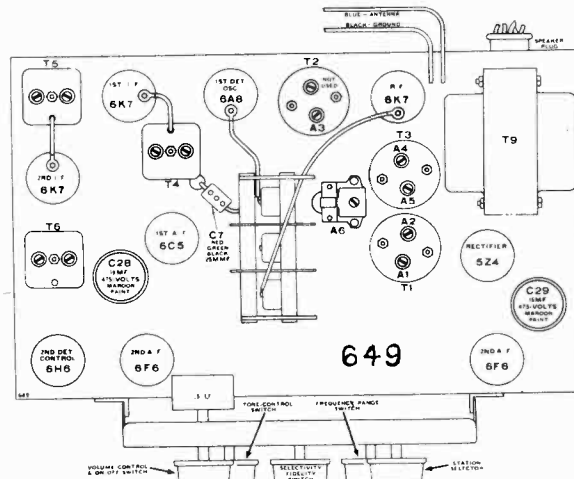
Short-wave range. Oscillator at 18 MC. dial at 18 MC. peak A5 and A2.

Police range. No trimmer adjustments for this range.

Broadcast range. Oscillator at 1500 KC and dial at 1500 KC. peak A4, A3 and A1. Oscillator and dial at 560 KC. peak A6.



MODEL 328 TYPE 1857



MODEL 810

I. F. TRIMMERS.

Connect a sensitive output meter to set. Connect I. F. test oscillator (472½ KC) to grid cap of 2nd-I. F. tube, using an Atwater Kent No. 42590 coupling unit. Use the weakest possible oscillator signal that will give a reading on the output meter, and peak two trimmers on T9.

Connect oscillator to 1st-I. F. grid cap and peak two trimmers on T8.

Connect oscillator to 1st-detector grid cap and peak two trimmers on T7.

DIAL POINTER ADJUSTMENT.

If the dial gear and indicator have been changed in any way, reset as follows:

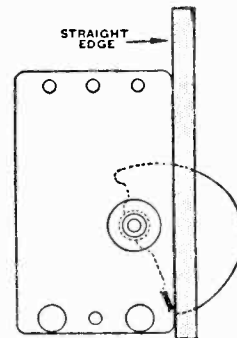
1. Loosen the two set screws which hold pointer gear on condenser shaft.

2. Turn condenser to minimum.

3. See illustration below. Place straight-edge gauge in vertical position with the long flat face against the front mounting plate of the variable condenser as shown. Turn the condenser until the front edge of the rotor spacing bar just touches the straight edge. Hold the condenser in this position and move the pointer arm so the pointer is at 1520 KC (1580 KC in 328, 649), after which tighten the set screws to hold the dial gear securely.

4. Loosen the screws which hold the pointer to the pointer arm, and adjust the pointer so that when the condenser is completely meshed, the pointer is at 535 KC.

Recheck at 1520 KC (1580 KC in 328, 649) and repeat procedure 3 and 4, if necessary.



This illustration shows the correct position of the variable condenser rotor for a dial pointer setting of 1520 KC (1580 KC in 328, 649). The straight edge is held firmly against the front mounting plate of the variable condenser and the rotor is turned so the spacing bar (shown as a small black oblong) is just touching the straight edge. The straight edge is a strip of bakelite or hard rubber ¼" thick, ⅝" wide, and 6" long. The ⅝" side is held against the mounting plate.

R. F. TRIMMERS.

12 to 18 MC range. Oscillator and dial pointer at 18 MC. peak A14, A7 and A3.

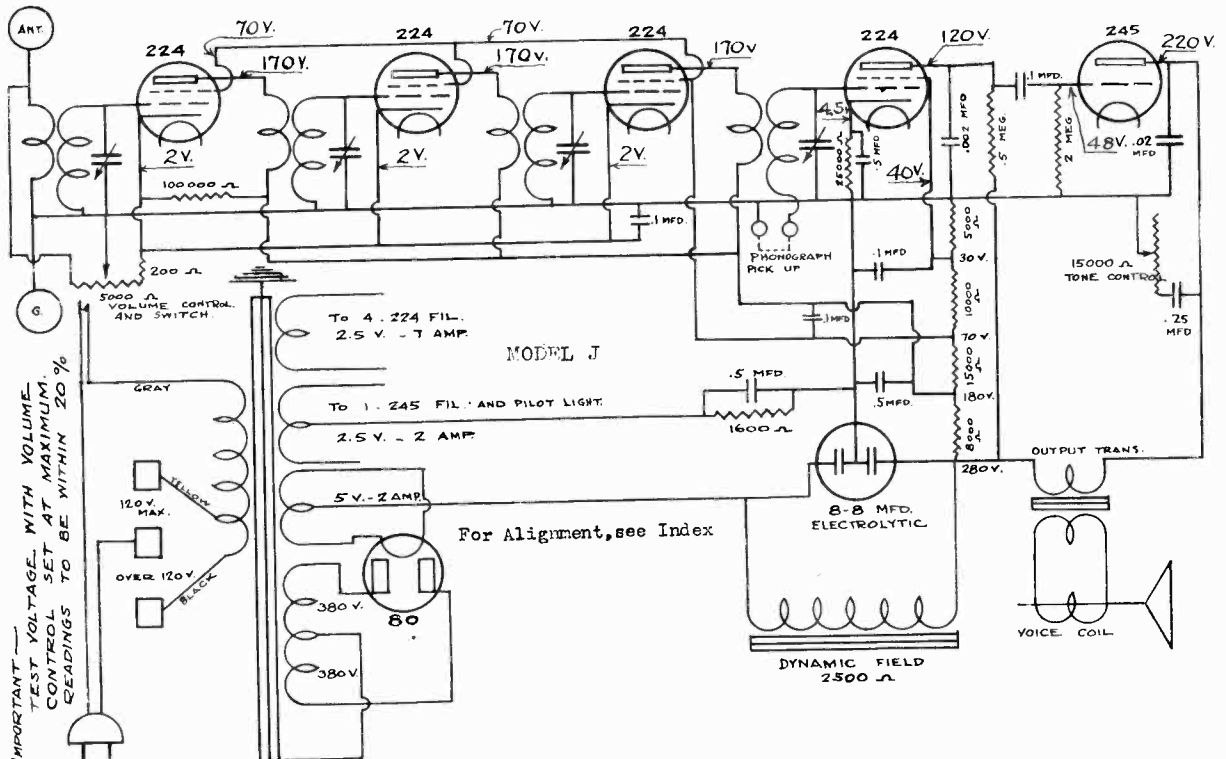
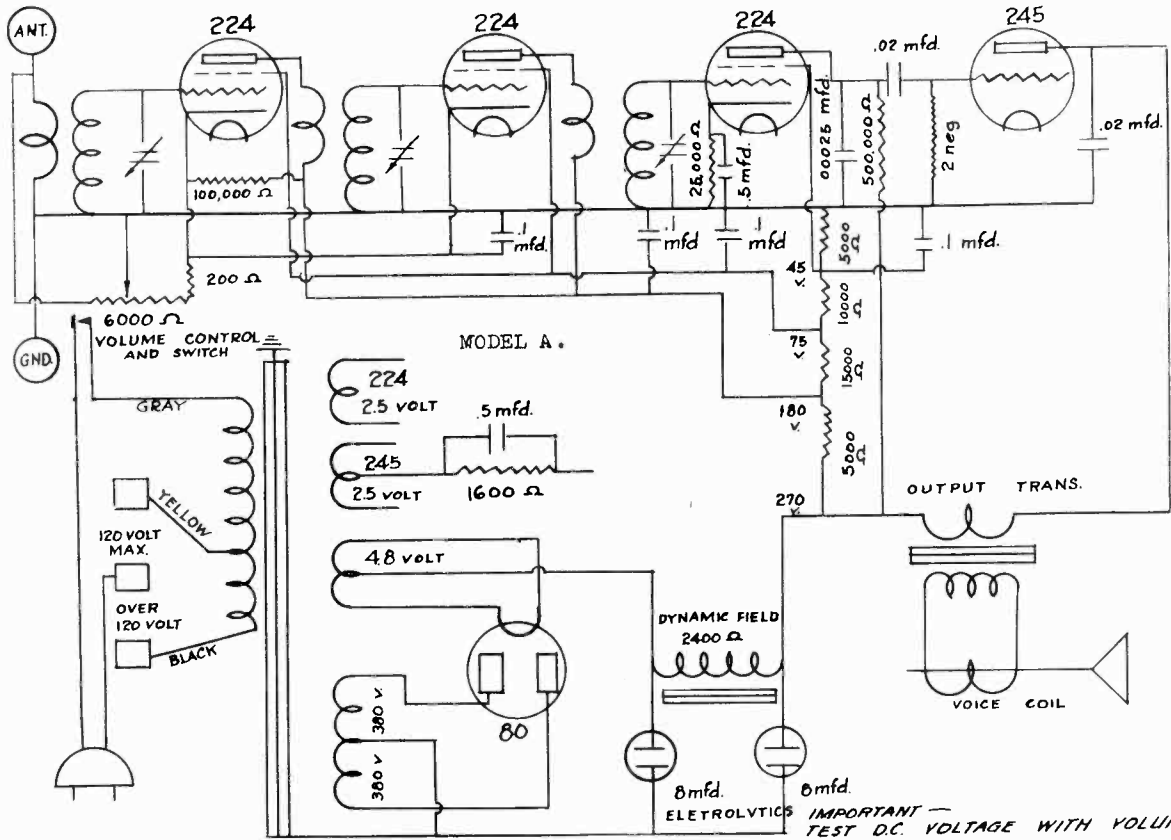
4.6 to 12.2 MC range. Oscillator and pointer at 12 MC. peak A11, A6 and A1.

1.6 to 4.6 MC range. Oscillator and pointer at 4 MC. peak A13, A8 and A4. Tune oscillator to 1.7 MC, and with pointer at 1.7, peak A12.

540 to 1600 KC range. Oscillator and pointer at 1500 KC. peak trimmers A10, A5 and A2. Oscillator and pointer at 540 KC. peak A9.

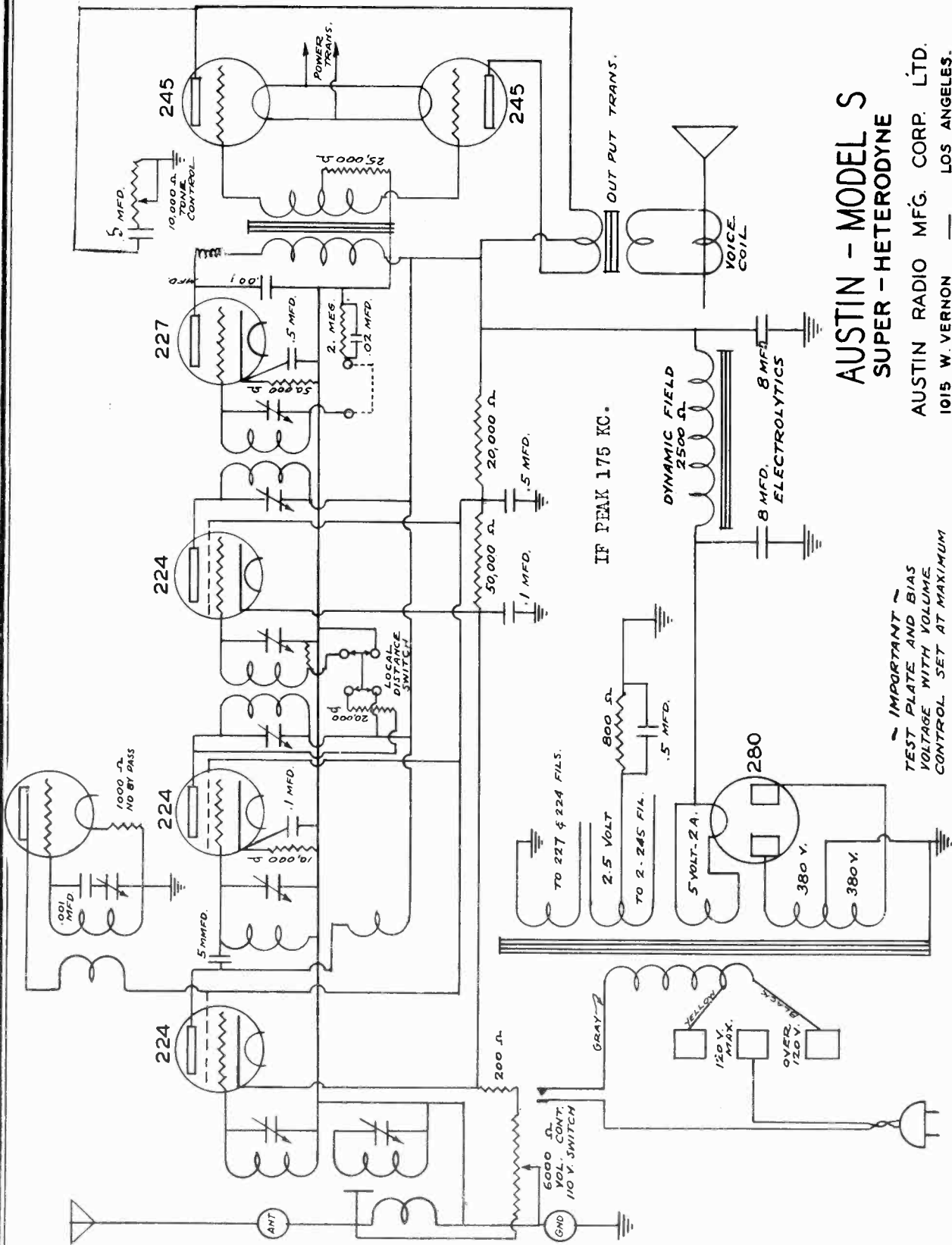
AUSTIN RADIO MFG. CO.

MODEL A
MODEL J
Schematic, Voltage



MODEL S
Schematic

AUSTIN RADIO MFG. CO.



AUSTIN - MODEL S SUPER - HETERODYNE

AUSTIN RADIO MFG. CORP. LTD.
1015 W. VERNON — LOS ANGELES.

HETZEL ENG

IMPORTANT -
TEST PLATE AND BIAS
VOLTAGE WITH VOLUME
CONTROL SET AT MAXIMUM

G.931

MODEL J
 MODEL SP
 Alignment, Voltage

AUSTIN RADIO MFG. CO.

MODEL SP

(a) Intermediate frequency amplifier adjustment.

The intermediate frequency amplifier has four tuning adjustments, accessible thru holes underneath the chassis. The amplifier should be peaked at 175 kilocycles.

(b) Tuning condenser adjustment.

The four gang tuning condenser has four trimming condensers located on the top of the condenser unit. These should be all set at maximum (clockwise) and then reversed one full revolution. Set condenser dial at approximately 1350 K.C. and re-adjust all trimmers for maximum response. Then set condenser at approximately 650 K.C. and obtain maximum response by bending the split rotor plates.

Testing

All plate, screen, cathode or bias voltage readings must be made with a volt meter having a resistance of at least 1000 ohms per volt. Readings should be taken with the volume control full on with no signal.

R.F. amplifier plate voltage	190
Oscillator plate	60
Het. Det. plate	190
I. F. plate	190
Det. plate	110
Audio plate	230
R.F. & I.F. screens	60
R.F. cathode	2.8
Osc. cathode	2.5
Het. Det. cathode	4.8
I.F. cathode	3
Det. cathode	8.2
Audio bias	18
Audio screen bias	248

Balancing

MODEL J

Set all trimmer condensers on the gang variable condenser to maximum by turning adjusting screws to right (clockwise) and then reverse one complete revolution. Tune some station in at approximately 1400 kilocycles on the dial and adjust all trimmers for maximum signal strength. Next turn dial to approximately 700 kilocycles. Bend the split rotor plates on the variable gang condenser to accomplish the same condition of maximum signal strength.

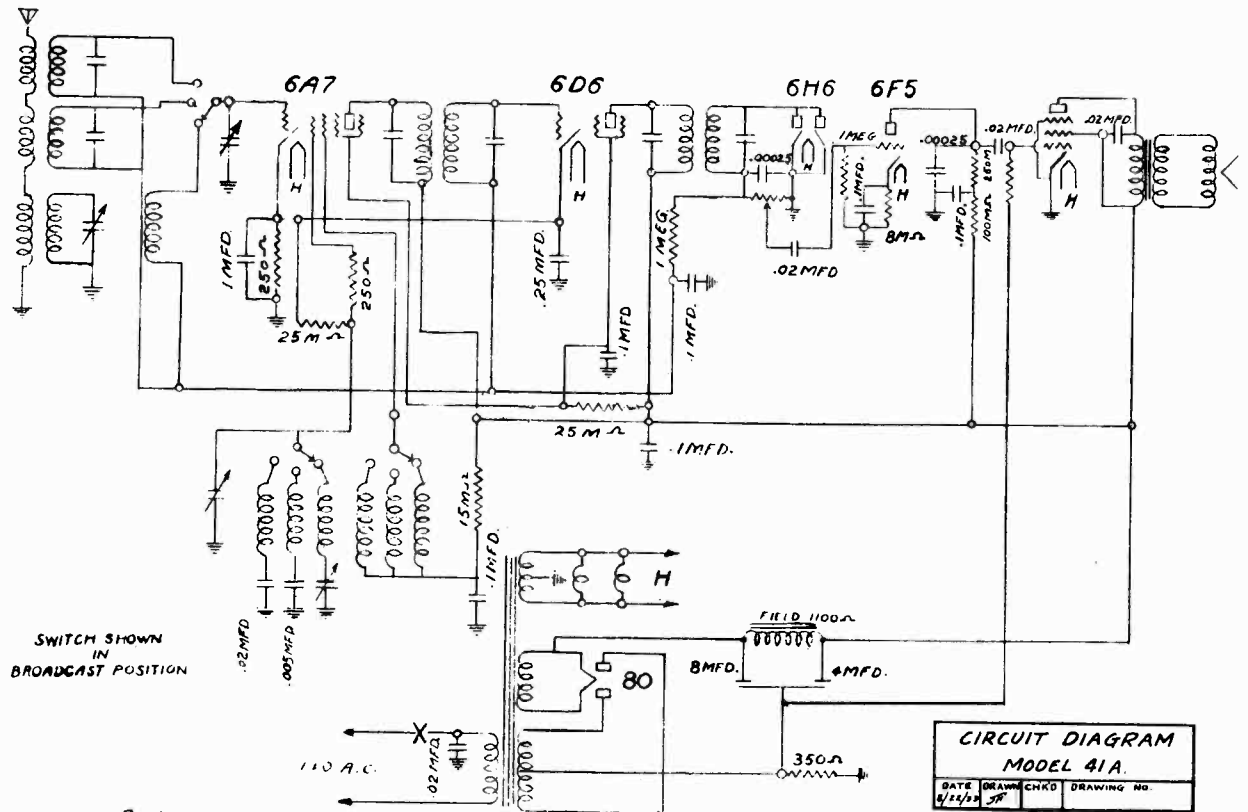
Testing

All readings of direct current voltage should be made with a high resistance voltmeter of at least 1000 ohms per volt. The following readings should be obtained with an allowable variation of 15%, with volume control set at maximum.

R.F. Plate voltage	170.
R.F. Screen "	70.
R.F. Cathode "	2.
Det. Plate "	120.
Det. Screen "	40.
Det. Cathode "	4.5
Audio Plate "	220.
Audio Bias "	48.

BALKEIT RADIO CO.

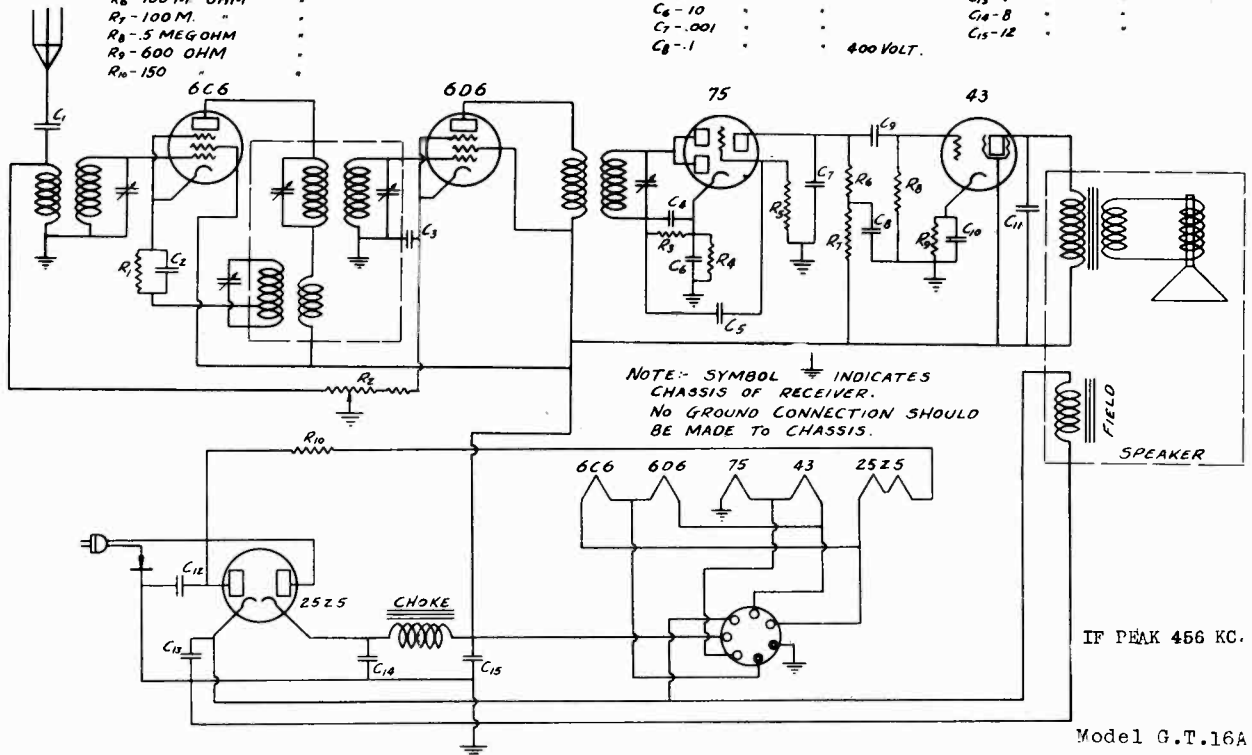
MODEL GT-16A
MODEL 41-A
Schematics



- R₁ - 8 M. OHM RESISTOR.
- R₂ - 300 M. OHM VOLUME CONTROL WITH 250 OHM
- R₃ - .5 MEG OHM RESISTOR. FIXED BIAS RESISTOR.
- R₄ - 8 M. OHM
- R₅ - .5 MEG OHM
- R₆ - 100 M. OHM
- R₇ - 100 M.
- R₈ - .5 MEG OHM
- R₉ - 600 OHM
- R₁₀ - 150

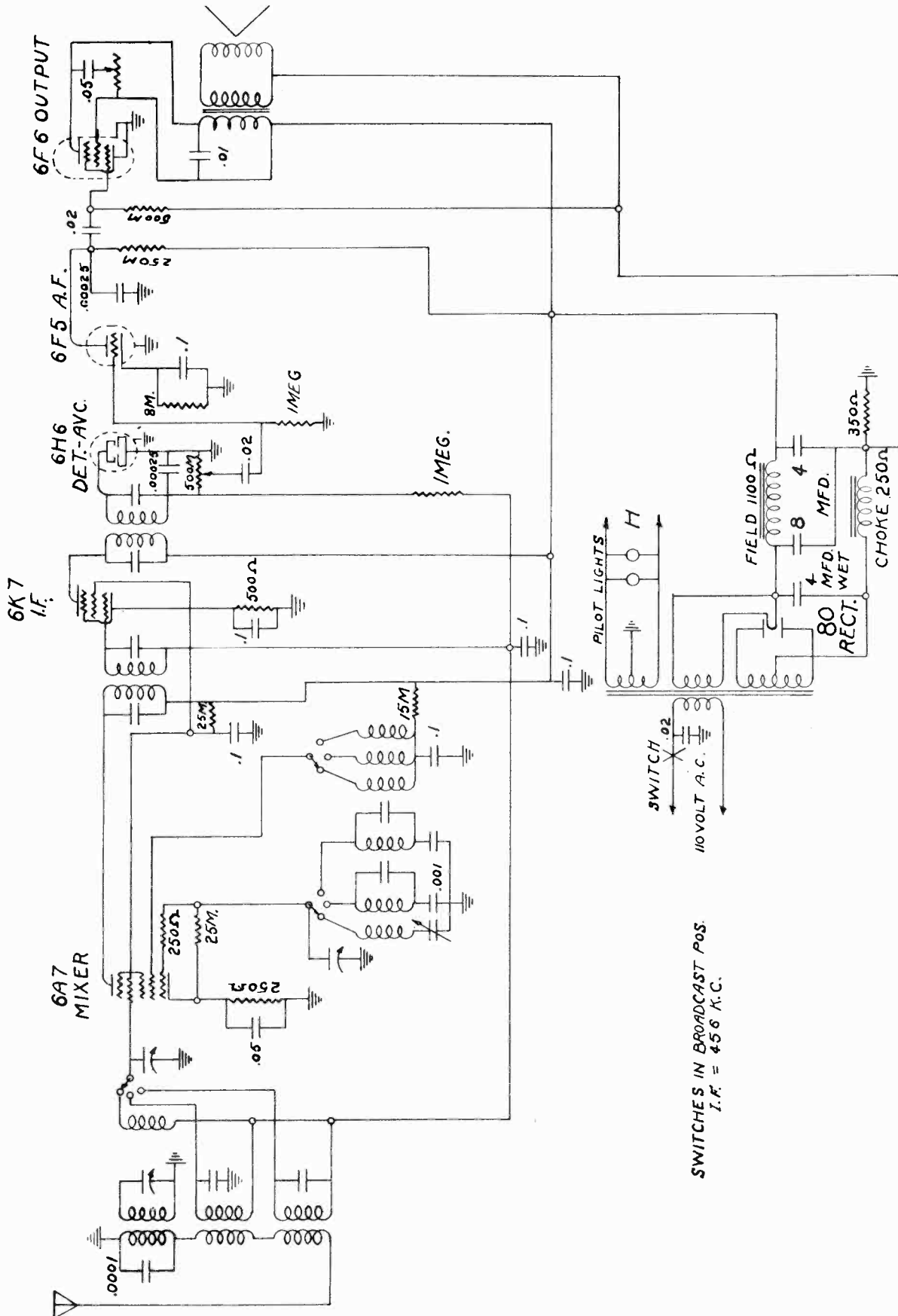
- C₁ - .001 MFD. CONDENSER
 - C₂ - .002
 - C₃ - 1
 - C₄ - .00015
 - C₅ - .01
 - C₆ - 10
 - C₇ - .001
 - C₈ - 1
- 400 VOLT.

- C₉ - .01 MFD. CONDENSER
- C₁₀ - 10
- C₁₁ - .006
- C₁₂ - .01
- C₁₃ - 4
- C₁₄ - 8
- C₁₅ - 12



MODELS G-18A, G-19B
Schematic

BALKEIT RADIO CO.

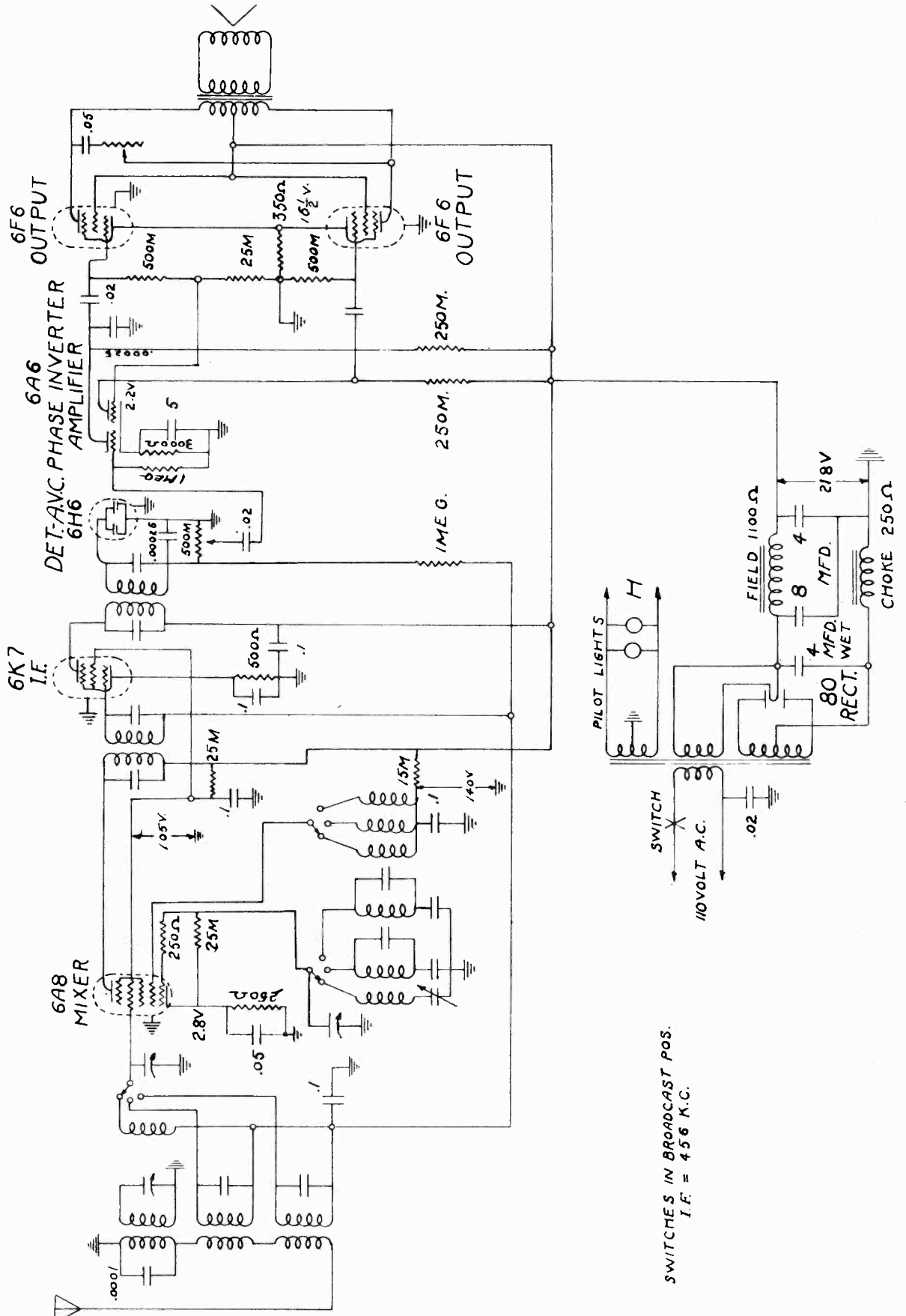


SWITCHES IN BROADCAST POS.
I.F. = 456 K.C.

BALKEIT RADIO CO.

MODELS GT-20,GT-200X.

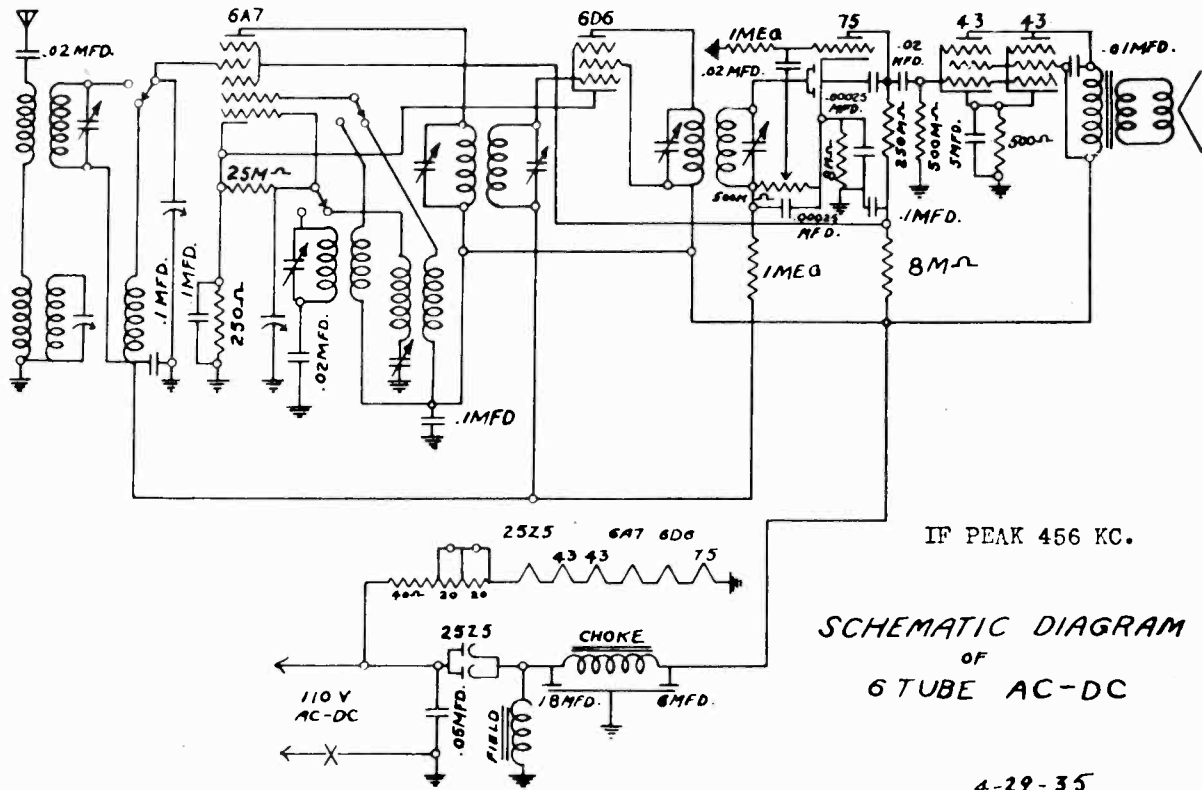
Schematic



MODEL GT-33

Schematic, Alignment

BALKEIT RADIO CO.



4-29-35

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456,000, 1400, 3000 and 10,000 K.C. and an output meter to be connected across the primary or secondary of the output transformers.

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 AVC from operating and giving false readings.

CAUTION: Do not let the test oscillator come in direct contact with the receiver chassis.

I.F. ALIGNMENT Adjust the test oscillator to 456 K.C. and connect the output to the grid of the 1st detector tube (6A7) through a .05 or .1 mfd. condenser. If desired 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.

R.F. ALIGNMENT Adjust the test oscillator to 1400 K.C. and connect the output to the antenna post through a .0001 mfd. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 K.C. and adjust the rear gang condenser trimmer to peak. This adjusts the receiver on scale. Then adjust the two front gang trimmers to peak.

Next rest the dial pointer on the receiver and the test oscillator to 600 K.C. Slowly increase or decrease 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 seems a little complicated but is the easiest way to adjust the oscillator to the preselector or R.F. section. The padding condenser is located on the left hand end of the chassis.

Return to 1400 K.C. and again go over the adjustments at that frequency to be sure they have not been thrown out of adjustment.

SHORT WAVE BANDS

The foreign band of 19 to 49 meters can be adjusted by the two trimmers on the short wave coil located next to the gang condenser. Set the test oscillator to 10 megacycles or 31 meters.

The police and aviation band can be adjusted from a signal set at 3,000 K.C. or 300 on the Dial. The oscillator trimmer is located underneath the chassis and the R.F. trimmer is between the 6A7 tube and the wave change switch.

The gang condenser trimmers are not to be used for alignment of either of the short wave bands.

SERVICE HINTS

CAUTION: Be very careful in handling the receiver chassis as it is connected to one side of the power line.

LOW VOLUME This may be caused by weak or defective tubes (Replace with set of tubes known to be in good condition) open antenna coil, open or shorted by-pass condensers or defective wave change switch. Poor receiving locations such as steel buildings may require extra antenna to get good reception.

LOW VOLTAGE Low voltage may be caused by a defective rectifier tube, open filter condenser or shorted by-pass condensers.

HUM Excessive hum may be caused by a defective tube, open or shorted by-pass condensers or open audio grid leads.

DISTORTED REPRODUCTION This may be caused by a defective 75 or 43 tube or a ground or open in the automatic volume control circuit. Check all circuits with an ohmmeter or continuity tester.

OSCILLATION Most trouble from oscillation is due to open by-pass condensers in the R.F. or I.F. circuits. Test each condenser with another condenser in parallel.

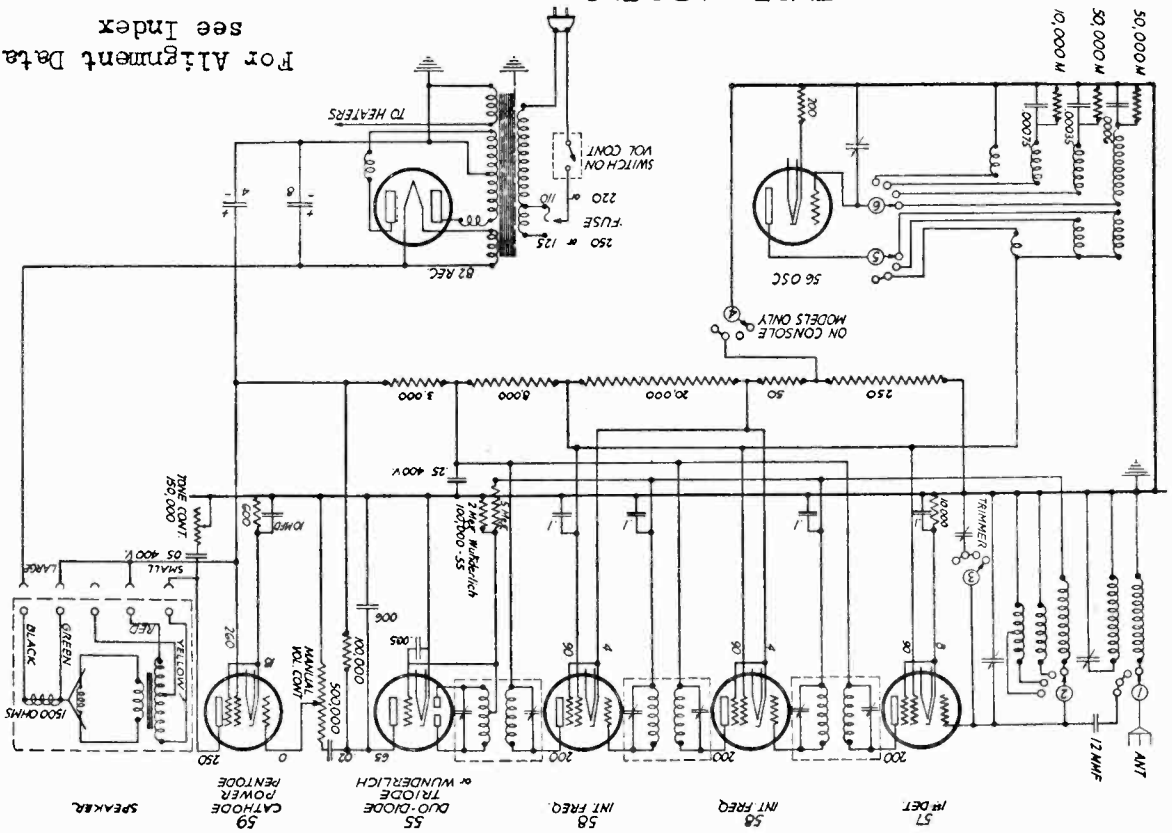
The grid lead on the 75 tube may also cause a howl if it runs too close to the 42 tube.

BARKER BROS.

Two Types Schematic, Voltage

7 TUBE MODELS (Compact and Consoles)

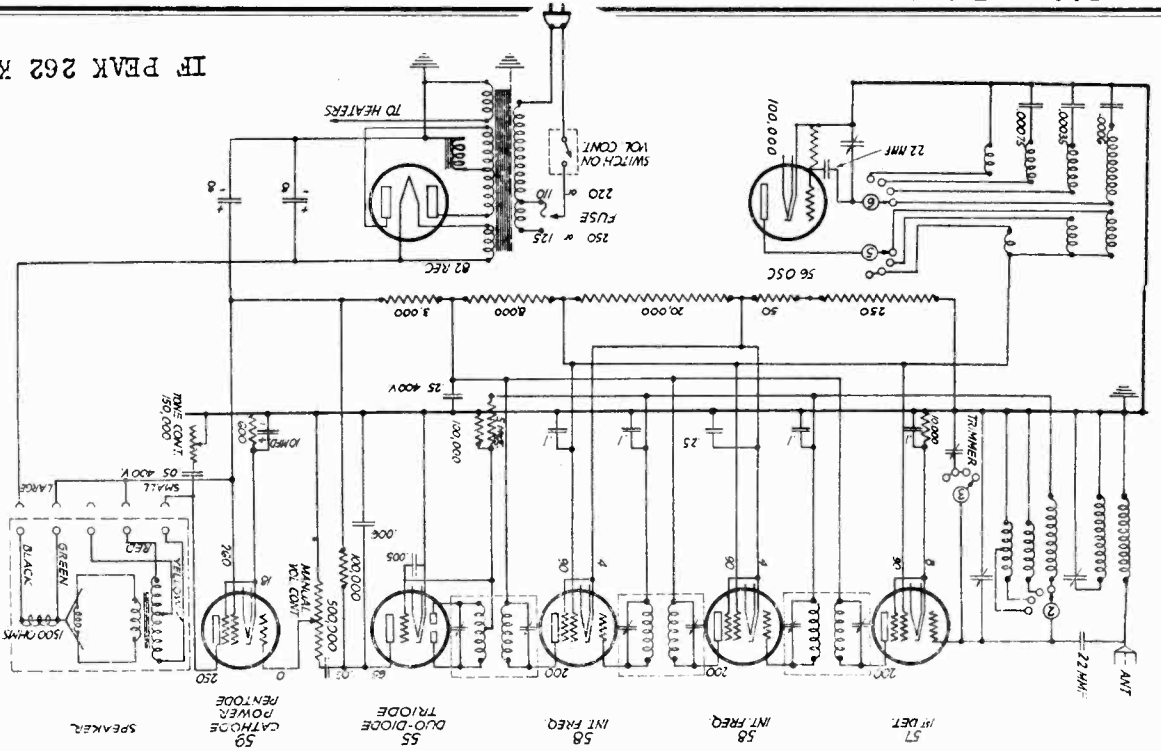
Without Rear Fuse and Cover



7 TUBE MODELS (Compact and Consoles)

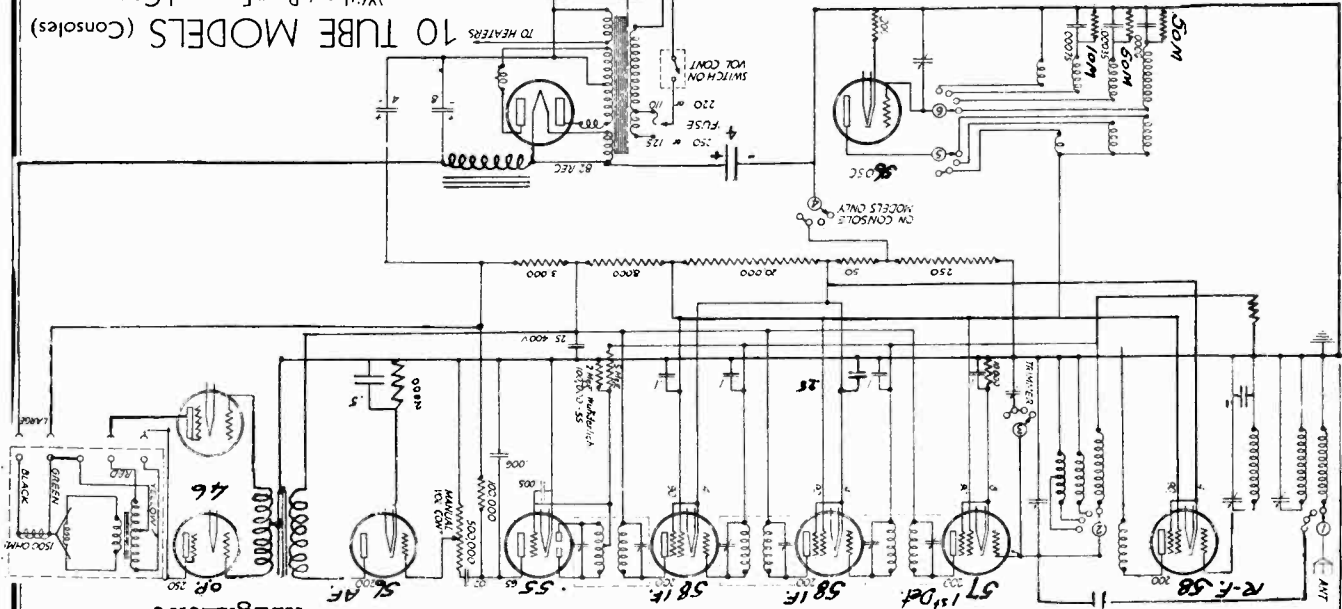
With Rear Fuse and Cover

For Alignment Data, see Index



BARKER BROS.

MODEL I
MODEL M
Schematic, Voltage
Alignment



MODEL P
Alignment

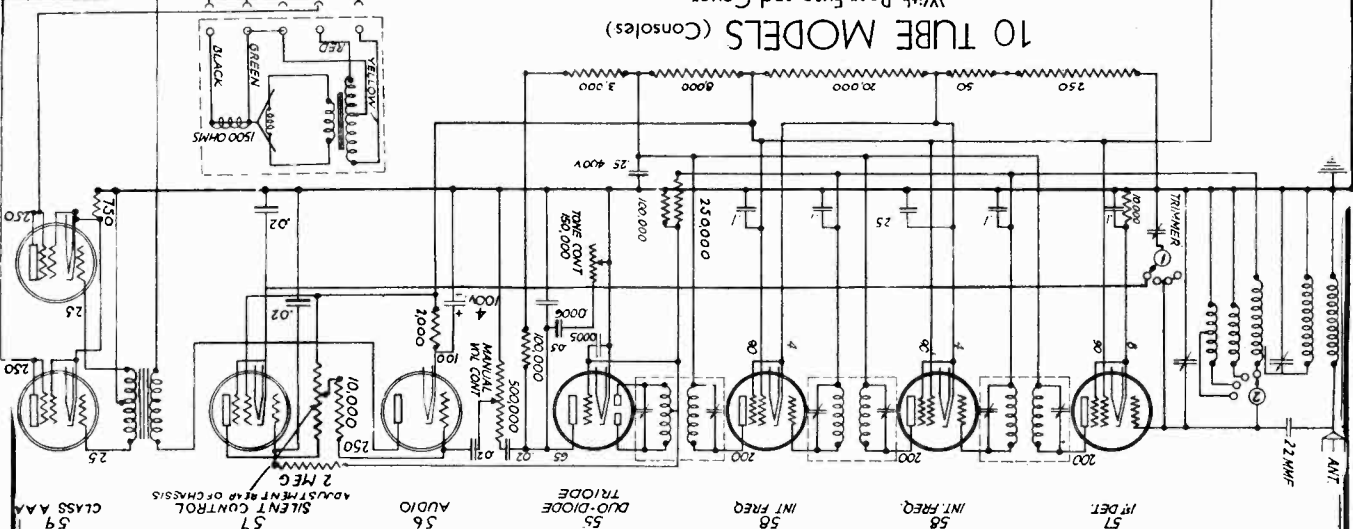
Models L, M, and P Alignment

INTERMEDIATES

Connect a 262 K.C. oscillator to the first detector grid (No. 57 tube next to the dial) leaving grid cap in place. Remove oscillator tube (No. 56). Set dial at 100. Hook up vacuum tube voltmeter as described and carefully adjust 6 varitor screws for maximum gain (minimum reading of meter). Don't flat top any stages. Have all shields in place. Keep volume control at lowest level.

CONDENSER GANG

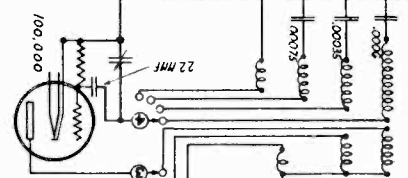
Set dial at 100 when gang is at maximum position and tighten dial set screws. Tune in a station (or use an oscillator) to a known frequency signal around 1400 K.C. Carefully adjust oscillator section of gang until frequency is correct on dial.
If the intermediates are balanced on 262 K.C., the dial will now track within 5 K.C. over the entire dial. Adjust first detector section for maximum gain and follow by adjusting band pass trimmers.



10 TUBE MODELS (consoles)
With Rear Fuse and Cover

No. 59 Power Tubes

56 05C



IF PEAK 262 KC.

BALKRIT RADIO CO.

ALIGNMENT DATA

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 3000 and 10,000 K. C. and an output meter to be connected across the speaker terminals.

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 AVC from operating and giving false readings.

I. F. ALIGNMENT Adjust the test oscillator to 1400 K.C. and connect the output to the antenna wire through a .0001 mfd. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 K.C. and adjust the rear gang condenser trimmer to peak. This adjusts the receiver on scale. Then adjust the front or R.F. trimmer to peak.

Next rest the dial pointer on the receiver and test oscillator to 600 K.C. Slowly increase or decrease 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 seems a little complicated but is the easiest way to adjust the oscillator to the R.F. section. The padding condenser is located on the left hand end of the chassis.

Return to 1400 K.C. and again go over the adjustment at that frequency to be sure they have not been thrown out of adjustment.

SHORT WAVE BANDS

The foreign band of 19 to 49 meters can be adjusted by the two trimmers on the short wave coil located next to the gang condenser. Set the test oscillator to 10 megacycles or 31 meters.

The police and aviation band can be adjusted from a signal set at 3,000 K.C. or 300 on the dial. The oscillator trimmer is located underneath the chassis and the R.F. trimmer is between the 6A7 tube and the wave change switch.

The gang condenser trimmers are not to be used for alignment of either of the short wave bands.

SERVICE HINTS

VIBRATOR Vibrator noise may be due to the following: a discharged "A" battery, high resistance connections on battery terminals, a defective vibrator or a loose cover on the vibrator can.

The vibrator unit is a plug-in type and can be removed for replacement very easily. This unit should last a very long time as current through the contact points is very small. Never leave the power switch turned on when the "A" battery is too low to make the receiver function as this is liable to seriously injure the vibrator or vibrator transformer. Never remove any of the tubes when the power switch is turned on as they are connected in a series parallel circuit.

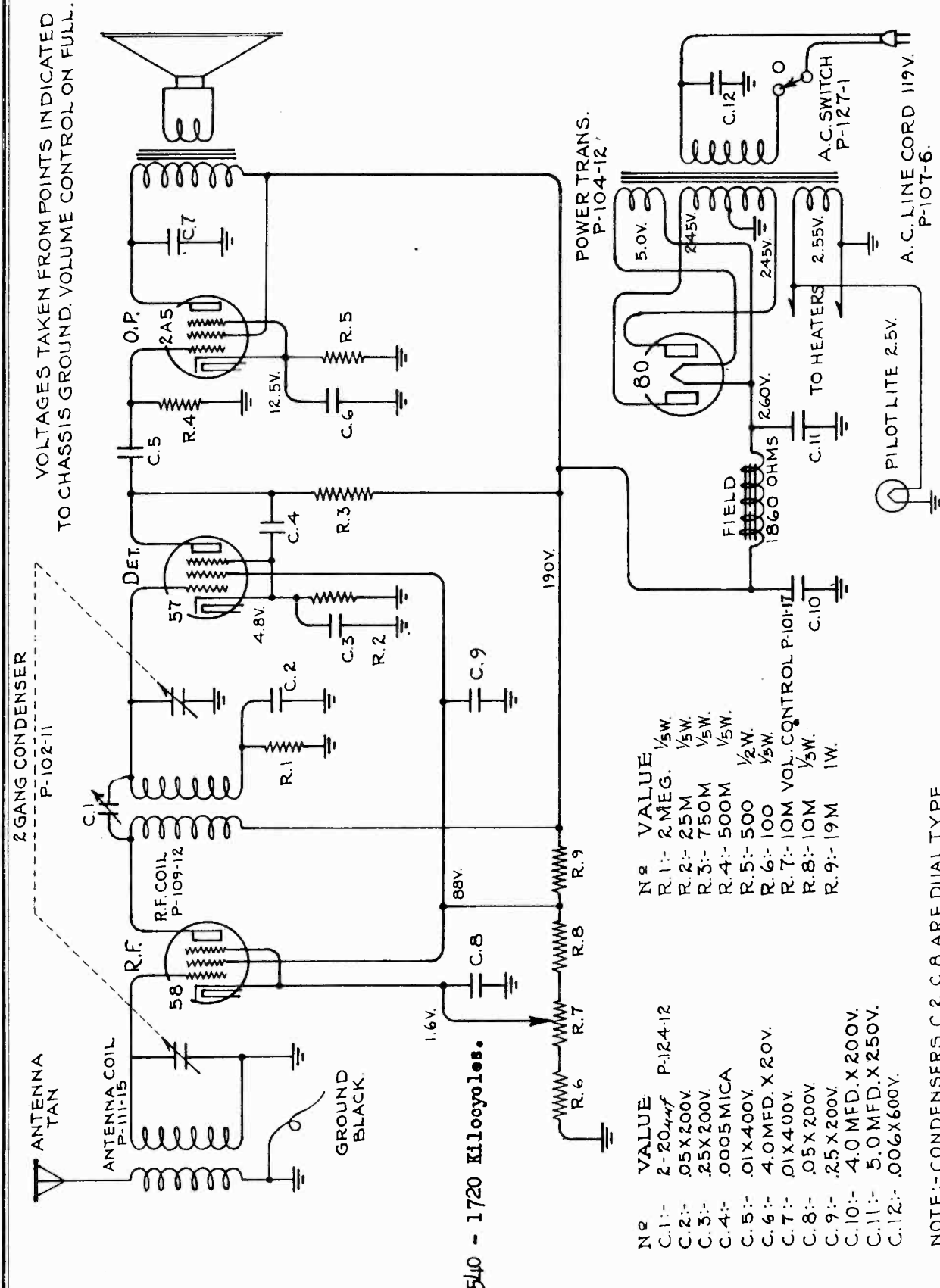
MICROPHONICS The two volt type of tubes used in this receiver are ordinarily more microphonic than better types. They can be detected by touching each tube with the finger tip. Another source might be caused by the dial glass touching the front or escutcheon plate.

LOW VOLUME This trouble may be caused by weak or defective tubes (replace with set of tubes known to be in good condition); antenna disconnected from the receiver. open antenna coil or open or shorted by-pass condensers. Some localities remote from broadcasting stations may require an extra long antenna of about two hundred feet.

LOW VOLTAGE Low voltage may be caused by a low battery, a defective vibrator, corroded battery terminal or shorted by-pass condensers. Increasing the length of battery leads might cause low voltage and vibrator noise.

BELMONT RADIO CORP.

MODEL 401
Schematic
Voltage



VOLTAGES TAKEN FROM POINTS INDICATED TO CHASSIS GROUND. VOLUME CONTROL ON FULL.

2 GANG CONDENSER P-102-11

540 - 1720 Kilocycles.

- | | | | |
|----------|------------------------|----------|---------------------------|
| № | VALUE | № | VALUE |
| C. 1:- | 2-20 μ mf P-124-12 | R. 1:- | 2 MEG. $\frac{1}{2}$ W. |
| C. 2:- | .05 X 200V. | R. 2:- | 25M $\frac{1}{2}$ W. |
| C. 3:- | .25 X 200V. | R. 3:- | 750M $\frac{1}{2}$ W. |
| C. 4:- | .0005 MICA | R. 4:- | 500M $\frac{1}{2}$ W. |
| C. 5:- | .01 X 400V. | R. 5:- | 500 $\frac{1}{2}$ W. |
| C. 6:- | 4.0 MFD. X 20V. | R. 6:- | 100 $\frac{1}{2}$ W. |
| C. 7:- | .01 X 400V. | R. 7:- | 10M VOL. CONTROL P-101-17 |
| C. 8:- | .05 X 200V. | R. 8:- | 10M $\frac{1}{2}$ W. |
| C. 9:- | .25 X 200V. | R. 9:- | 19M 1W. |
| C. 10:- | 4.0 MFD. X 200V. | | |
| C. 11:- | 5.0 MFD. X 250V. | | |
| C. 12:- | .006 X 600V. | | |

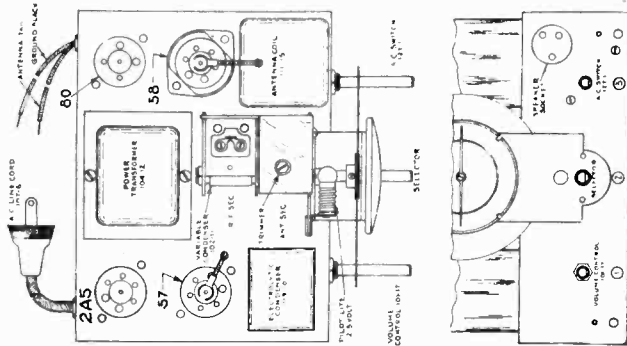
NOTE:- CONDENSERS C. 2, C. 8 ARE DUAL TYPE.
CONDENSERS C. 3, C. 9, ARE DUAL TYPE.
CONDENSERS C. 6, C. 10, C. 11 IN ONE UNIT P-119-10
RESISTOR R. 6 IN VOL. CONTROL P-101-17

NOTE:- NUMBERS PREFIXED BY LETTER 'P' ARE PART NUMBERS.

MODEL 401

Socket, Trimmers
Alignment, Notes

BELMONT RADIO CORP.



From left to right, when facing the set, the controls are as follows:

- (1) Volume control. Clockwise, right turn, increases volume.
- (2) Center control, station selector. The top half of the pointer traverses a scale calibrated directly in kilocycles the bottom half a scale calibrated in meters. This scale is provided for your convenience, some stations are listed in kilocycles, others in meters.
- (3) Right rotation turns set on, left rotation turns set off. When turning receiver on dial will become illuminated. It is necessary to wait approximately 45 seconds for the tubes to heat up after turning set on.

MODEL 401

SERVICE MANUAL FOUR TUBE A.C. - T.R.F. RECEIVER

105-125 Volts, 60 Cycle Alternating Current - 40 Watts

FOR VOLTAGES IN EXCESS OF 125, A SPECIAL TRANSFORMER IS REQUIRED, ALSO FOR 25 CYCLES. A UNIVERSAL TRANSFORMER IS NOT AVAILABLE FOR THIS MODEL.

SERVICE NOTES

Should it ever become necessary or desirable to realign this receiver the proper procedure is as follows:

Before attempting any adjustment, the set must be disconnected from the power supply, the tubes should be checked, serial inspected and connections cleaned if necessary. To remove chassis from cabinet, pull off volume, selector and switch knobs and remove the three bolts which fasten chassis to cabinet.

ALIGNMENT:

1. With an external oscillator set at 1720 kilocycles connected to the grid of the type 58 R.F. tube (cap at top of tube) and with the variable condenser at its minimum capacity position, plates entirely out of mesh, adjust trimmer on R.F. coil (accessible from the under side of the chassis) to resonance. Use as a resonance indicator an output meter connected across the primary of the speaker input transformer or by means of an adapter to the plate and screen terminals of the type 2A5 output tube.
2. Re-set external oscillator to 1400 kilocycles and connect in series with a 50 mmfd. condenser, to the tan antenna lead and black ground lead and adjust the antenna trimmer (front section of variable condenser - see illustration) to resonance. When making this adjustment, rock the condenser back and forth with the selector knob while adjusting the trimmer until maximum output is obtained.
3. Bend plates of antenna, front section of condenser, to resonance with external oscillator set at 1200, 1000, 800, 600 kilocycles. Output should be fairly uniform over the entire band, dropping off slightly at the higher frequencies.

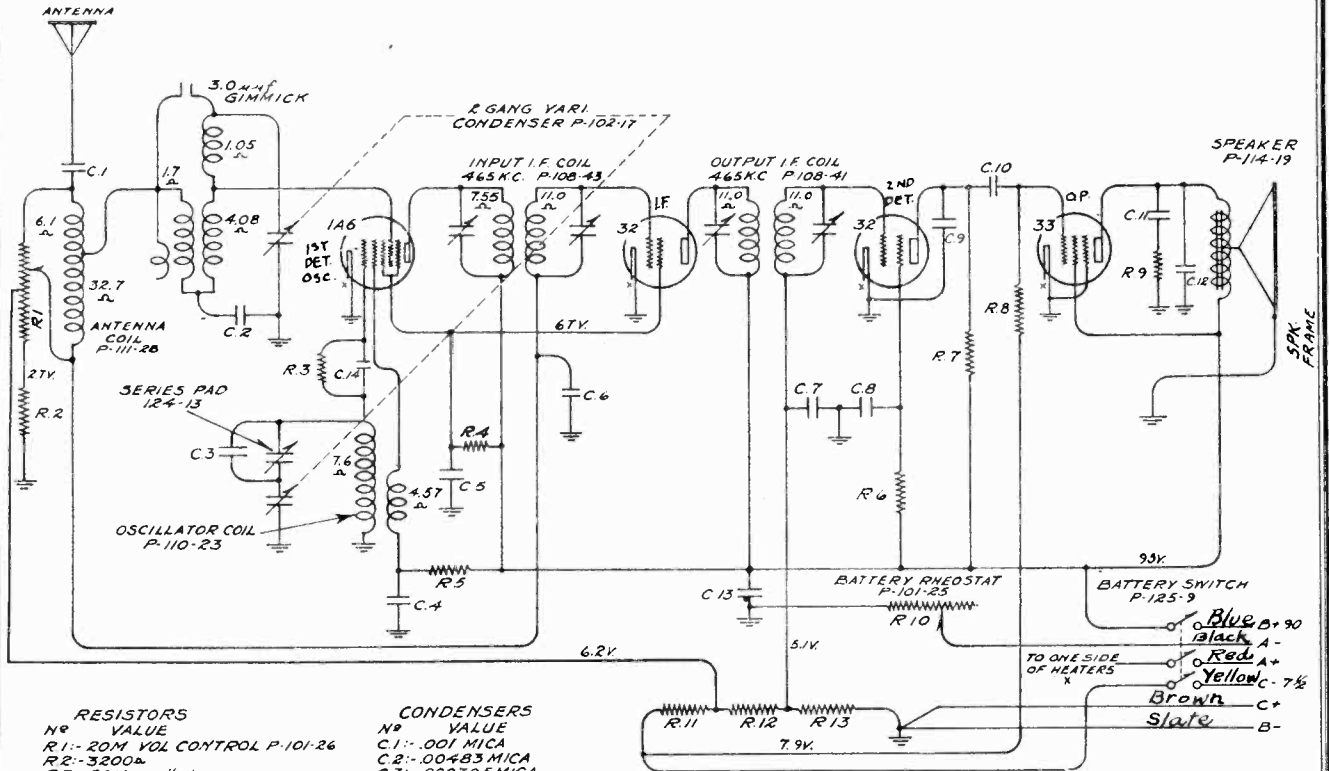
NOTES:

The pilot light used is a 2.5 volt, type T-41-G3½. It can be replaced without removing the chassis from the cabinet, by removing the clip which fastens the assembly to the gang condenser (see illustration).

Voltages from chassis ground to different points are indicated on the schematic circuit diagram and should be measured with a voltmeter having a resistance of 1000 ohms per volt.

BELMONT RADIO CORP.

MODEL 404
Schematic, Voltage
Socket, Trimmers

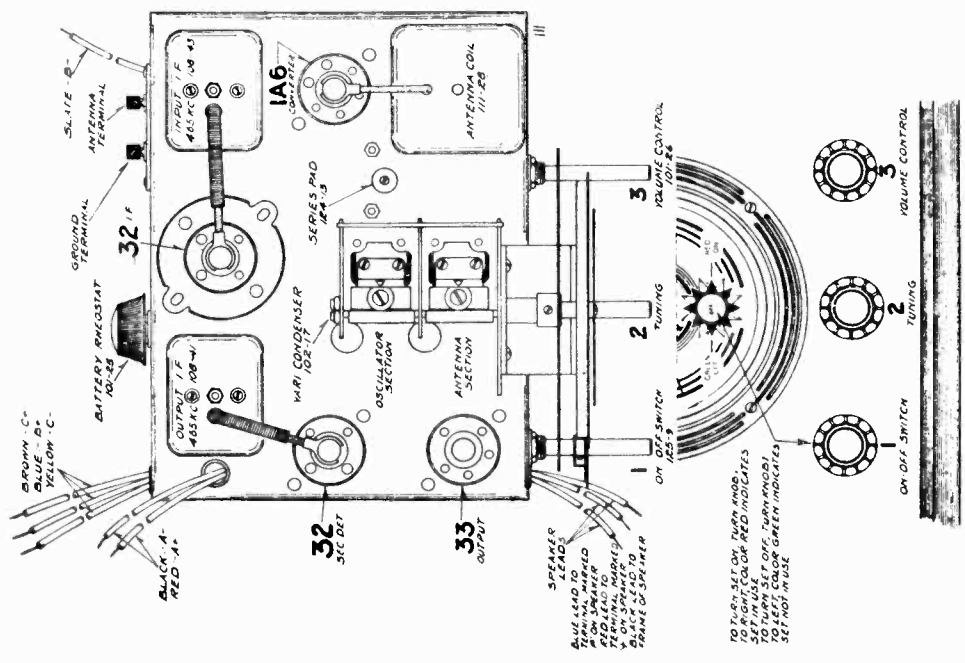


- RESISTORS**
- R.1 - 20M VOL CONTROL P.101-26
 - R.2 - 3200Ω
 - R.3 - 50MΩ 1/8W
 - R.4 - 11MΩ 1/8W
 - R.5 - 10MΩ 1/8W
 - R.6 - 3MEGΩ 1/8W
 - R.7 - 750MΩ 1/8W
 - R.8 - 500MΩ 1/8W
 - R.9 - 35MΩ 1/8W
 - R.10 - 4A BAT. RHEOSTAT P.101-25
 - R.11 - 1300Ω
 - R.12 - 1920Ω
 - R.13 - 9800Ω 1/8W

- CONDENSERS**
- C.1 - .001 MICA
 - C.2 - .00483 MICA
 - C.3 - .000395 MICA
 - C.4 - .01 X 200V
 - C.5 - .05 X 200V
 - C.6 - .25 X 200V
 - C.7 - .05 X 200V
 - C.8 - .01 X 200V
 - C.9 - .00025 MICA
 - C.10 - .01 X 400V
 - C.11 - .01 X 400V
 - C.12 - .0005 MICA
 - C.13 - .25 X 200V
 - C.14 - .00025 MICA

- NOTE -
R.2, R.11, R.12 ARE IN ONE UNIT P.106-21
C.4, C.5 ARE IN ONE UNIT P.118-11
C.6, C.13 " " " " P.118-5
C.7, C.8 " " " " P.118-11
NUMBERS PREFIXED BY LETTER 'P' ARE PART NOS
ALL VOLTAGES INDICATED ARE WITH NEW BATTERIES,
VOLUME CONTROL ON FULL

Serial No. 5D115200A and up



BATTERIES NEEDED

- The following batteries are needed.
- 2 45 volt "B" Batteries.
 - 1 7 1/2 Volt "C" Battery.
 - 1 3 Volt Dry "A" Battery or 2 Volt Storage Battery.

MODEL 404
Alignment, Parts
Battery Data

BELMONT RADIO CORP.

LIST OF REPAIR PARTS
Serial No. 5D115200A and up

Part No.	DESCRIPTION	No. Used In Set	MISCELLANEOUS	
CONDENSERS			101-25	Filament Rheostat—4 Ohms
Unless Otherwise Listed—			101-26	Volume Control
All Molded Mica Condensers			102-17	Two Gang Variable Condenser
Unless Otherwise Listed—			112-19	Drive Disc Assembly Complete
All Dual Section Tubular Paper			112-65	Bakelite Escutcheon with Glass
By-Pass Condensers			112-93	Dial Scale
100-5	1 Mfd. x 120 V.—Plus 50% Minus 10%	1	112-94	"On-Off" Indicator Complete with Hub and Ser
100-11	.01 x 400 V. ± or — 25%	2	112-95	Drive and Bracket Assembly Complete
120-27	.00483 Mica—Type MH ± or — 5%	1	113-34	Antenna and Ground Strip
RESISTORS			114-19	Six Inch Magnetic Speaker
106-21	Metal Clad Resistor	1	115-37	Tube Shield
All Carbon Resistors			124-13	Type J-2-S Series Pad with Insulating Washer
COILS			125-9	"On-Off" Switch
108-41	Output I.F. Coil Assembly Complete	1	131-2	Bakelite Knob
108-43	Input I.F. Coil Assembly Complete	1	131-12	Bakelite Knob with Arrow
110-23	Oscillator Coil Complete	1	136	Complete Set of Connecting Wires
111-28	Antenna Coil Assembly Complete	1		

SERVICE DATA

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.

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.

ALIGNING INSTRUCTIONS

CAUTION: No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as run down batteries, defective tubes, poor installations, open or grounded antenna systems, defective condensers and resistors. In order to properly align this chassis, an oscillator (generator) is necessary.

All adjustments should be made with a non-metallic screw driver.

BROADCAST BAND ALIGNMENT:

- Set external oscillator to 1720 K.C. and connect it in series with a 200 mmfd. 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 124-13 (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 800, 1000, 1200 K.C. DO NOT BEND PLATES.

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 1A6 tube (cap at top of tube), adjust I.F. transformers, parts number 108-41 and 108-43, 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 33 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.

PICTURE OF INSTRUCTIONS ATTACHED TO BACK OF CHASSIS

**— CAUTION —
READ CAREFULLY**

3 VOLT DRY "A" BATTERY OPERATION

The purpose of this knob is to reduce the 3 volt battery to the 2 volts required by the tubes.

If you use your radio about three hours each day turn the knob up one mark each week. However always keep the knob turned down as low as you can and still get proper reception. Whenever you install a new battery be sure to turn the control to the starting point marked new battery

NEVER TURN THE KNOB HIGHER THAN NECESSARY OR IT WILL BURN OUT THE TUBES AND RUN DOWN YOUR BATTERY

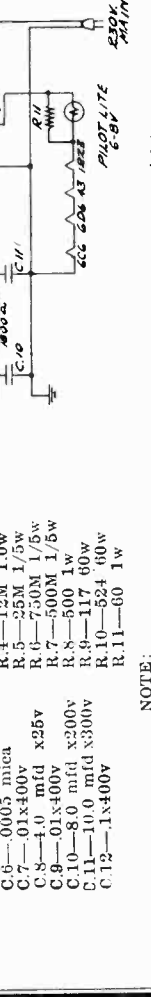
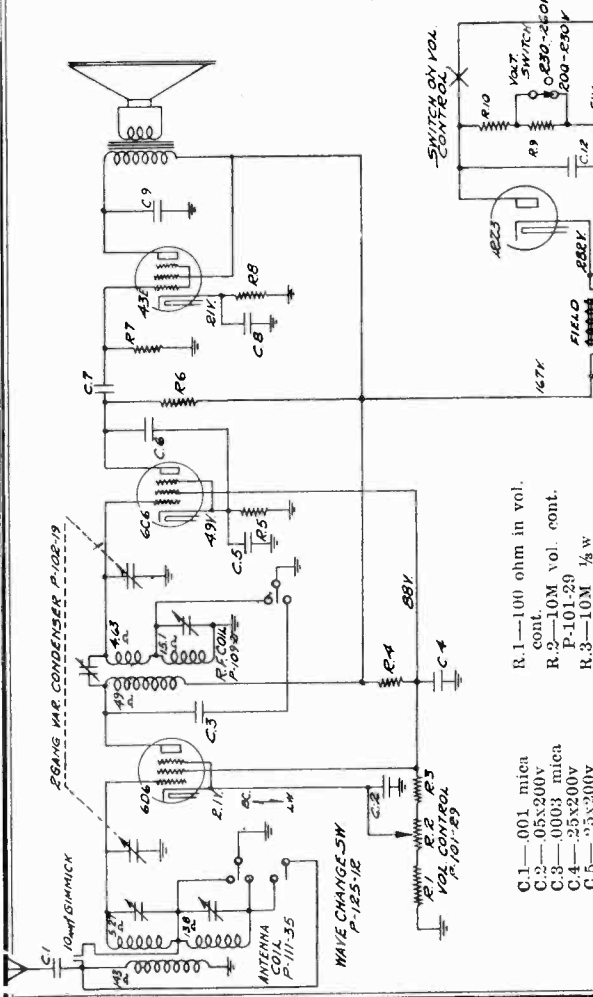
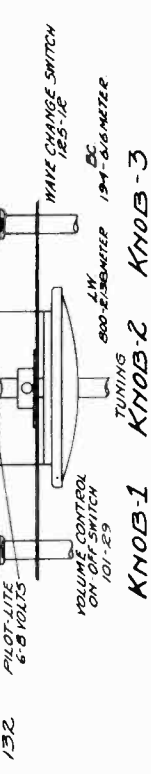
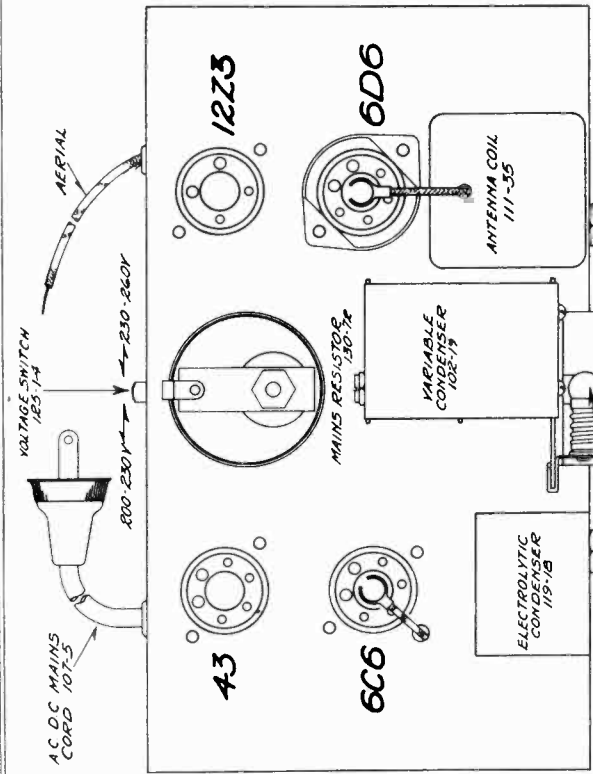
2 VOLT WET STORAGE BATTERY OPERATION

This radio may be operated with a 2 volt storage battery instead of the 3 volt Dry "A"

When this is done the knob at left should be turned to the point marked storage battery and left there at all times. Never attempt to use a 6 volt Auto or Radio storage battery.

BELMONT RADIO CORP.

MODEL 444
Schematic, Voltage
Socket, Chassis



114-23 Five Inch Dynamic SPEAKERS

MISCELLANEOUS

101-29	Volume Control and Switch		
102-19	Two Gang Variable Condenser		
107-5	Line Cord and Plug		
112-15	Glass Dial Crystal Only		
112-16	Dial Pointer		
112-19	Dial Drive Disc Complete		
112-60	Dial Bracket—Drive Complete		
112-61	Dial Scale		
112-66	Bakelite Escutcheon with Glass Complete		
115-37	Resistor Shield		
116-5	Pilot Light Bulb, T-50, 6-8 Volt	Tolerance	2 1/2 %
125-12	Wave Change Switch	Percent	5 %
135-14	Volume Control		
135-22	Bakelite Knob		
131-8	Springs for Bakelite Knob		
134-22	Felt Washer—(Under Knob)		
135-14	Dial Pointer Screw		

Color of Dot: White, Green, Blue, Yellow, Red, None

Tolerance Percent: 2 1/2 %, 5 %, 10 %, 15 %, 20 %, More than 20 %

All resistors and mica condensers are RMA color coded—specify value and/or resistor or condenser (per schematic diagram) and model number.

Mica condensers are coded with an additional dot indicating tolerance:

CONDENSERS

.1	x 400 Volt Tubular
.05	x 200 Volt Tubular
.01	x 400 Volt Tubular
.25	x .25 x 200 Volt Dual Tubular
10-8-4	Mica-Type MW-20%
.001	Mica-Type MT-20%
.0005	Mica-Type MT-20%
.0003	Mica-Type MT-10%

RESISTORS

500-60	Ohm—1 Watt—Candohm Resistor Strip
300	Ohm—1/2 Watt—Metal Clad Resistor
25M	Ohm—1/4 Watt—20%—9 Volts Carbon
130-1	Ohm—1/4 Watt—20%—100 Volts Carbon
130-3	Ohm—1/4 Watt—20%—50 Volts Carbon
130-17	Ohm—1/4 Watt—20%—50 Volts Carbon
130-37	750M Ohm—1/4 Watt—20%—100 Volts Carbon
130-40	Ohm—1 Watt—20%—100 Volts Carbon
130-72	641 Ohm Vitreous Resistor

REPAIR PARTS LIST—MODEL 444

Serial No. 5G130820A and up

RESISTORS

R.1	—100 ohm in vol. cont.
R.2	—10M vol. cont.
R.3	—10M 1/2 w
R.4	—12M 1.0 w
R.5	—25M 1/5 w
R.6	—750M 1/5 w
R.7	—500M 1/5 w
R.8	—500 1 w
R.9	—117 60w
R.10	—524 60w
R.11	—60 1 w

CONDENSERS

C.1	—001 mica
C.2	—05x200v
C.3	—0003 mica
C.4	—25x200v
C.5	—25x300v
C.6	—0003 mica
C.7	—01x400v
C.8	—4.0 mfd x25v
C.9	—01x400v
C.10	—8.0 mfd x200v
C.11	—10.0 mfd x300v
C.12	—1x400v

NOTE:

C.4 and C.5 in one unit—P.118-5
 C.8, C.10, C.11 in one unit—P.119-18
 R.9 and R.10 in one unit—P.130-72
 R.8, R.11 in one unit—P.106-22

Capacitors taken from points indicated to chassis ground.
 Vol. control on full. Line voltage switch at 230-260 v. position.
 Numbers prefixed by letter "P" are part nos.
 Serial No. 5G130820A and up.

MODEL 444
Alignment
Notes

BELMONT FOUR TUBE TWO-BAND RECEIVER

Model 444

Tuning Range

194— 616 Meters

800—2136 Meters

TUBE COMPLEMENT:

- 1 6D6—Super control R.F. pentode as R.F. Amplifier.
- 1 6C6—R.F. pentode as second detector.
- 1 43E—Special pentode output amplifier.
- 1 12Z3—Rectifier.

POWER INPUT:

This receiver is designed for A.C. (any frequency) and D.C. operation over a range of 200-260 V. A line voltage switch is provided for operation from 200 to 230 and from 230 to 260 volts. The switch is mounted on the back flange of the chassis and the proper position is indicated by stamping the chassis with the voltage ranges. Chassis are sent from the factory in the high voltage position. In order to change the switch position, it is necessary to remove the back of the cabinet.

In case it is desired to use the receiver on 110 V. A.C. it is necessary to use a 110 to 220 volt transformer, having a power capacity of approximately 80 watts.

ALIGNMENT

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 chassis, pull knobs off, remove the three bolts by which chassis is fastened and the speaker plug which you will find on the rear flange of the chassis panel.

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 43E 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 voltmeter should be used.

DUMMY ANTENNAS:

Dummy (1)—Consists of .1 mfd. condenser in series with the ungrounded lead of the external oscillator.

Dummy (2)—Consists of 100 mmf. condenser in series with the ungrounded lead of the external oscillator.

TEST FREQUENCIES:

	Meters	Kilocycles
Long Wave Band	2000	150
	1200	250
	857.1	350
	800	375
Broadcast Band	500	600
	300	1000
	214.3	1400
	193.4	1550

ALIGNMENT BROADCAST BAND:

1. Turn wave band switch to broadcast position (clockwise rotation).
2. Connect external oscillator to antenna lead through dummy (2) and set to 193.4 M.
3. Open condenser plates all the way (completely out of mesh) and align all broadcast trimmers:
 - (a) Lower hole in B.C. antenna coil shield (111-35). See top view.
 - (b) Trimmer on R.F. coil nearest end of chassis.
4. Set external oscillator to 214.3 meters. Tune in signal with receiver and realign broadcast antenna coil (3a) while rocking gang condenser to and fro until maximum output is obtained.
5. Check sensitivity and tracking at 300 and 500 meters.

ALIGNMENT LONG WAVE BAND:

1. Turn switch to long wave position (counter-clockwise).
2. Clip external oscillator on R.F. grid through dummy (1) and set at 800 meters.
3. With plates of variable condenser completely out of mesh, adjust long wave R.F. trimmer for maximum output:
 - (a) Trimmer on R.F. coil (No. 109-21) toward center of chassis.
4. Clip external oscillator on to antenna lead through dummy (1) and set at 857.1 meters.
5. Tune receiver to signal and adjust long wave antenna trimmer for maximum output:
 - (a) Upper hole in antenna coil (No. 111-35) can.
6. Check tracking and sensitivity at 1200 and 2000 meters.

SERVICE NOTES

To check for open by-pass condensers, shunt each condenser with another of similar capacity and of the same voltage rating, which is known to be good, until the defective unit is located. Open by-pass condensers frequently cause oscillation and distorted tone. Defective and shorted electrolytic filter condensers cause excessive hum, motor-boating, low volume and a reduction in all D.C. voltages. Open or shorted electrolytic and by-pass condensers (across bias resistor of type 43E tube) will cause low volume and distorted tone.

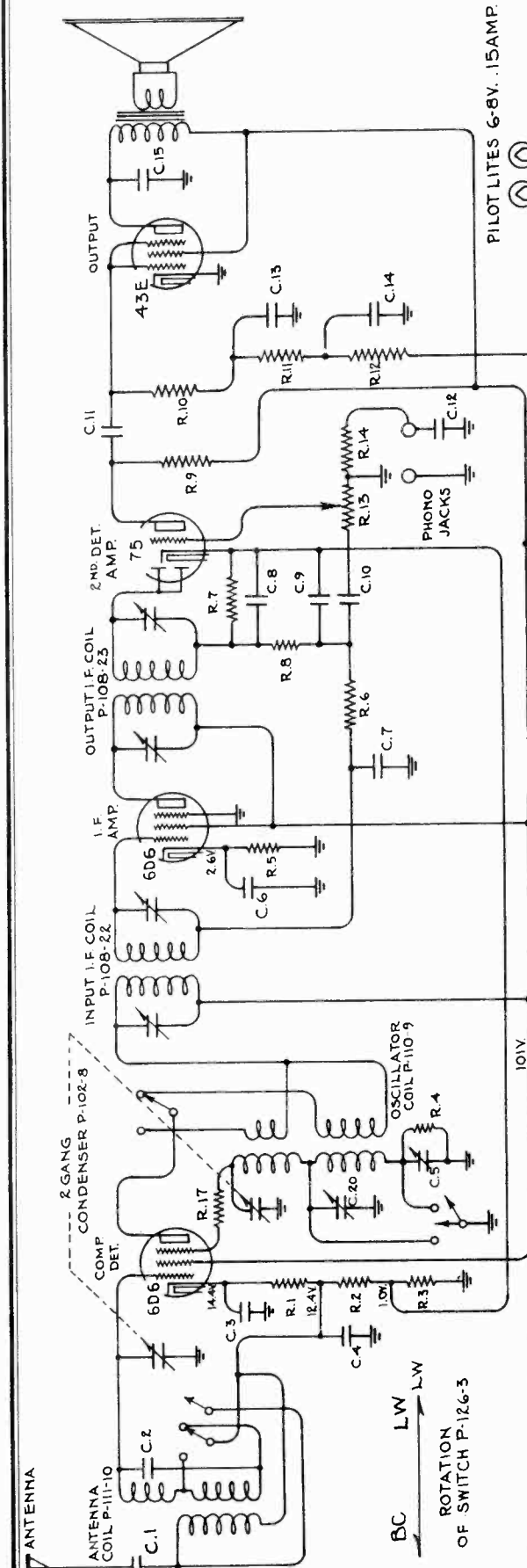
Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a voltmeter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on the circuit diagram.

All voltages are measured with 230 volt mains and the switch in the 230-260 volt position.

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

BELMONT RADIO CORP.

MODEL 541
Schematic, Voltage
Socket, Trimmers



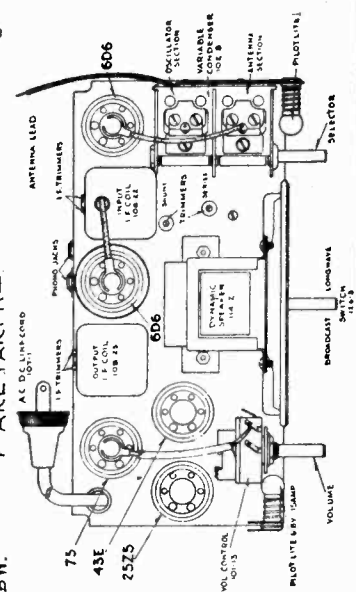
NOTE:-
C.3 & 4 IN DUAL UNIT P-118-7
C.6, 7, 12, 13, 14, & 15 IN ONE UNIT P-145-6
C.16, 17, & 18 IN ONE UNIT P-119-7
R.1, 2, & 3 IN ONE UNIT P-106-15
R.15, IN LINECORD P-107-1
R.6, 7, & 8, C.8, 9, & 10 IN OUTPUT I.F. CAN P-108-23.
R.13, & 14 ONE UNIT, VOL. CONTROL P-101-13
C.5, & 20 DUAL PADDER P-124-9
NUMBERS PREFIXED BY LETTER 'P' ARE PART NOS

RESISTORS

NO	VALUE
R.1-	300Ω
R.2-	2MΩ 1/5W.
R.3-	180Ω 1/5W.
R.4-	250MΩ 1/5W.
R.5-	250Ω 1/5W.
R.6-	250MΩ 1/5W.
R.7-	250MΩ 1/5W.
R.8-	50MΩ 1/5W.
R.9-	100MΩ 1/5W.
R.10-	301MΩ 1/5W.
R.11-	28MΩ
R.12-	101MΩ
R.13-	500MΩ
R.14-	126Ω
R.15-	40Ω
R.16-	900Ω
R.17-	

CONDENSERS

NO	VALUE
C.1-	.001 MICA
C.2-	6μμf GIMMICK
C.3-	.05X200V.
C.4-	.05X200V.
C.5-	3PL SECTION
C.6-	.05X200V.
C.7-	.1X200V.
C.8-	.0005 MICA
C.9-	.0005 MICA
C.10-	.01X600V.
C.11-	.01X600V.
C.12-	.003X600V.
C.13-	.05X200V.
C.14-	.1X200V.
C.15-	.006X600V.
C.16-	8.0MFD X100V.
C.17-	12.0MFD X100V.
C.18-	4.0MFD X100V.
C.19-	.1X400V.
C.20-	2PL SECTION



VOLTAGES TAKEN FROM POINTS INDICATED TO CHASSIS GROUND
VOLUME CONTROL ON FULL A GIMMICK IS AN IMPROVED CAPACITY FORMED BY TWISTING WIRES.

MODEL 541
Alignment
Parts, Notes

BELMONT RADIO CORP.

- (b) Re-set external oscillator to 150 kilocycles. Pick up oscillator signal by rotating variable condenser and adjusting the long wave series padder, adjustable from top of chassis, adjustment located between speaker and variable condenser. Front hole marked "series" on top view. When making this adjustment, the receiver must be held to the oscillator frequency by rocking the variable condenser as the padder is adjusted until maximum output is obtained.
- (c) After adjusting long wave series padder, as explained in "B", recheck adjustment of shunt padder, as explained in "A". DO NOT BEND PLATES.

NOTES:

The pilot lights are connected in series. Should one burn out, the other will not light. To replace them it is necessary to remove chassis from cabinet. The lamps used are 6-8 volts, .15 ampere.

Volts from chassis to different points are indicated on the schematic circuit diagram and should be measured with a volt meter having a resistance of 1000 ohms per volt.

To convert kilocycles to meters, divide 300,000 by the frequency in kilocycles.

PARTS LIST
MODEL 541

When ordering parts, always specify part and model number as well as serial number of chassis.

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
101-13	Phono-Radio Volume Control	112-52	Selector Scale (541)
102-3	Two Gang Variable Condenser	112-53	Volume Scale (541)
105-7	Choke - 600 Ohms	115-22	No. 01360 Tube Shield
105-1	40 Ohm Metal Grid Resistor	115-23	Tube Shield Base
106-15	2450 Ohm Metal Grid Resistor	116-5	6-8 Volt Pilot Light
107-1	Cord & Plug (126 Ohms)	119-7	12-0-5 Mfd. Electrolytic Cond.
108-22	Input I.F. Transformer	124-9	Dual Padder (2 Plate Plus 3 Plates)
108-23	Output I.F. Transformer	126-3	Wave Change Switch
110-9	Oscillator Coil	131-1	Small Knob (Iron & L.W. Switch)
111-10	Antenna Coil	131-6	Knob (Volume & Selector)
112-11	Pilot Light Bracket	145-6	.209 Mfd. By-Pass Cond. Block
		171-1	Phono-Jack

All resistors are RMA coded - specify value and/or resistor number (per schematic diagram) and model number. When ordering condensers, specify part number, model number and/or capacitor (per schematic diagram) and model number.

MODEL 541

SERVICE MANUAL FIVE TUBE TWO BAND SUPERHETERODYNE WITH A.V.C.

105-125 Volts Alternating (any cycles) or Direct Current - 40 Watts
FOR VOLTAGES IN EXCESS OF 125 AND UP TO 270 VOLTS AN EXTERNAL RESISTOR MUST BE USED SUCH AS AN ADDITIONAL LENGTH OF SPECIAL RESISTANCE CORD.

200-590 Meters - 1000-2000 Meters

The tube complement of this chassis is as follows:

- 1 Type 6B6 - remote out-of pentode as oscillator and first detector
- 1 Type 6B6 - remote out-of pentode as intermediate frequency amplifier (156 k.c.)
- 1 Type 75 - duplex diode triode as a diode detector AVC and first AF amplifier
- 1 Type 43E - pentode output A.F. amplifier
- 1 Type 25Z5 - high vacuum rectifier.

SERVICE NOTES

Should it ever become necessary or desirable to re-align this receiver the proper procedure is as follows:

Before attempting any adjustments, the set must be disconnected from the power supply and the chassis removed from the cabinet. To remove the chassis, pull off the volume, selector and wave changing switch knobs, remove the back and four screws that fasten the chassis to the cabinet. Insert plug in receptacle and proceed as follows:

I.F. ALIGNMENT:

1. With volume control on full, at the extreme right of its rotation, and with variable condenser at its minimum capacity position (extreme right of its rotation) make the following adjustments:
 - (a) Connect an external oscillator adjusted to 150 kilocycles, in series with a .1 mfd. condenser, to the control grid (top of the 6B6 tube), located directly in back of the variable condenser.
 - (b) Adjust variable condensers of both input (108-22) and output (108-23) I.F. transformers (see top view of chassis) to give a resonance indicator and output meter connected across the primary of the peak input transformer. Use a resonance indicator and output meter connected across the 43E tube, by means of an adapter. Maximum deflection on the meter indicates resonance.

Note: There are two trimmer adjustments on each I.F. transformer, they are accessible from the back of the chassis.

BROADCAST ALIGNMENT:
(200-590 Meters)

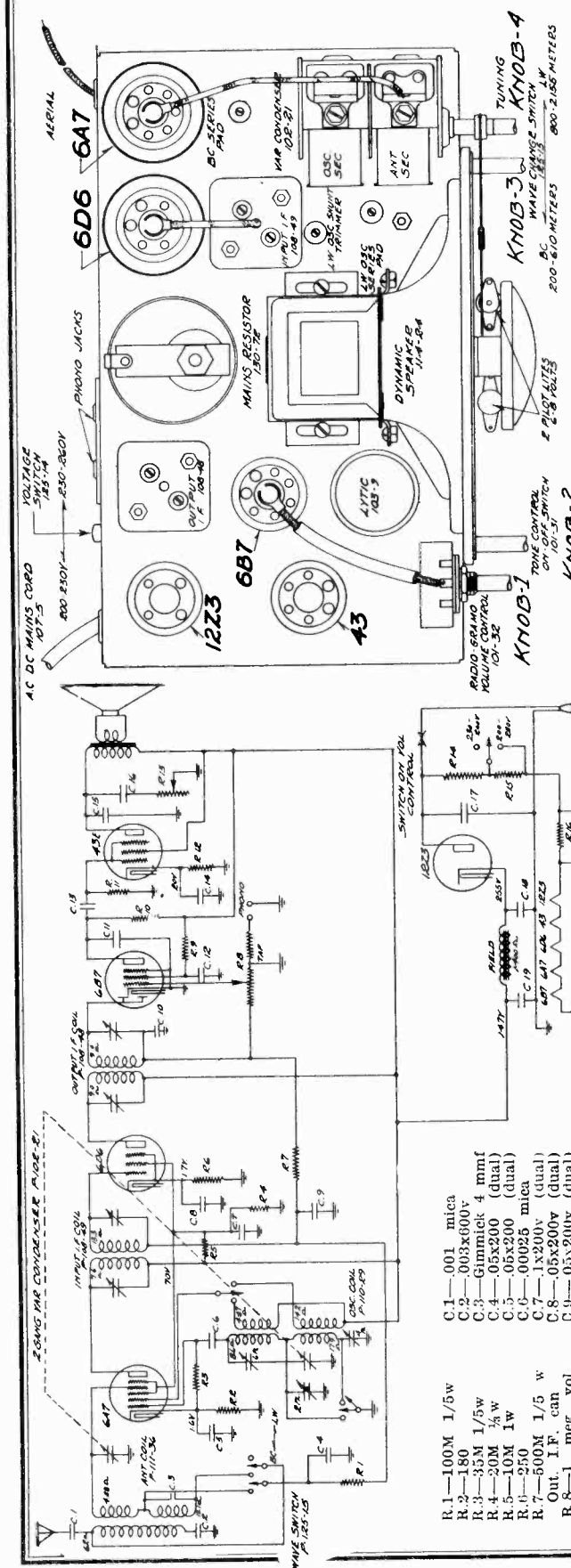
1. The broadcast band is aligned first. Rotate wave changing switch to the extreme left of its rotation. (Switch located directly under dynamic speaker).
- (a) Attach an external oscillator set at 1550 kilocycles, to the grid of the 6B6 tube, located in back of the variable condenser, with variable condenser at its minimum capacity position, extreme left of its rotation, plates entirely out of mesh, adjust the trimmer of the oscillator (rear section of the variable condenser) to resonance.
- (b) Re-set external oscillator to 1400 kilocycles. Change connection of oscillator output lead from tap of 6B6 to tan antenna wire. Rotate variable condenser until signal is picked up, then adjust antenna trimmer (front shaft section of variable condenser) to resonance.
- (c) Check output at 1200-1000-800-600 kilocycles. Bend plates of antenna section, front shaft of variable condenser, if required (do not bend plates of oscillator, rear, section of variable condenser).

LONG WAVE ALIGNMENT:
(1000-2000 Meters)

1. Rotate wave changing switch to the extreme right of its rotation.
 - (a) With external oscillator set at 350 kilocycles and connected to the tan antenna lead, rotate variable condenser until signal is picked up, then adjust long wave shunt padder. This adjustment is accessible from the top of the chassis, between the variable condenser and the speaker and is the rear hole marked "shunt" on the top view of the chassis. When making this adjustment, care must be taken to hold the receiver to the frequency of the external oscillator by rocking variable condenser as the padder is adjusted, until maximum output is obtained.

BELMONT RADIO CORP.

MODELS 544, 545
Schematic, Voltage
Socket, Trimmers
Parts List



NOTE:—Above diagram of Model 544-545 exactly the same except speaker is mounted in cabinet and dial is mounted on bracket secured to chassis.

SPEAKERS

- 114-24 Six Inch Dynamic (FOR MODEL 544 ONLY) — Plug and Bracket
- 114-25 Six Inch Dynamic (FOR MODEL 545 ONLY) — Leads—Less Bracket

COILS

- Output I.F. Transformer Complete with Can
- Input I.F. Transformer Complete with Can
- Oscillator Coil Assembly Complete
- Antenna Coil Complete

RESISTORS

Part No.	Description	Part No.	Description
106-23	Carbon Resistor Strip	115-37	Resistor Shield
106-24	300 Ohm—2 Watt—Metal Clad Resistor	116-5	Pilot Light Bulb, 6-8 Volt, T-50
130-3	500M Ohm— $\frac{1}{2}$ Watt—20%—100 Volt Carbon	124-14	J-6-S Single Padder
130-19	1Meg Ohm— $\frac{1}{2}$ Watt—20%—100 Volt Carbon	124-20	J-4-2D Dual Padder
130-20	100M Ohm— $\frac{1}{2}$ Watt—20%—50 Volt Carbon	125-14	Voltage Switch
130-21	20M Ohm— $\frac{1}{2}$ Watt—20%—20 Volt Carbon	125-15	Band Switch
130-45	250M Ohm— $\frac{1}{2}$ Watt—20%—50 Volt Carbon	131-2	Bakelite Knob
130-57	35M Ohm— $\frac{1}{2}$ Watt—20%—50 Volt Carbon	131-8	Springs for Bakelite Knob
130-72	641 Ohm—Vitreous Enamel Resistor	134-22	Felt Washer (Under Knob)
130-77	10M Ohm—1 Watt—20%—100 Volt Carbon	171-3	Phono-jack Assembly
130-78	500 Ohm—1 Watt—20%—25 Volt Wire Wound		

REPAIR PARTS LIST—MODEL 544-545

Serial No. 5G132551A and up

Part No.	Description
100-1	1 x 400 Volt Tubular
100-11	.01 x 400 Volt Tubular
100-12	.003 x 600 Volt Tubular
100-28	.016 x 400 Volt—.05 x 400 Volt Dual Tubular
103-9	10 x 8 x \pm Electrolytic
118-1	.1 x 200 Volt Dual Tubular
118-7	.05 x .05 x 200 Volt Dual Tubular
129-1	.001 Mica—Type MT—20%
129-5	.0001 Mica—Type MT—20%
129-12	.00025 Mica—Type MT—20%

NOTE:

- C.4 and C.5 in one unit—P-118-7
- C.8 and C.9 in one unit—P-118-7
- C.14, C.18 and C.19 in one unit—P-103-9
- R.2, R.6 and R.10 in one unit—P-106-23
- R.14 and R.15 in one unit—P-130-72
- C.7 and C.12 in one unit—P-118-1

Serial No. 5G132551A and up.

NOTE:—Buffer Resistor (106-24) of 300 Ohms added in series with cathode of 12Z3 not shown on diagram.

REPAIR PARTS LIST—MODEL 544-545

Serial No. 5G132551A and up

Part No.	Description
R.1—100M	1/5w
R.2—180	
R.3—35M	1/5w
R.4—20M	$\frac{1}{2}$ w
R.5—10M	1w
R.6—250	
R.7—500M	1/5 w
R.8—1	meg vol.
R.9—1	cont. P-101-32
R.10—250M	1/5 w
R.11—500M	1/5w
R.12—500	1w
R.13—50M	tone
R.14—524	cont. P-101-31
R.15—117	
R.16—60	

Volages taken from points indicated to chassis ground.

Volume control on. full.

Numbers prefixed by letter "P" are part nos.

MODEL 544, 545
Alignment, Notes

adapter between the plate and screen terminals of the type 43E 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.

NOTE: All trimmer adjustments are made from the top of chassis.

BELMONT Model 544 and 545
FIVE TUBE TWO BAND SUPERHETERODYNE
With A. V. C., 200-260 Volts Alternating (any frequency) or Direct Current
200-610 Meters—800-2155 Meters

DESCRIPTION

The tube complement of this chassis is as follows:

- 1—Type 6A7—Remote cut-off pentagrid converter as oscillator and first detector.
- 1—Type 6D6—Remote cut-off pentode as intermediate frequency amplifier (465 k.c.)
- 1—Type 6B7—Duplex diode pentode as a diode detector AVC and first A.F. amplifier.
- 1—Type 43E—Pentode output A.F. amplifier.
- 1—Type 12Z5—High vacuum rectifier.

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 voltmeter 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 EFFECTING ACCURACY OF VOLTAGE MEASUREMENTS, AERIAL AND GROUND LEADS SHOULD BE SHORT CIRCUITED WHILE MAKING MEASUREMENTS.

All voltages should be measured with the switch in the high voltage position with 250 volts, A.C. or D.C. on the line. In case it is impossible to secure the exact mains voltage, suitable allowances should be made.

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.

Excessive hum, sputtering, 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.

Dial Replacement:

To replace broken or frayed drive cord, turn set off (on model 545 only, pull out speaker plug), remove four chassis mounting bolts, four knobs and withdraw chassis from cabinet. Take off drive

bracket assembly by removing two nuts and bolts, which hold Dummy (2)—consists of a 200 mmfd. condenser and a 20 ohm resistor in series with each other and in series with the external oscillator.

Remove old cord by taking out the set screws that hold it in place, salvaging the spring. Put both set screws back in place as they were, knotting a new piece of fine line 10-inches long around the set screw on the dial drive, about 3 inches from one end. Fasten drive assembly to chassis with nuts and bolts.

With the heads of the set screws pointing opposite each other, namely, east and west, pull cord tightly and knot it around the set screw on condenser shaft. The one side of the spring to a loose end of the cord, threading the other end of cord through opposite side of spring. Pull tightly and tie in place while spring is in tension. Cut off hanging ends of cord (on model 545 only, plug in speaker), put chassis back in cabinet and fasten in place.

ALIGNING INSTRUCTIONS

Should it ever become necessary or desirable to re-align this receiver, the proper procedure is as follows:

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.

Before attempting any adjustments, the set must be disconnected from the power supply and the chassis removed from the cabinet. To remove the chassis, pull off the volume, selector, tone control and wave changing switch knobs, remove the back, and the four screws that fasten the chassis to the cabinet. Insert plug in receptacle and proceed as instructed.

In the case of the Model 544, the speaker is an integral part of the chassis and will be removed with the chassis. In the case of the Model 545, however, the speaker is fastened to the cabinet and connected to the chassis by a plug. It is generally not necessary to remove the speaker from the cabinet, as the cabinet can be tilted in such a manner as to permit alignment with speaker in cabinet adjacent to chassis.

Resonance Indicator:

Use as a resonance indicator an output meter connected across the primary of the speaker input transformer, or by means of an

6. Tune in oscillator signal by adjusting broadcast oscillator series pad (this adjustment accessible from the top of chassis, it is located directly behind variable condenser—see top view).

7. Re-set dial and external oscillator to 200 meters and re-adjust trimmer of rear section of variable condenser as in "9".

8. Re-set external oscillator to 214.5 meters (400 K. C.) and tune in signal by rotating condenser (moving pointer).

9. Adjust broadcast antenna trimmer to resonance (this adjustment located on top of front section of variable condenser).

10. Re-set external oscillator to 545 meters, tune in oscillator signal by rotating variable condenser (moving pointer) and then slowly rocking condenser to and fro, adjust broadcast oscillator series pad to resonance (maximum deflection on output of meter).

TEST FREQUENCIES:

Long Wave	Meters	Kilocycles
	2000	150
	857	350
	800	375
I.F.	645.1	465
Broadcast	545	550
	214.3	1400
	200	1500

I. F. ALIGNMENT:

645.1 Meters (465 Kilocycles)

1. Connect external oscillator adjusted to 645.1 meters in series with "Dummy 1" to the grid of type 6A7 tube (cap at top of tube).
2. Open variable condenser until dial pointer reads 200 meters.
3. Set wave changing switch in broadcast position, extreme left of its rotation (see top view for location of switch).
4. Adjust input (part 108-49) and output (part 108-48) I. F. transformer trimmers to resonance (maximum deflection on output meter). NOTE: There are two (2) adjustments on each transformer, they are accessible from the top of the shield can.
5. Remove oscillator clip from 6A7 tube.

BROADCAST BAND ALIGNMENT:

1. With wave changing switch still in broadcast position (left rotation) and with variable condenser in its minimum capacity position (plates entirely out of mesh), set dial at 200 meters.
2. Connect external oscillator set at 200 meters in series with "Dummy 2" to the tan antenna lead.
3. Adjust broadcast oscillator trimmer to resonance (this is adjustment on top of variable condenser rear section).
4. Re-set variable condenser until dial pointer reads exactly 545 meters.
5. Re-set external oscillator to exactly 545 meters.

LONG WAVE BAND ALIGNMENT:

1. Set wave changing switch in long wave position (extreme right of its rotation).
2. Connect external oscillator set at 800 meters in series with "Dummy 1" to the grid of type 6A7 tube (cap at top of tube).
3. Set variable condenser in its minimum capacity position (plates entirely out of mesh), dial pointer reading 800 meters.

4. Tune in external oscillator signal by adjusting long wave oscillator shunt trimmer (this adjustment is accessible from top of chassis and is located to the left of variable condenser rear hole—see top view).

5. Re-set external oscillator and move dial pointer to exactly 2000 meters.

6. Tune in external oscillator signal by adjusting long wave oscillator series pad (this adjustment is accessible from top of chassis, located to the left of variable condenser front hole).

7. Re-set external oscillator and move dial pointer to 800 meters and re-check adjustment "4".

IMPORTANT: It is necessary to make the following adjustments when installing a new replacement antenna coil:

1. Connect external oscillator set at 857 meters in series with "Dummy 2" to tan antenna lead and adjust gimnick condenser (by unwinding) on antenna coil (gimnick is capacity formed by winding fine wire over a larger wire) for maximum deflection on output meter. While making this adjustment on the gimnick, rock variable condenser to and fro to make certain that set is still in tune with external oscillator.

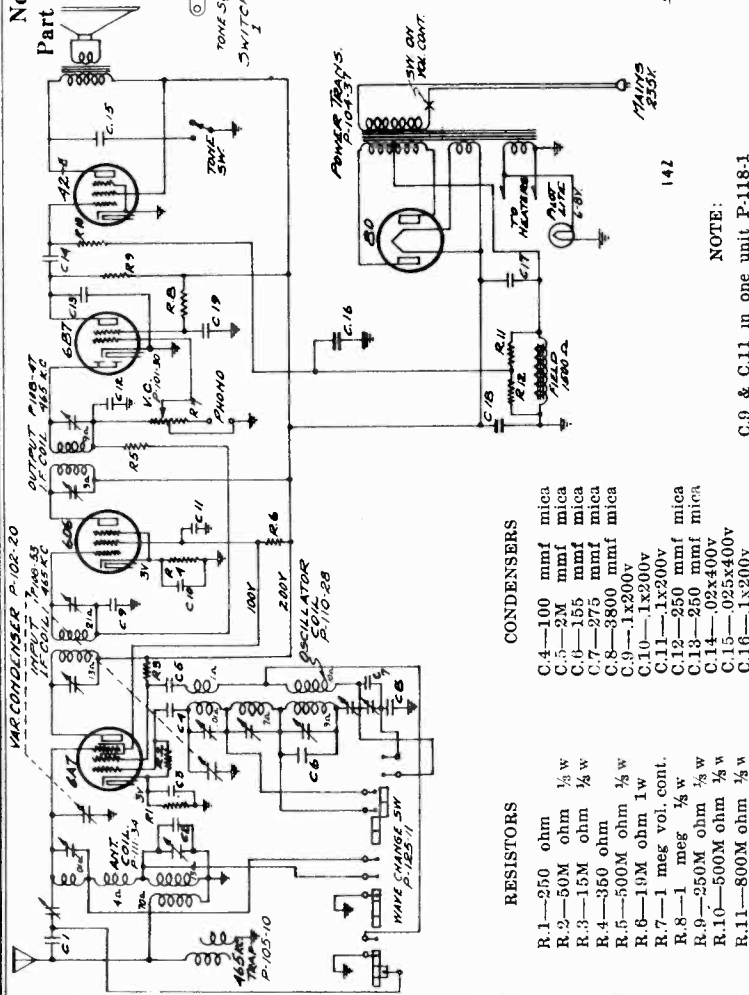
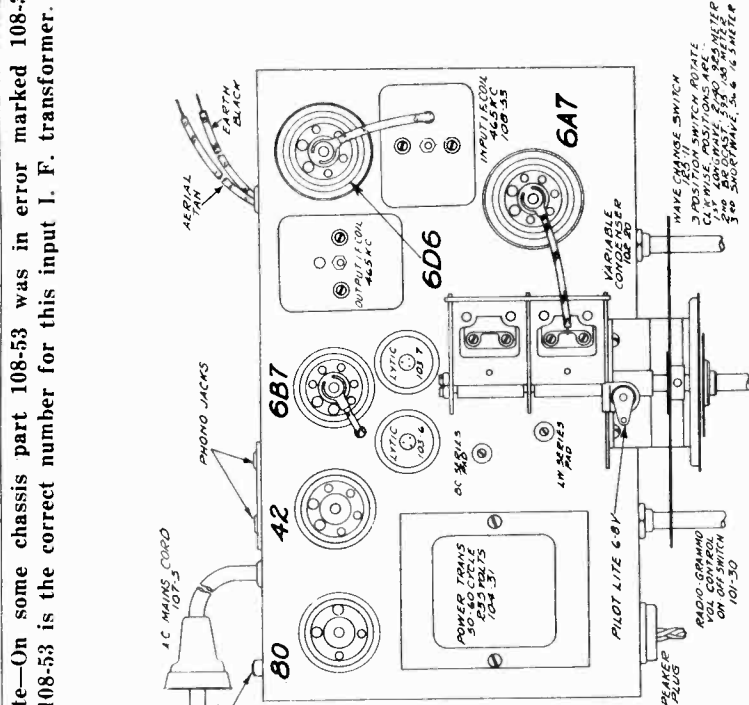
Re-set external oscillator to 2000 meters, tune in signal by rotating variable condenser and adjust long wave series pad as in "6" until maximum output is obtained.

Socket, Trimmers
Parts List

BELMONT RADIO CORP.

MODEL 555
Schematic, Voltage

Note—On some chassis part 108-53 was in error marked 108-38. Part 108-53 is the correct number for this input I. F. transformer.



NOTE:
C.9 & C.11 in one unit P-1118-1
C.10 & C.19 in one unit P-118-1
Voltages taken from points indicated to chassis ground
Vol. control on full.
Numbers prefixed by letter "P" are part Nos.

Part No.	DESCRIPTION
104-31	50/60 Cycle—235 Volt Primary
104-37	40 Cycle—235 Volt Primary
104-38	25 Cycle—235 Volt Primary
104-39	Universal—40 Cycle Primary
104-40	Universal—25 Cycle Primary
154	SPEAKER PLUG
KNOB 1	TUNING
KNOB 2	VARIABLE CONDENSER
KNOB 3	WAVE CHANGE SWITCH
42	6B7
80	80
606	6A7
606	6D6
142	142

Part No.	DESCRIPTION
101-30	Volume Control and Switch
102-20	Two Gang Variable Condenser
107-5	Line Cord & Plug
112-15	Glass Disc Crystal Only
112-19	Dial Drive Disc Complete
112-19	Dial Pointer
112-26	Planetary Drive Complete
112-40	Pilot Light Bracket
112-62	Drive Bracket Assembly Complete with Ring
112-66	Bakelite Escutcheon with Glass Complete

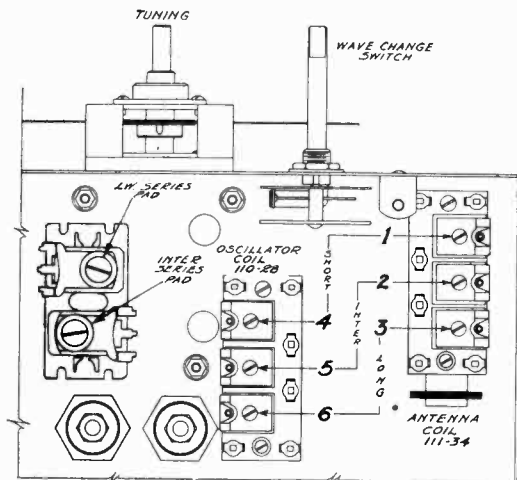
Part No.	DESCRIPTION
130-3	500M Ohm—1/2 Watt—50 Volt—20% Carbon
130-8	201M Ohm—1/2 Watt—50 Volt—10% Carbon
130-11	250M Ohm—1/2 Watt—50 Volt—20% Carbon
130-19	1Meg Ohm—1/2 Watt—50 Volt—20% Carbon
130-32	250 Ohm—1/2 Watt—10 Volt—20% Wire Wound
130-34	19M Ohm—1 Watt—100 Volt—20% Carbon
130-46	800M Ohm—1/2 Watt—50 Volt—10% Carbon
130-52	50M Ohm—1/2 Watt—50 Volt—20% Carbon
130-73	15M Ohm—1/2 Watt—50 Volt—20% Carbon
130-74	350 Ohm—1/2 Watt—10 Volt—20% Wire Wound
105-10	Wave Trap Coil Complete
108-47	Output I.F. Transformer Complete with Can
108-53	Input I.F. Transformer Complete with Can
110-28	Oscillator Coil Complete
111-34	Antenna Coil Complete

REPAIR PARTS LIST—MODEL 555
Serial No. 5G131400A and up
RESISTORS

Part No.	DESCRIPTION
100-19	.006 x 600 Volt Tubular
100-20	.1 x 200 Volt Tubular
100-26	.02 x 400 Volt Tubular
100-27	.025 x 400 Volt Tubular
103-6	8 Mfd. x 350 Volt Electrolytic
103-7	8 Mfd. x 300 Volt Electrolytic
118-1	.1 . 1 x 200 Volt Dual Tubular
129-3	.00002 Mica—Type MT—20%
129-5	.0001 Mica—Type MT—20%
129-6	.002 Mica—Type MW—20%
129-12	.00025 Mica—Type MT—20%
129-29	.0038 Mica—Type MW—2 1/2%
129-33	.000275 Mica—Type MT—5%
129-35	.000035 Mica—Type MT—10%
129-40	.000155 Mica—Type MT—5%

MODEL 555
Trimmers
Alignment, Notes

BELMONT RADIO CORP.



ALIGNING I. F. TRANSFORMERS:

1. With volume control full on, the extreme right of its rotation, and with wave changing switch in the broadcast position, center of its rotation, and with variable condenser at its minimum capacity position, plates entirely out of mesh, adjust the I.F. transformers (two adjustments at the top of parts number 108-47 and 108-53—see top view).
 - (a) Connect external oscillator which has been adjusted to 645.1 meters in series with I.F. dummy antenna, to the control grid cap of the type 6D6 tube and chassis ground. Adjust output I.F. transformer, part number 108-47, to resonance.
 - (b) Move generator output clip from grid of 6D6 to grid cap of 6A7 tube and align input I.F. transformer, part number 108-53.
 - (c) With generator connected to grid of type 6A7 tube, re-adjust output I.F. transformer, part number 108-47, to resonance.

BROADCAST BAND ALIGNMENT:

(188-595 meters)

1. With wave changing switch in the broadcast position, center of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator in series with broadcast dummy antenna to tan antenna and black ground leads and make the following adjustments:
 - (a) With external oscillator set at 187.5 meters, adjust oscillator trimmer to resonance, for location of this adjustment, number 5, see diagram.
 - (b) Re-set external oscillator to 214.3 meters, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance. For location of this adjustment, number 2, see diagram.
 - (c) Re-set external oscillator to 500 meters and adjust series pad to resonance, rotate condenser and move dial pointer to 500 meters by gently rocking condenser to and fro. Pick up oscillator signal while adjusting series pad to resonance, maximum deflection on an output meter. This adjustment is accessible from the top of the chassis and is located between variable condenser and power transformer, rear hole see top view—part number 124-19.
 - (d) Check for tracking and sensitivity at 300 meters.

SHORT WAVE BAND ALIGNMENT:

(16.5-56.6 meters)

1. Set wave changing switch to short wave position, extreme right of its rotation, set dial pointer to 16.7 meters.
 - (a) With external oscillator adjusted to 16.7 meters and connected in series with short wave dummy antenna to tan antenna and black ground leads, adjust the oscillator short wave trimmer until generator signal is picked up. For location of this adjustment, number 4, see diagram.
 - (b) Adjust short wave antenna trimmer to resonance. For location of this adjustment, number 1, see diagram.
 - (c) Re-set external oscillator to 50 meters, rotate condenser, move dial pointer to 50 meters, and check for tracking and sensitivity. Do not bend plates. **Note: It is extremely necessary in making all of the above adjustments that the fundamental signal of the oscillator be tuned in and not the image frequency, which will fall at a higher wave length.**

LONG WAVE BAND ALIGNMENT:

(925-2140 Meters)

1. With wave changing switch in long wave 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) With external oscillator set at 923 meters and connected in series with "Dummy 2" to the tan antenna lead, adjust rear trimmer of oscillator coil (adjustment No. 6, see diagram) until oscillator signal is picked up.
 - (b) Adjust rear trimmer of antenna coil to resonance with oscillator (adjustment No. 3, see diagram).
 - (c) Re-set external oscillator to 2000 meters and rotate variable condenser (move pointer) and pick up oscillator signal, adjust L.W. pad (front adjustment accessible from top of chassis and located between variable condenser and power transformer) to resonance. While making this adjustment, slowly rock variable condenser to and fro until maximum output is obtained.

SERVICE NOTES:

To check for open by-pass condensers, shunt each condenser with another of similar capacity and of the same voltage rating, which is known to be good, until the defective unit is located. Open by-pass condensers frequently cause oscillation and distorted tone. Defective and shorted electrolytic filter condensers cause excessive hum, motor-boating, low volume and a reduction in all D.C. voltages. Open or shorted electrolytic and by-pass condensers (across bias resistor of type 42E tube) will cause low volume and distorted tone.

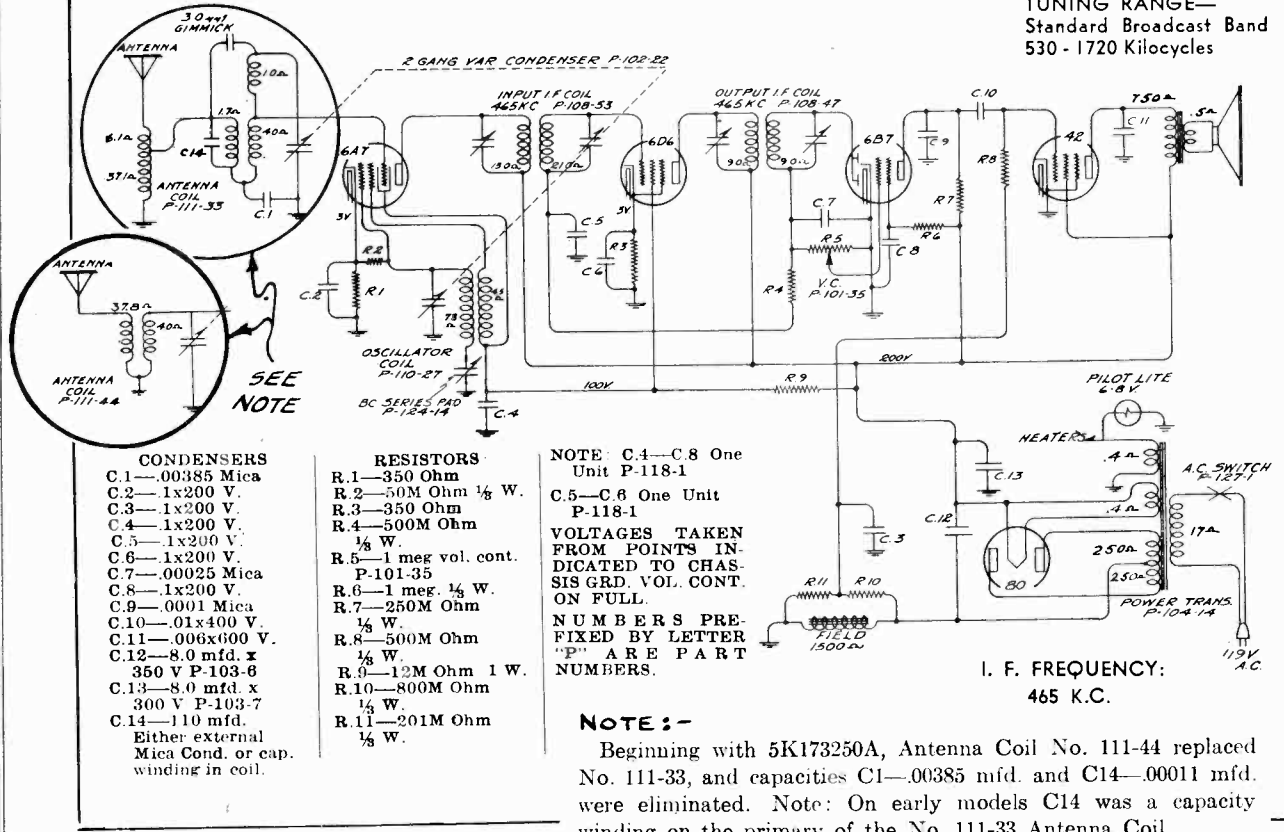
Should the planetary vernier dial drive mechanism fail to function properly, it will probably be found to be due to a cracked or broken compression spring. The drive may be disassembled to replace the compression spring (part number 112-31) by removing the two screws which fasten it to the dial bracket. Before re-assembling all parts should be carefully cleaned and a small amount of vaseline applied to the ball bearings. All other dial parts are hardened and should cause no trouble.

BELMONT RADIO CORP.

MODEL 578 (Two Types)
 Serial 5G133670A to
 5K173250A and
 Above Serial 5K173250A
 Schematic, Voltage, Parts

MODEL 578-5G133670A-5K173250A

TUNING RANGE—
 Standard Broadcast Band
 530 - 1720 Kilocycles



See revised diagram

REPAIR PARTS LIST
 MODEL 578 - SERIES A

Serial No. 5G133670A and up

PART NO.	DESCRIPTION	SOCKETS
CONDENSERS		
100-11	.01 x 400 Volt Tubular Condenser	121-6 Six Prong Socket - Type 42
100-19	.006 x 600 Volt Tubular Condenser	121-6 Six Prong Socket - Type 6D6
100-20	.1 x 200 Volt Tubular Condenser	121-7 Seven Prong Socket - Type 6B7
103-6	8 Mfd. x 350 Volt Electrolytic Condenser	121-7 Seven Prong Socket - Type 6A7
103-7	8 Mfd. x 300 Volt Electrolytic Condenser	121-8 Five Prong Socket - Type Speaker
118-1	Dual .1 x 200 Volt Tubular	121-9 Four Prong Socket - Type 80
129-5	.0001 Mica - Type MT - 20%	
129-12	.00025 Mica - Type MT - 20%	
129-43	.00385 Mica - Type MW - 5%	
RESISTORS		
130-3	500M Ohm - 1/8 Watt - 20% - 100 Volt Carbon	
130-8	201M Ohm - 1/8 Watt - 10% - 20 Volt Carbon	
130-11	250M Ohm - 1/8 Watt - 20% - 50 Volt Carbon	
130-12	50M Ohm - 1/8 Watt - 20% - 20 Volt Carbon	
130-19	1 Meg Ohm - 1/8 Watt - 20% - 100 Volt Carbon	
130-46	800M Ohm - 1/8 Watt - 10% - 100 Volt Carbon	
130-49	12M Ohm - 1 Watt - 20% - 100 Volt Carbon	
130-74	350 Ohm - 1/8 Watt - 20% - 10 Volt Wire Wound	
COILS		
108-47	Output I.F. Transformer Complete	
108-53	Input I.F. Transformer Complete	
110-27	Oscillator Coil Complete	
111-33	Antenna Coil Complete	
111-44	Antenna Coil SK173250A-up	
TRANSFORMERS		
104-14	50/60 Cycle Power Transformer	
104-17	Universal Power Transformer - 40 Cy. Primary	
104-18	25 Cycle Power Transformer	
		SPEAKER
114-15	Six Inch Dynamic Speaker	
114-16	Five Inch Dynamic Speaker	
		MISCELLANEOUS
101-35	Volume Control - Less Switch	
102-22	Two Gang Variable Condenser	
107-5	Line Cord & Plug	
112-15	Dial Crystal Only	
112-16	Dial Pointer	
112-19	Drive Disc Assembly Complete	
112-40	Pilot Light Bracket	
112-60	Drive Bracket Assembly Complete	
112-66	Bakelite Escutcheon Complete with Glass	
112-113	Dial Scale	
115-22	Tube Shield	
118-5	6-8 Volt. T-50 Pilot Light Bulb	
124-14	Type J-6-S Series Pad	
127-1	Line Switch	
131-2	Bakelite Knob	
135-14	Dial Pointer Screw	

MODEL 578, Series A
Socket, Trimmers
Alignment

BELMONT RADIO CORP.

Model 578—Series A

5-TUBE A. C. SUPERHETERODYNE RECEIVER

DESCRIPTION

Tubes

The Tube complement of this chassis is as follows:

- 1 Type 6A7—pentagrid electron coupled oscillator and first detector.
- 1 Type 6D6—remote cut-off pentode as I.F. amplifier.
- 1 Type 6B7—duplex diode pentode as diode detector, A.V.C. and A.F.
- 1 Type 42—pentode output tube.
- 1 Type 80—high vacuum rectifier.

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.

All voltages are measured with 119 volts on the primary of the power transformer.

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

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 40 and 60 cycles and with primary taps for 108, 125, 150, 220 and 250 volts (see illustrations) and also sometimes equipped with 25 cycle transformers with 105-115 volt or 220 volt primaries, not universals.

ALIGNING INSTRUCTIONS

Description of various dummy antennas used and referred to in these instructions:

- (1) I.F. Dummy—Consists of a .1 mfd. condenser connected in series with the external oscillator.
- (2) Broadcast Dummy—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Resonance Indicator:

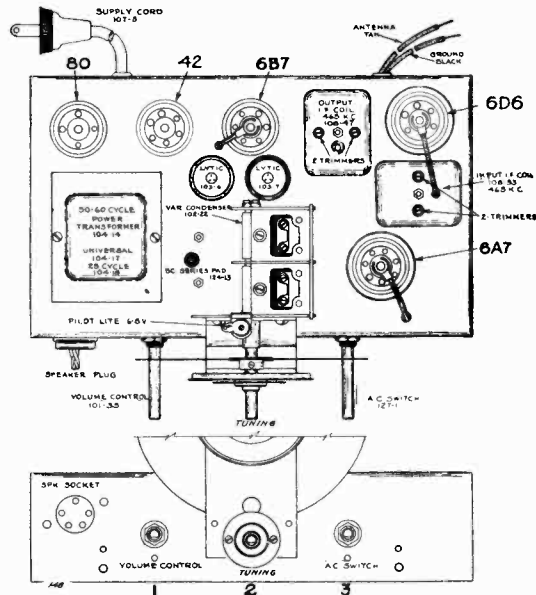
Use as a resonance indicator an output meter connected across the primary of the speaker input transformer, or by means of an adapter between the plate and screen terminals of the type 42 output tube. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range volt meter should be used.

Alignment

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 three bolts by which it is fastened and the speaker plug which you will find on the front flange of the chassis panel.

Aligning I. F. Transformers

1. With volume control full on, the extreme right of its rotation, and with variable condenser at its minimum capacity position, plates entirely out of mesh, adjust the I.F. transformers (two adjustments at the top of parts number 108-53 and 108-47)
 - (a) Connect external oscillator which has been adjusted to 465 kilocycles in series with I.F. dummy antenna, to the control grid cap of the type 6D6 tube and chassis ground. Adjust output I.F. transformer, part number 108-47, to resonance.
 - (b) Move generator output clip from grid of 6D6 to grid cap of 6A7 tube and align input I.F. transformer, part number 108-53.



- (c) With generator connected to grid of type 6A7 tube, readjust output I.F. transformer, part number 108-47, to resonance.

R. F. Alignment—

(530 - 1720 Kilocycles)

1. With gang condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator in series with broadcast dummy antenna to an antenna and black ground leads and make the following adjustments:
 - (a) With external oscillator set at 1720 kilocycles, adjust oscillator trimmer, (rear of gang condenser).
 - (b) Re-set external oscillator to 1400 kilocycles, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance, (front section of gang condenser).
 - (c) Re-set external oscillator to 600 kilocycles and adjust series pad to resonance, rotate condenser and move dial pointer to 600 kilocycles by gently rocking condenser to and fro. Pick up oscillator signal while adjusting series pad to resonance, maximum deflection on an output meter. This adjustment is accessible from the top of the chassis and is located between variable condenser and power transformer.

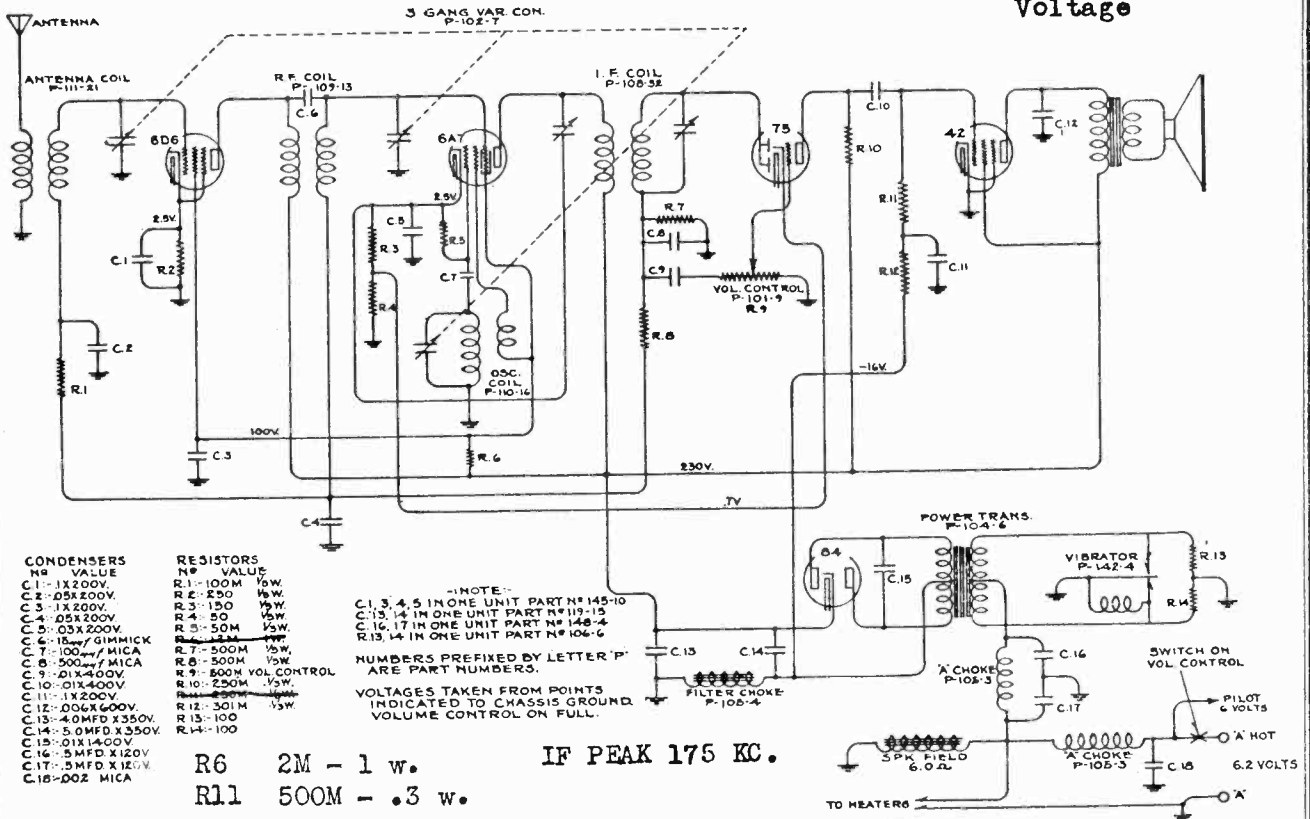
25 Cycle Chassis differ only from 60 cycle chassis in that part number 104-18 transformer is used in place of 50/60 cycle transformer, part number 104-14.

Service Notes

To check for open by-pass condensers, shunt each condenser with another of similar capacity and of the same voltage rating, which is known to be good, until the defective unit is located. Open by-pass condensers frequently cause oscillation and distorted tone. Defective and shorted electrolytic filter condensers cause excessive hum, motor-boating, low volume and a reduction in all D.C. voltages. Open or shorted electrolytic and by-pass condensers (across bias resistor of type 42 tube) will cause low volume and distorted tone.

BELMONT RADIO CORP.

MODEL 580
Schematic, Socket
Voltage

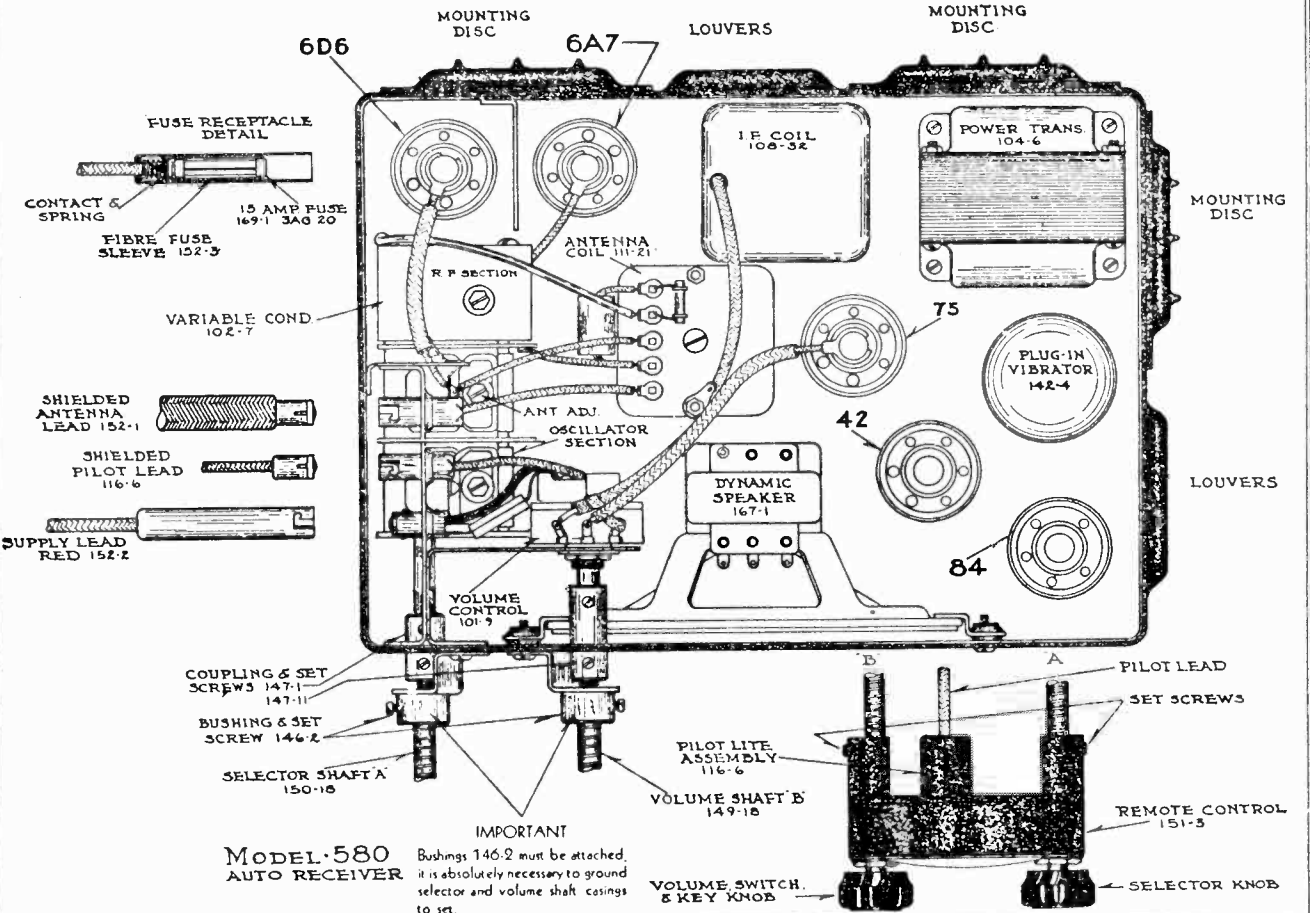


- | CONDENSERS | RESISTORS |
|----------------------|----------------------|
| N ^o VALUE | N ^o VALUE |
| C.1-1X200V. | R.1-100M 1/2W. |
| C.2-0.5X200V. | R.2-250 1/2W. |
| C.3-1X200V. | R.3-150 1/2W. |
| C.4-0.5X200V. | R.4-50 1/2W. |
| C.5-0.5X200V. | R.5-50M 1/2W. |
| C.6-10MFD 100V. | R.6-500M 1/2W. |
| C.7-100MFD 50V. | R.7-500M 1/2W. |
| C.8-500MFD 50V. | R.8-500M 1/2W. |
| C.9-0.01MFD 50V. | R.9-500M VOL CONTROL |
| C.10-0.01MFD 50V. | R.10-250M 1/2W. |
| C.11-1X200V. | R.11-500M 1/2W. |
| C.12-40MFD 250V. | R.12-500M 1/2W. |
| C.13-5.0MFD X.350V. | R.13-100 1/2W. |
| C.14-0.01MFD 50V. | R.14-100 |
| C.15-0.01MFD 50V. | |
| C.16-5MFD X.120V. | |
| C.17-5MFD X.120V. | |
| C.18-0.02 MICA | |

NOTE:
C.1, 3, 4, 5 IN ONE UNIT PART N^o 145-10
C.13, 14 IN ONE UNIT PART N^o 119-15
C.16, 17 IN ONE UNIT PART N^o 148-4
R.13, 14 IN ONE UNIT PART N^o 104-6
NUMBERS PREFIXED BY LETTER 'P'
ARE PART NUMBERS.
VOLTAGES TAKEN FROM POINTS
INDICATED TO CHASSIS GROUND.
VOLUME CONTROL ON FULL.

R6 2M - 1 w.
R11 500M - .3 w.

IF PEAK 175 KC.

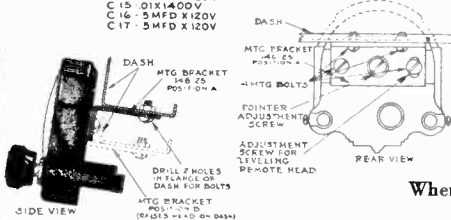
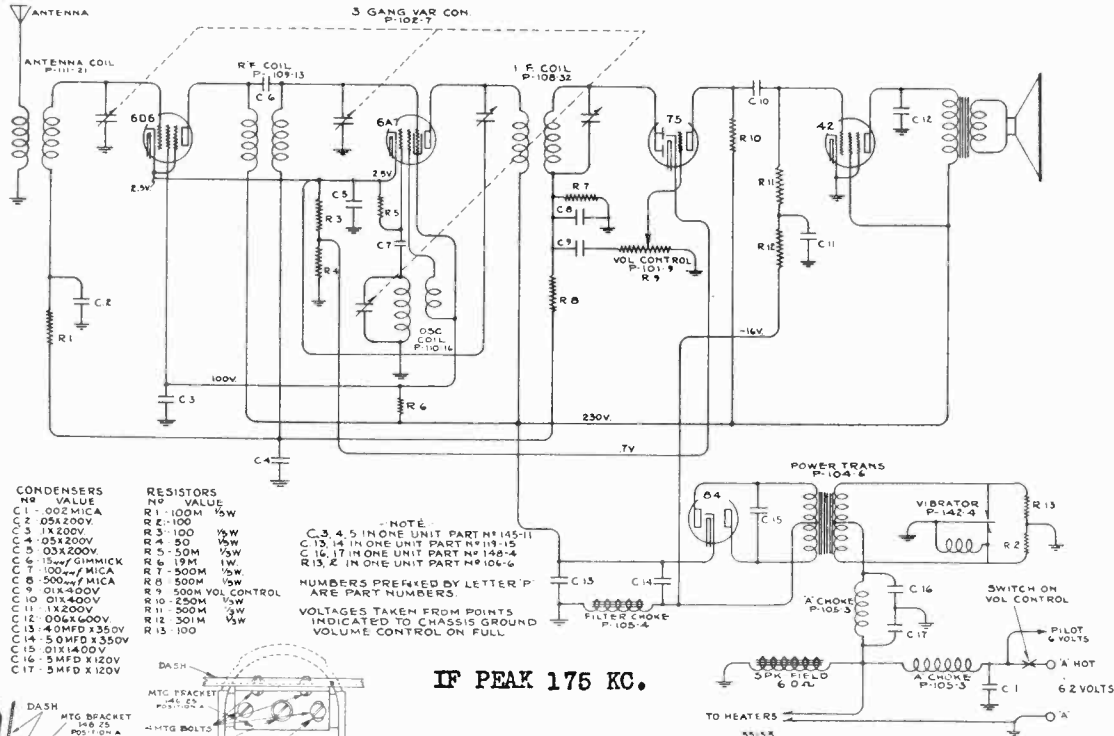


IMPORTANT
Model 580
AUTO RECEIVER
Bushings 146-2 must be attached,
it is absolutely necessary to ground
selector and volume shaft casings
to set.

MODEL 580 Revised
Above Serial 11501

BELMONT RADIO CORP.
Model 580

Schematic, Voltage
Parts List



REPAIR PARTS—MODEL 580
Serial No. 11501 and up

When ordering parts, always specify part and model number as well as serial number of chassis.

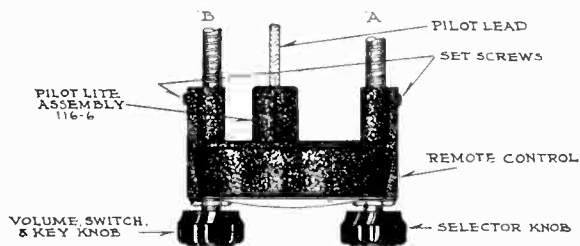
Part No.	Description	List Price Each
101-9	Volume Control with Switch.....	\$1.35
102-7	Three Gang Geared Variable Condenser.....	4.00
104-6	Vibrator Transformer.....	3.00
105-3	"A" Choke—40T—No. 16E—1/2" Dia.....	.10
105-4	380 Ohm Filter Choke.....	.85
106-6	200 Ohm Center Tapped Resistor.....	.25
108-32	Output I. F. Transformer Complete, less can and resistor and Condenser Assembly (175 K. C.).....	1.75
109-13	R. F. Coil.....	1.00
110-16	Osc. Coil & bracket.....	.75
111-21	Antenna Coil.....	1.00
115-18	Special partition shield.....	.20
116-5	6-8 Volt T-50 pilot lamp, screw base.....	.10
116-14	6-8 volt T-51 frosted glass bayonet base lamp.....	.13
116-6	Pilot light assembly, complete, less bulb.....	.40
119-15	5-4 Mfd. 300 Volt Electrolytic Filter Condenser.....	2.50
135-5	3/8x3" carriage bolt.....	.05
140-4	Container complete with top and bottom.....	2.50
142-4	Plug-In Vibrator.....	4.50
145-11	By-Pass Block.....	.75
146-1	Special bracket including battery, antenna, pilot light cable fittings, but less antenna coil volume control.....	.40
146-2	Bushing and bracket complete.....	.20
147-1	Selector Control Coupling.....	.10
147-11	Volume control coupling.....	.10
148-1	.5 Mfd. Generator Condenser.....	.50
148-3	.5 Mfd. Ammeter Condenser.....	.40
148-4	Dual .5 Mfd. x 120 Volt Condenser.....	.75
148-6	Special Ford ignition condenser.....	.60
152-1	Antenna cable.....	.40
152-2	Battery cable.....	.35
152-3	Fuse Insulating Sleeve.....	.05
167-1	Dynamic Speaker.....	5.00
168-1	Spark-plug type suppressor (Universal).....	.30
168-2	Distributor plug-type suppressor.....	.40
168-3	Cable type suppressor.....	.40
169-1	15 Ampere Fuse (3AG-15).....	.05
	Unless otherwise listed, all Carbon Resistors.....	.20
	Unless otherwise listed, all Single Section Tubular Paper By-Pass Condensers.....	.25
	Unless otherwise listed, all Dual Section Tubular Paper By-Pass Condensers.....	.50
	Unless otherwise listed, all Molded Mica Condensers.....	.25
	All Sockets.....	.10
	Plate antenna.....	3.50

REMOTE CONTROL PARTS

Part No.	Description	List Price Each
112-39	Selector Control Shaft.....	.20
112-41	Idler Gear.....	.15
112-42	Pointer Shaft.....	.05
112-43	Volume Control Shaft, Key type less knob.....	.10
112-85	Volume control shaft less knob.....	.05
112-44	Pointer (Specify White or Black).....	.15
112-45	Bezel (Crystal Retainer).....	.05
112-46	Celluloid Dial Crystal.....	.15
112-48	Pointer Shaft Gear.....	.05
112-89	Dial.....	.25
131-5	Black bakelite remote control knobs.....	.15
146-8	Die Cast Remote Control Mounting Bracket.....	.30
146-12	Steering Column Strap.....	.15
146-25	Dash Mounting Bracket.....	.15
147-3	Selector Control Bushing for 112-39 shaft.....	.10
147-4	Volume Control Bushing for 112-43-112-85 shaft.....	.10
149-18	Flexible Volume Control Cable—18".....	1.25
149-24	Flexible Volume Control Cable—24".....	1.50
150-18	Flexible Selector Cable—18".....	1.25
150-24	Flexible Selector Cable—24".....	1.50
151-7	Remote Control Head, less flexible shafts, with pilot assemblies and with knobs and mounting hardware.....	4.90

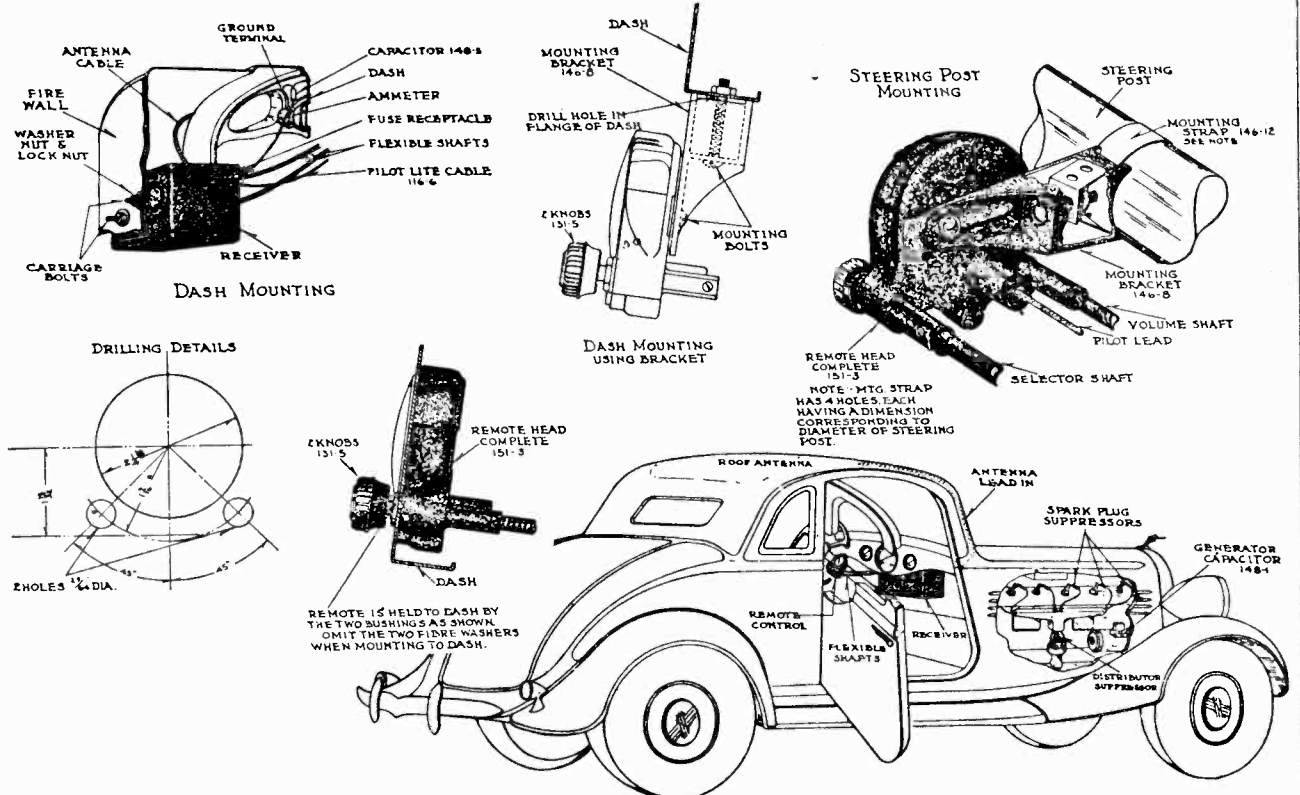
PILOT LIGHT:

Pilot light assembly, part number 116-9, plugs into the set and to the rear of the remote control unit (see illustrations).



BELMONT RADIO CORP.

MODEL 580
Installation Details
Parts List



PARTS LIST—MODEL 580
Serial No. 10001 and up

When ordering parts, always specify part and model number as well as serial number of chassis.

Part No.	Description	Part No.	Description
101-9	Volume Control with Switch.....	112-39	Selector Control Shaft.....
102-7	Three Gang Geared Variable Condenser.....	112-41	Idler Gear.....
104-6	Vibrator Transformer.....	112-42	Pointer Shaft.....
105-3	"A" Choke—40T—No. 16E—1/2" Dia.	112-43	Volume Control Shaft.....
105-4	380 Ohm Filter Choke.....	112-44	Pointer (Specify White or Black).....
106-6	200 Ohm Center Tapped Resistor.....	112-45	Dial Crystal Retainer.....
108-32	Output I. F. Transformer Complete, less can and resistor and Condenser Assembly (175 K. C.).....	112-46	Celluloid Dial Crystal.....
109-13	R. F. Coil.....	112-48	Pointer Shaft Gear.....
110-16	Osc. Coil & bracket.....	112-89	Dial.....
111-21	Antenna Coil.....	131-5	Black bakelite remote control knobs.....
115-18	Special partition shield.....	134-3	Black Fibre Washer for Volume and Selector Control Bushings.....
116-5	6-8 Volt T-50 pilot lamp.....	146-8	Die Cast Remote Control Mounting Bracket.....
116-6	Pilot light assembly, complete, less bulb.....	146-12	Steering Column Strap.....
119-15	6-3 Mfd. 350 Volt Electrolytic Filter Condenser.....	147-3	Selector Control Bushing.....
135-5	3/8x3" carriage bolt.....	147-4	Volume Control Bushing.....
140-4	Container complete with top and bottom.....	149-18	Volume Control Shaft—18".....
142-4	Plug-In Vibrator.....	149-24	Volume Control Shaft—24".....
145-10	By-Pass Block.....	150-18	Selector Shaft—18".....
146-1	Special bracket including battery, antenna, pilot light cable fittings, but less antenna coil volume control.....	150-24	Selector Shaft—24".....
146-2	Bushing and bracket complete.....	151-3	Remote Control Head, less flexible shafts, with pilot assemblies and with knobs and mounting hardware.....
147-1	Selector Control Coupling.....		
147-11	Volume control coupling.....		
148-1	.5 Mfd. Generator Condenser.....		
148-3	.5 Mfd. Ammeter Condenser.....		
148-4	Dual .5 Mfd. x 120 Volt Condenser.....		
152-1	Antenna cable.....		
152-2	Battery cable.....		
152-3	Fuse Insulating Sleeve.....		
167-1	Dynamic Speaker.....		
168-1	Spark-plug type suppressor.....		
168-2	Distributor plug-type suppressor.....		
168-3	Cable type suppressor.....		
168-4	Special Ford spark-plug suppressor.....		
169-1	15 Ampere Fuse (3AG-15).....		

Note: Part No. 145-10 consisting of four separate sections can be replaced with tubular single section condensers at 25c each. It will not be necessary to replace the entire unit should any section thereof fail.

Vibrators can be reconditioned at a cost of \$2.25 each, if the old unit is returned.

All resistors are RMA color coded—specify value and/or resistor number (per schematic diagram) and model number.

When ordering condensers, specify part number, model number and/or capacitor (per schematic diagram) and model number.

BELMONT RADIO CORP.

MODEL 580 Alignment Installation Data

installed and no trouble should be experienced from this angle...

When running the lead-in up the corner post of the car to the foot antenna ground it every few inches to the frame of the body of the car...

Shield high tension leads. The ignition system of car must be kept in good condition. It is advisable to advance the generator charging rate in order to compensate for the additional drain of the receiver on car storage battery.

When this set has been connected to the car for operation it may be found necessary to depend on antennas to balance set to the antenna. This is accomplished as follows:

Model 580 is a five tube superheterodyne receiver with an intermediate frequency of 175 kilocycles and a tuning range of from 300 to 1550 kilocycles.

This receiver has been carefully designed to facilitate servicing. The top and bottom covers are both removable, any part is replaceable without removing the chassis from the cabinet.

Should it ever become necessary or desirable to re-align this receiver, the proper method is as follows:

I. F. ALIGNMENT: 1. With variable condenser at its maximum capacity position and with volume control full on, connect in series with a .1 mfd. condenser, an oscillator set at 175 kilocycles to the grid cap of the 6A7 detector.

2. Adjust trimming condensers of I. F. transformer, part number 108-32 (two adjustments) to resonance, as indicated on an output meter connected across the primary terminals of the speaker input transformer or between the plate and screen terminals of the type 41 diode.

3. Reset oscillator to 1400 kilocycles, rotate variable condenser to pick up signal, adjust antenna (center section) and R. F. (rear section) trimmers to resonance.

This first essential procedure is to disconnect the high tension leads to the spark plugs and attach the spark plug suppressors (108-21) (see Fig. 8 Ford's 1935) to the distributor type suppressor (108-22) in the illustration of a typical installation.

After the spark plug suppressors have been properly installed, the high tension leads to the distributor should be checked to see that the spark plug suppressors have been properly installed.

It is sometimes necessary in cars where the ignition coil is located under the dash, to use an additional capacitor (138-1) obtainable from the distributor to the spark plug and which are connected underneath the metal plate which covers the spark plugs.

After standard suppression has been applied and the hood clamped down to prevent radiation, the receiver should be turned on and the motor noise is still objectionable the next step is to determine whether the interference is originating through chassis pickup or from the antenna.

To check for chassis pickup, disconnect the antenna from the antenna cable and ground the antenna lead to shield of cable, or to the chassis ground.

Cars with spinning power must have the motor bonded to the bulk head and ground to the frame to provide a direct path for the high frequency interference developed in the ignition system.

On cars which have a wooden bulkhead it is necessary to line the bulkhead with lead or other material to provide a direct path for the high frequency interference developed in the ignition system.

No absolute rule for complete motor noise elimination can be applied to all cars. In many instances two cars of the same make present different conditions and require bonding or shielding at different points.

A word or two concerning antennas; naturally the performance of any radio depends on the effectiveness of the antenna.

Model cars are coming through with very good Antennas, already mounted on the car.

Remove control lead of our model 380 auto receiver. Chrysler Airstream, Nash, Packard, DeSoto, Buick, Cadillac, Lincoln, LaSalle, Chevrolet, DeSoto, Oldsmobile, Buick, Chrysler Airflow, Auburn, Packard, Lincoln, LaSalle, Cadillac, Chevrolet, DeSoto, Oldsmobile, Buick, Chrysler Airflow.

Many of the 1935 model automobiles contain the same size air tray receiver as the 1935 models and naturally installation of the receiver should be made in the same manner.

The battery cable should be checked to see that the spark plug suppressors have been properly installed.

Mount control lead to steering column by means of bracket and strap or under dash by means of bracket or to instrument panel (see illustrations). Attach cables as above.

The battery cable, number 152-2, (red wire with fuse receptacle at one end and terminal lug at other end) must be connected to battery terminal of ammeter.

Pilot light assembly. Pilot light assembly, part number 116-6, a shielded cable, plugs into the set and to the rear of the remote control unit (see illustrations).

Antenna connection. The antenna connected to the receiver by means of the antenna cable, should be connected to the single black wire protruding from the end of the cable.

Motor noise suppression. The ignition system of every automobile generates high frequency electrical interference. This high frequency interference arising from the ignition coil, the distributor and the spark plugs must be properly suppressed in order to obtain satisfactory reception.

Remove control lead of our model 380 auto receiver. Chrysler Airstream, Nash, Packard, DeSoto, Buick, Cadillac, Lincoln, LaSalle, Chevrolet, DeSoto, Oldsmobile, Buick, Chrysler Airflow.

Many of the 1935 model automobiles contain the same size air tray receiver as the 1935 models and naturally installation of the receiver should be made in the same manner.

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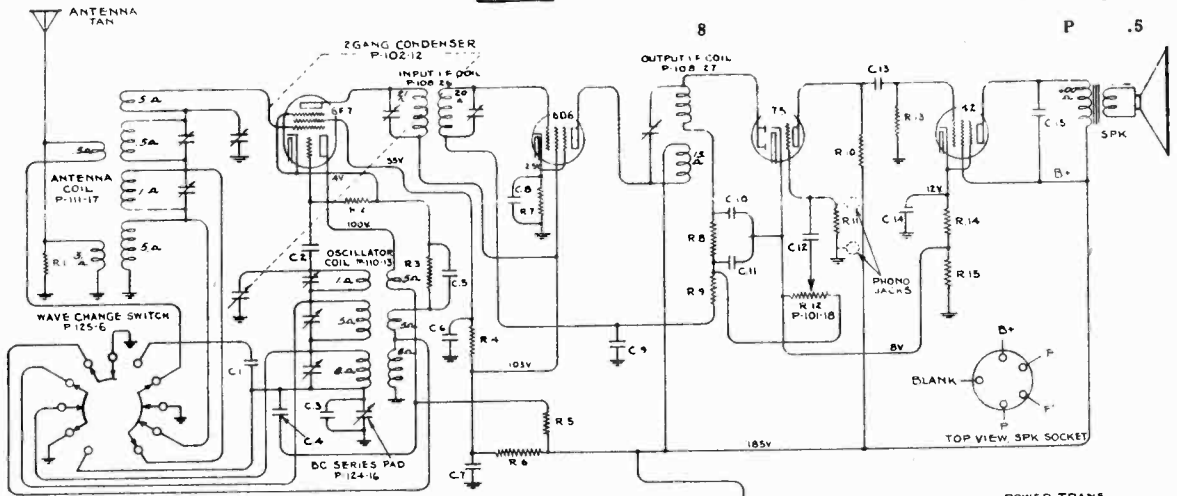
Remove control lead of our model 380 auto receiver. Chrysler Airstream, Nash, Packard, DeSoto, Buick, Cadillac, Lincoln, LaSalle, Chevrolet, DeSoto, Oldsmobile, Buick, Chrysler Airflow.

Many of the 1935 model automobiles contain the same size air tray receiver as the 1935 models and naturally installation of the receiver should be made in the same manner.

BELMONT RADIO CORP.

MODEL 585
Series A,B,C
Schematics, Voltage

SERIES A



CONDENSERS

NO	VALUE
C1	2870 MICA
C2	100
C3	475
C4	1 X 200V
C5	1 X 200V
C6	1 X 200V
C7	1 X 200V
C8	1 X 200V
C9	1 X 200V
C10	500 MICA
C11	500 MICA
C12	0.5 X 200V
C13	0.1 X 400V
C14	4.0 MFD X 25V
C15	0.15 X 400V
C16	3.0 MFD X 250V
C17	4.0 MFD X 300V

RESISTORS

NO	VALUE
R1	800Ω 1/2W
R2	50MΩ
R3	700Ω
R4	100MΩ
R5	20MΩ 1/2W
R6	19MΩ 1/2W
R7	200Ω
R8	50MΩ 1/2W
R9	1MEG
R10	250MΩ
R11	2MEG
R12	500MΩ VOL CONTROL
R13	500MΩ 1/2W
R14	500Ω
R15	35Ω

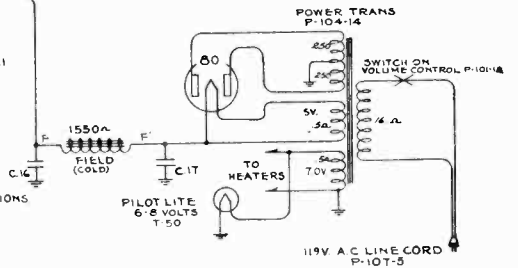
LEGEND

NOTE
C7, C9 ARE IN ONE UNIT P-118-1
C14, C16, C17 ONE UNIT LYTC P-119-11
R7, R14, R15 ONE UNIT P-104-18

NUMBERS PREFIXED BY LETTER 'P' ARE PART NUMBERS.

VOLTAGES TAKEN FROM POINTS INDICATED TO CHASSIS GROUND. VOLUME CONTROL ON FULL

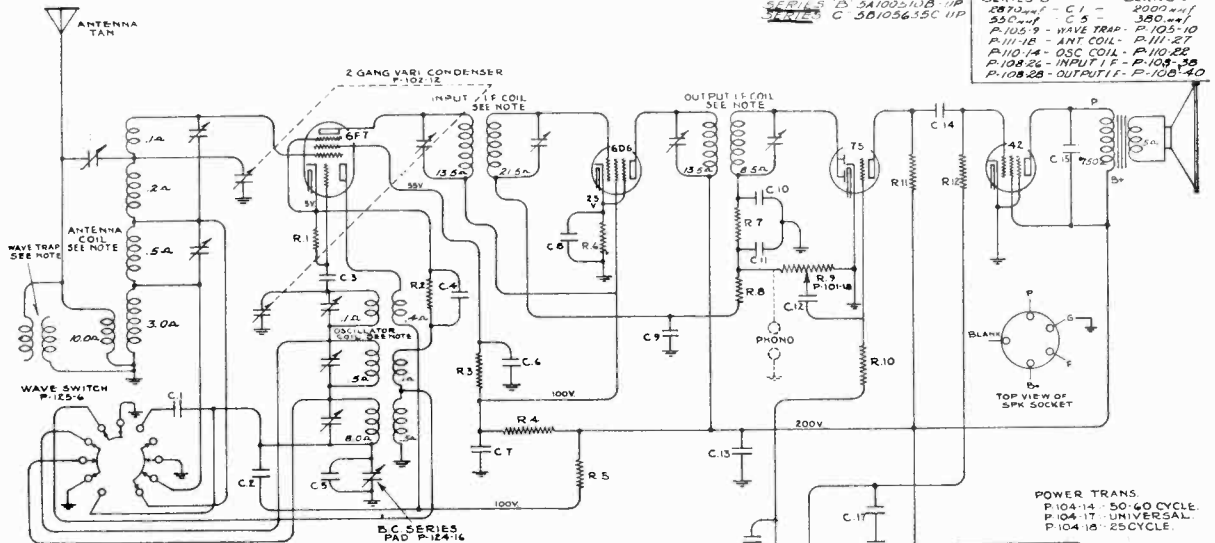
WAVE CHANGE SWITCH P-125-6 3 POSITIONS
ROTATING CLKWISE
1ST POSITION - BC 1720-540KC
2ND - MW 7.6-2.3MC
3RD - SW 23.0-7.5MC
SWITCH SHOWN AT SW POSITION



TUNING RANGE—SERIES A:
Standard Broadcast Band
540 - 1720 Kilocycles
Intermediate Band
2.3 - 7.6 Megacycles
Short Wave Band
7.5 - 23.0 Megacycles

TUNING RANGE—SERIES B & C:
Standard Broadcast Band
530 - 1720 Kilocycles
Intermediate Band
2.35 - 7.7 Megacycles
Short Wave Band
7.6 - 19.0 Megacycles

I. F. FREQUENCY:
Series A } 370 K.C.
Series B }
Series C } 465 K.C.



CONDENSERS

NO	VALUE
C1	SEE NOTE
C2	1 X 200V
C3	100 MICA
C4	1 X 200V
C5	SEE NOTE
C6	1 X 200V
C7	1 X 200V
C8	1 X 200V
C9	1 X 200V
C10	100 MICA
C11	100 MICA
C12	0.5 X 200V
C13	0.1 MFD X 300V P-103-7
C14	0.1 X 400V
C15	1 X 200V
C16	1 X 200V
C17	1 X 200V
C18	0.1 MFD X 350V P-103-4
C19	0.15 X 600V

RESISTORS

NO	VALUE
R1	50MΩ 1/2W
R2	700Ω
R3	100MΩ
R4	25MΩ 1/2W
R5	20MΩ
R6	250Ω 1/2W
R7	50MΩ
R8	500MΩ
R9	500MΩ VOL CTRL
R10	1MEG 1/2W
R11	250MΩ
R12	1MEG
R13	15MΩ
R14	180MΩ
R15	800MΩ

LEGEND

C4, C6, C8 IN DUAL UNIT P-118-1
C7, C9 -
C16, C17 -

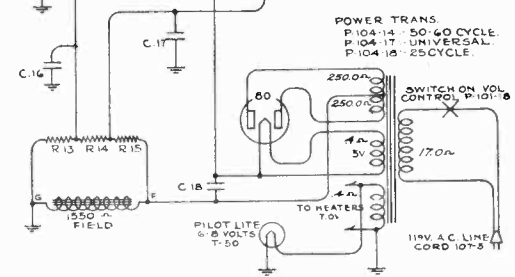
NUMBERS PREFIXED BY LETTER 'P' ARE PART NUMBERS.

VOLTAGES TAKEN FROM POINTS INDICATED TO CHASSIS GROUND. VOLUME CONTROL ON FULL

WAVE SWITCH P-125-6 3 POSITIONS
ROTATING CLKWISE
1ST POSITION - BC 1720-530KC
2ND - MW 7.7-2.35MC
3RD - SW 19.0-7.6MC
SWITCH SHOWN AT SW POSITION

SERIAL NUMBERS
SERIES B 5A100210B HP
SERIES C 5B102635C HP

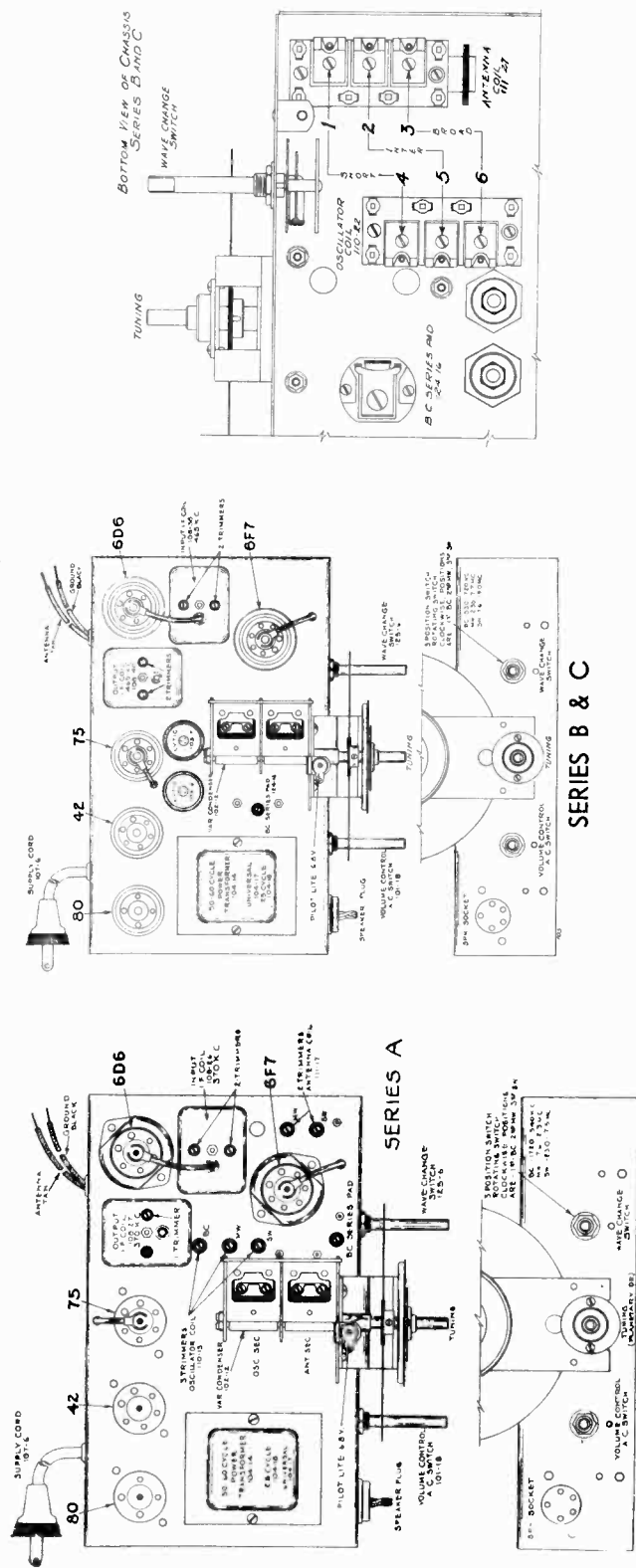
NOTE
SERIES B - C1 - 800 MICA
SERIES C - C1 - 380 MICA
P-105-9 - WAVE TRAP P-105-10
P-110-18 - ANT COIL P-111-21
P-110-14 - OSC COIL P-110-22
P-108-26 - INPUT I.F. P-108-28
P-108-28 - OUTPUT I.F. P-108-40



MODEL 585

Series A, B, C
Socket Layouts, Trimmers
Parts, Change Data

BELMONT RADIO CORP.



DESCRIPTION

The Tube complement of this chassis is as follows:

- 1 Type 6F7—triode pentode as oscillator and first detector.
- 1 Type 6D6—remote cut-off pentode as I.F. amplifier.
- 1 Type 75—duplex diode triode as diode detector, A.V.C. and A.F.
- 1 Type 42—pentode output tube.

Series "A" chassis are equipped with dry electrolytic filter condensers and are serially numbered on paper tags which are attached to the line cord and to the inside of the cabinet.

Series "B" and "C" chassis are serially numbered on the back flange of the chassis, series "B" beginning with number "5A100510F" and up; series "C" chassis, beginning with number "5R105635C", differs only from series "B" in that the I.F. frequency was changed from 370 to 465 kilocycles.

Series "B" and "C" may be identified by the letter "B" and "C" at the end of the serial numbers.

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 diagrams of series "A", "B", and "C".

All voltages are measured with 119 volts on the primary of the power transformer.

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

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 40 and 60 cycles and with primary taps for 108, 125, 150, 220 and 250 volts (see illustrations) and also sometimes equipped with 25 cycle transformers with 105-115 volt primaries, not universal.

LIST OF REPAIR PARTS - MODEL 585 (SERIES A - B - C)

Part No.	Description	Part No.	Description
100-11	01 X 400V—25%	130-44	25M Ohm—1/2 Watt—20%—150V—
100-15	006 X 600V—25%	130-46	800Ω Carbon—1/5 Watt—10%—100V—
100-20	1 X 120V—25%	130-47	180M Ohm—1/5 Watt—10%—100V—
100-22	05 X 200—25%	130-48	13M Carbon—1/5 Watt—10%—20V—
100-23	002 Micro—MW—5%	104-14	50/60 Cycle Power Transformer
103-7	8 Mfd. X 300V—Electrolytic	104-17	Universal Power Trans.—40 Cy.
103-7	Dual 1 X 200V—Plus 50%, Minus 10%	104-18	25 Cycle Power Transformer
118-1	(Series B & C use 3 per set)		
119-11	Not Used		
119-12	Not Used		
129-2	0005 Micro—MT—20%		
129-15	00055 Micro—MT—20%		
129-16	00287 Micro—MW—5%		
129-18	002 Micro—MW—5%		
129-23	00425 Micro—MT—5%		
129-24	000425 Micro—MT—5%		
130-3	500M Ohm—1/5 Watt—20%—100V—		
130-11	250M Ohm 1/3 Watt—20%—90V—		
130-12	50M Carbon—1/5 Watt—20%—20V—		
130-19	1 Meg Ohm—1/3 Watt—20%—100V—		
130-20	100M Ohm—1/3 Watt—20%—50V—		
130-32	250 Ohm—1/3 Watt—20%—10V—		
130-38	Not Used		
130-39	2 Meg Ohm—1/3 Watt—20%—20V—		
130-40	700 Ohm—1/3 Watt—20%—20V—		
130-41	10M Ohm—1/2 Watt—20%—150V—		
130-42	20M Ohm—1/2 Watt—20%—100V—		

Tubes

The Tube complement of this chassis is as follows:

- 1 Type 6F7—triode pentode as oscillator and first detector.
- 1 Type 6D6—remote cut-off pentode as I.F. amplifier.
- 1 Type 75—duplex diode triode as diode detector, A.V.C. and A.F.
- 1 Type 42—pentode output tube.

Series "A" chassis are equipped with dry electrolytic filter condensers and are serially numbered on paper tags which are attached to the line cord and to the inside of the cabinet.

Series "B" and "C" chassis are serially numbered on the back flange of the chassis, series "B" beginning with number "5A100510F" and up; series "C" chassis, beginning with number "5R105635C", differs only from series "B" in that the I.F. frequency was changed from 370 to 465 kilocycles.

Series "B" and "C" may be identified by the letter "B" and "C" at the end of the serial numbers.

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 diagrams of series "A", "B", and "C".

All voltages are measured with 119 volts on the primary of the power transformer.

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

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 40 and 60 cycles and with primary taps for 108, 125, 150, 220 and 250 volts (see illustrations) and also sometimes equipped with 25 cycle transformers with 105-115 volt primaries, not universal.

MODEL 585 Series A,B,C Alignment Data

BELMONT RADIO CORP.

Intermediate Band Alignment—

- (2.35 - 7.7 Megacycles)
 - With wave changing switch in the center position, and with dial pointer set to 7.7 megacycles, make the following adjustments:
 - Adjust antenna trimmer to resonance. Adjustment number 2, see diagram.
 - Re-set external oscillator to 2.5 megacycles (2500 kilocycles), rotate variable condenser, move pointer, pick up oscillator signal and check for tracking and sensitivity.
 - Adjust antenna trimmer to resonance. Adjustment number 1, see diagram.
 - With external oscillator set at 7 megacycles and connected in series with short wave dummy antenna, as for short wave adjustments, adjust trimmer of oscillator coil, part number 108-26 until 7 megacycle signal is picked up. For location of this chassis, see diagram.

Alignment

- No alignment 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 antenna system should be connected to the antenna terminals of the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the three bolts by which it is fastened and the speaker plug which you will find on the front flange of the chassis panel.

Aligning I. F. Transformers

- With wave control full on, the extreme right of its rotation, and with wave changing switch in the broadcast position, extreme left of its rotation, and with variable condenser at its minimum capacity position, plates entirely out of mesh, adjust the I.F. transformers (two adjustments at the top of parts number 108-36 and 108-38) as follows:
 - Connect external oscillator which has been adjusted to 465 kilocycles in series with I.F. dummy antenna, to the control grid cap of the type 6D6 tube and chassis ground. Adjust output I.F. transformer, part number 108-34, to resonance.
 - Move generator output clip from grid of 6D6 to grid cap of 6D6 and adjust input I.F. transformer, part number 108-38.
 - With generator connected to grid of type 6F7 tube, readjust output I.F. transformer, part number 108-40, to resonance.

Broadcast Band Alignment—

- (530 - 1720 Kilocycles)
 - With wave changing switch in the broadcast position, extreme left of its rotation, and with wave control full on, connect an external capacity position, plates entirely out of mesh, connect an external oscillator in series with broadcast dummy antenna to the antenna lead and black ground leads and make the following adjustments:
 - With external oscillator set at 1720 kilocycles, adjust oscillator trimmer, see diagram, for location of this adjustment.
 - Re-set external oscillator to 1400 kilocycles, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance. For location of this adjustment, number 3, see diagram.
 - Re-set external oscillator to 600 kilocycles and adjust antenna trimmer to resonance, rotate condenser and move dial pointer to 600 kilocycles by gently rocking condenser to and fro. Pick up signal and adjust antenna trimmer to resonance. This adjustment is accessible from the top of the chassis and is located between variable condenser and power transformer, see top view—part number 124-16.
 - Check for tracking and sensitivity at 1000 kilocycles.

Short Wave Band Alignment—

- (17.6 - 19.0 Megacycles)
 - This band is aligned after the I.F. adjustments have been completed. The antenna trimmer is adjusted to resonance, extreme right of its rotation set dial pointer to 18 megacycles and connected in series with short wave dummy antenna to the antenna lead and black ground leads, adjust the oscillator short wave trimmer, see diagram, number 4, see diagram. For location of this adjustment, number 4, see diagram.
 - Adjust short wave antenna trimmer to resonance. For location of this adjustment, number 1, see diagram.

- Re-set external oscillator to 9 megacycles, rotate condenser, move dial pointer to 9 megacycles and check for tracking and sensitivity. Do not bend plates. Note: It is extremely necessary that the fundamental signal of the oscillator be tuned in and not the image frequency, which will fall below the fundamental.

Intermediate Band Alignment—

- (2.3 - 7.6 Megacycles)
 - With wave selector switch in the center position and with dial pointer set to 7.6 megacycles, make the following adjustments:
 - Adjust antenna trimmer to resonance. Adjustment number 2, see diagram.
 - Re-set external oscillator to 2.5 megacycles (2500 kilocycles), rotate variable condenser, move pointer, pick up oscillator signal and check for tracking and sensitivity.
 - Adjust antenna trimmer to resonance. Adjustment number 1, see diagram.
 - With external oscillator set at 7 megacycles and connected in series with short wave dummy antenna, as for short wave adjustments, adjust center trimmer of oscillator coil, part number 108-13, until 7 megacycle signal is picked up. This is the center trimmer of the oscillator. The location of this trimmer is shown in diagram.
 - Adjust antenna trimmer to resonance, this adjustment is the rear of a group of two located at the right of the chassis next to the 6F7 tube (see top view).
 - Re-set external oscillator to 2.5 megacycles (2500 kilocycles), rotate variable condenser, move pointer, pick up oscillator signal and check for tracking and sensitivity. Do not bend plates.

Aligning I. F. Transformers

- With wave control full on, the extreme right of its rotation, and with wave changing switch in the broadcast position, extreme left of its rotation, and with variable condenser at its minimum capacity position, plates entirely out of mesh, adjust the I.F. transformers (adjustments at the top of parts number 108-26 and 108-27—see top view).

Broadcast Band Alignment—

- (530 - 1720 Kilocycles)
 - With wave changing switch in the broadcast position, extreme left of its rotation, and with wave control full on, connect an external capacity position, plates entirely out of mesh, connect an external oscillator in series with broadcast dummy antenna to the antenna lead and black ground leads and make the following adjustments:
 - With external oscillator set at 1720 kilocycles, adjust oscillator trimmer, see diagram, for location of this adjustment.
 - Re-set external oscillator to 1400 kilocycles, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance. For location of this adjustment, number 3, see diagram.
 - Re-set external oscillator to 600 kilocycles and adjust antenna trimmer to resonance, rotate condenser and move dial pointer to 600 kilocycles by gently rocking condenser to and fro. Pick up signal and adjust antenna trimmer to resonance. This adjustment is accessible from the top of the chassis and is located between variable condenser and power transformer, see top view—part number 124-16.
 - Check for tracking and sensitivity at 1000 kilocycles.

Short Wave Band Alignment—

- (17.6 - 19.0 Megacycles)
 - This band is aligned after the I.F. adjustments have been completed. The antenna trimmer is adjusted to resonance, extreme right of its rotation set dial pointer to 18 megacycles and connected in series with short wave dummy antenna to the antenna lead and black ground leads, adjust the oscillator short wave trimmer, see diagram, number 4, see diagram. For location of this adjustment, number 4, see diagram.
 - Adjust short wave antenna trimmer to resonance. For location of this adjustment, number 1, see diagram.

- Re-set external oscillator to 9 megacycles, rotate condenser, move dial pointer to 9 megacycles and check for tracking and sensitivity. Do not bend plates. Note: It is extremely necessary that the fundamental signal of the oscillator be tuned in and not the image frequency, which will fall below the fundamental.

ALIGNING INSTRUCTIONS—SERIES A

- Description of various dummy antennas used and referred to in instructions.
- I.F. Dummy—Consists of a .1 mfd. condenser connected in series with the external oscillator.
- Broadcast Dummy—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.
- Short Wave Dummy—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

SERIES A

- Use as a resonance indicator an output meter connected across the primary on the plate and screen terminals of the type 42 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 multirange voltmeter should be used.

SERIES A

- Alignment
- 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 antenna system should be connected to the antenna terminals of the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the three bolts by which it is fastened and the speaker plug which you will find on the front flange of the chassis panel.

Aligning I. F. Transformers

- With volume control full on, the extreme right of its rotation, and with wave changing switch in the broadcast position, extreme left of its rotation, and with variable condenser at its minimum capacity position, plates entirely out of mesh, adjust the I.F. transformers (adjustments at the top of parts number 108-26 and 108-27—see top view).
- Connect external oscillator in series with I.F. dummy antenna to the antenna lead and black ground leads and make the following adjustments:
 - With external oscillator set at 1720 kilocycles, adjust oscillator trimmer, see diagram, for location of this adjustment.
 - Re-set external oscillator to 1400 kilocycles, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance. For location of this adjustment, number 3, see diagram.
 - Re-set external oscillator to 600 kilocycles and adjust antenna trimmer to resonance, rotate condenser and move dial pointer to 600 kilocycles by gently rocking condenser to and fro. Pick up signal and adjust antenna trimmer to resonance. This adjustment is accessible from the top of the chassis and is located between variable condenser and power transformer, see top view—part number 124-16.
 - Check for tracking and sensitivity at 1000 kilocycles.

Broadcast Band Alignment—

- (540 - 1720 Kilocycles)
 - With wave changing switch in the broadcast position, extreme left of its rotation, and with wave control full on, connect an external capacity position, plates entirely out of mesh, connect an external oscillator in series with broadcast dummy antenna to the antenna lead and black ground lead, make the following adjustments:
 - With external oscillator set at 1720 kilocycles, adjust oscillator trimmer, see diagram, for location of this adjustment.
 - Re-set external oscillator to 1400 kilocycles, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance. For location of this adjustment, number 3, see diagram.
 - Re-set external oscillator to 600 kilocycles and adjust antenna trimmer to resonance, rotate condenser and move dial pointer to 600 kilocycles by gently rocking condenser to and fro. Pick up signal and adjust antenna trimmer to resonance. This adjustment is accessible from the top of the chassis and is located between variable condenser and power transformer, see top view—part number 124-16.
 - Check for tracking and sensitivity at 1000 kilocycles.

Short Wave Band Alignment—

- (17.5 - 23.0 Megacycles)
 - This band is aligned after the I.F. adjustments have been completed. The antenna trimmer is adjusted to resonance, extreme right of its rotation, set pointer of dial to 21 megacycles.
 - With external oscillator set at 21 megacycles, and connected to the antenna lead in series with short wave dummy antenna to the antenna lead and black ground lead, adjust the oscillator short wave trimmer, until generator signal is picked up. This trimmer is the one closest to the front of the chassis of the group of three trimmers located next to the gang condenser (see top view of chassis).
 - Adjust antenna trimmer to resonance. This adjustment is the one to the right of the 6F7 tube and is the one closest to the front of the chassis (see top view).

Service Notes
To check for open bypass condensers, shunt each condenser with another of similar capacity and of the same voltage rating, which is known to be good, until the defective unit is located. Open bypass condensers frequently cause oscillation and distorted tone. Defective and shorted electrolytic filter condensers cause excessive hum, motor-heating, low volume and a reduction in all D.C. voltages. Open or shorted electrolytic filter condensers cause excessive hum. Open or shorted electrolytic filter condensers cause excessive hum. Open or shorted electrolytic filter condensers cause excessive hum. Open or shorted electrolytic filter condensers cause excessive hum.

OPERATION

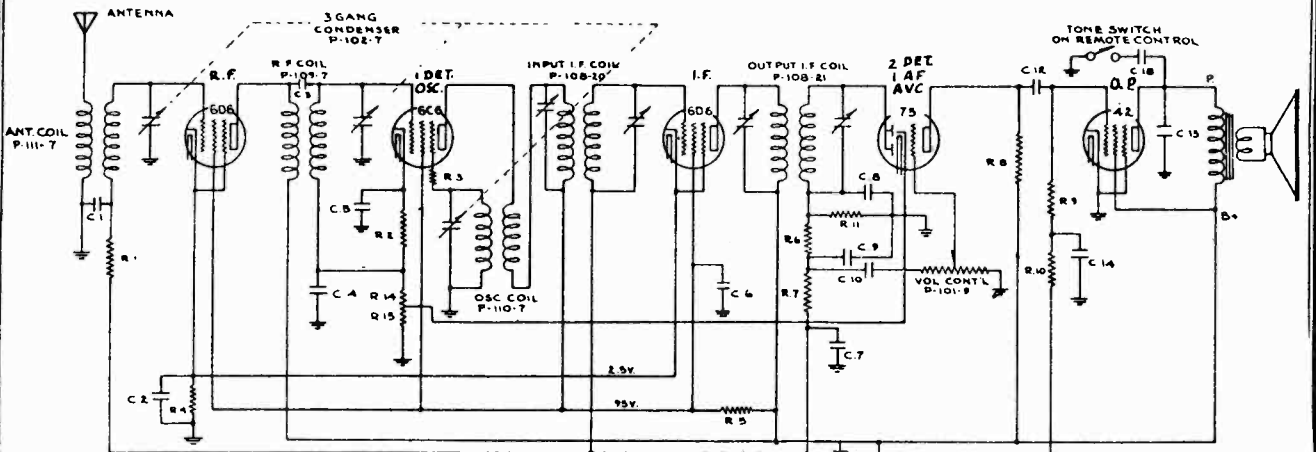
CONTROLS—The three control knobs on the front of the cabinet are: **Volume Control** and **Wave Control**. **Wave Control** When turning on, a click will be heard and the dial will light. Wait approximately 45 seconds for the tubes to heat up. Turn knob all the way to the left to turn set off. **Volume Control** The upper part of the dial is marked in kilocycles, the lower part in megacycles. The lower scale is the short wave band, the upper scale is the broadcast band. The lower scale is the short wave band, the upper scale is the broadcast band. The lower scale is the short wave band, the upper scale is the broadcast band.

ANTENNA—The antenna terminals are located on the front of the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the three bolts by which it is fastened and the speaker plug which you will find on the front flange of the chassis panel.

MODEL 670-A

Schematic, Voltage
Parts List

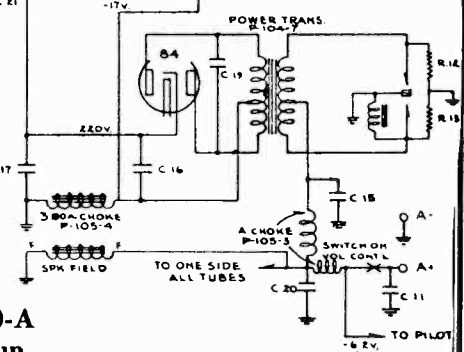
BELMONT RADIO CORP.



IF PEAK 175 KC.

RESISTORS		CONDENSERS	
MP	VALUE	M#	VALUE
R 1	250M 1/2W	C 1	05 X 200V.
R 2	450 Ω	C 2	1 X 200K
R 3	1500 Ω	C 3	11.5 μF GIMMICK
R 4	150 Ω	C 4	05 X 200V.
R 5	25M 1W	C 5	05 X 200V.
R 6	50M 1/2W	C 6	1 X 200V.
R 7	250M 1/2W	C 7	1 X 200V.
R 8	250M 1/2W	C 8	0005 MICA
R 9	200M 1/2W	C 9	0005 MICA
R 10	300M 1/2W	C 10	01 X 400V.
R 11	250M 1/2W	C 11	002 MICA
R 12	100 Ω	C 12	01 X 400V.
R 13	100 Ω	C 13	003 X 600V.
R 14	5M	C 14	1 X 200K
VAR RESISTOR	500M	C 15	5MFD X 120V.
R 15	200 Ω	C 16	8MFD X 350V.
		C 17	8MFD X 350V.
		C 18	01 X 400V.
		C 19	015 X 1400V
		C 20	5MFD X 120V.
		C 21	01 X 400V

NOTE:
NUMBERS PREFIXED BY LETTERS ARE PART NUMBERS.
VOLTAGES TAKEN FROM POINTS INDICATED TO CHASSIS GROUND. VOLUME CONTROL ON FULL.
THE PHRASE GIMMICK MEANS A WIRE WOUND AROUND ANOTHER WIRE.
RESISTORS IN ONE UNIT, P-108-14, R 2, 4, 14, 15 CONDENSERS IN ONE UNIT, P-119-4, C 16, 17, CONDENSERS C 2, C 4, C 5, C 6, C 7 ARE IN ONE UNIT P-145-5.
RESISTORS AND CONDENSERS IN OUTPUT I F CAN, P-108-21, C 8, 9, 10 AND R 6, 7, 11 CONDENSER, C 1, IN ANT COIL CAN P-111-2 CONDENSERS C 15, C 20 IN ONE UNIT P-148-4



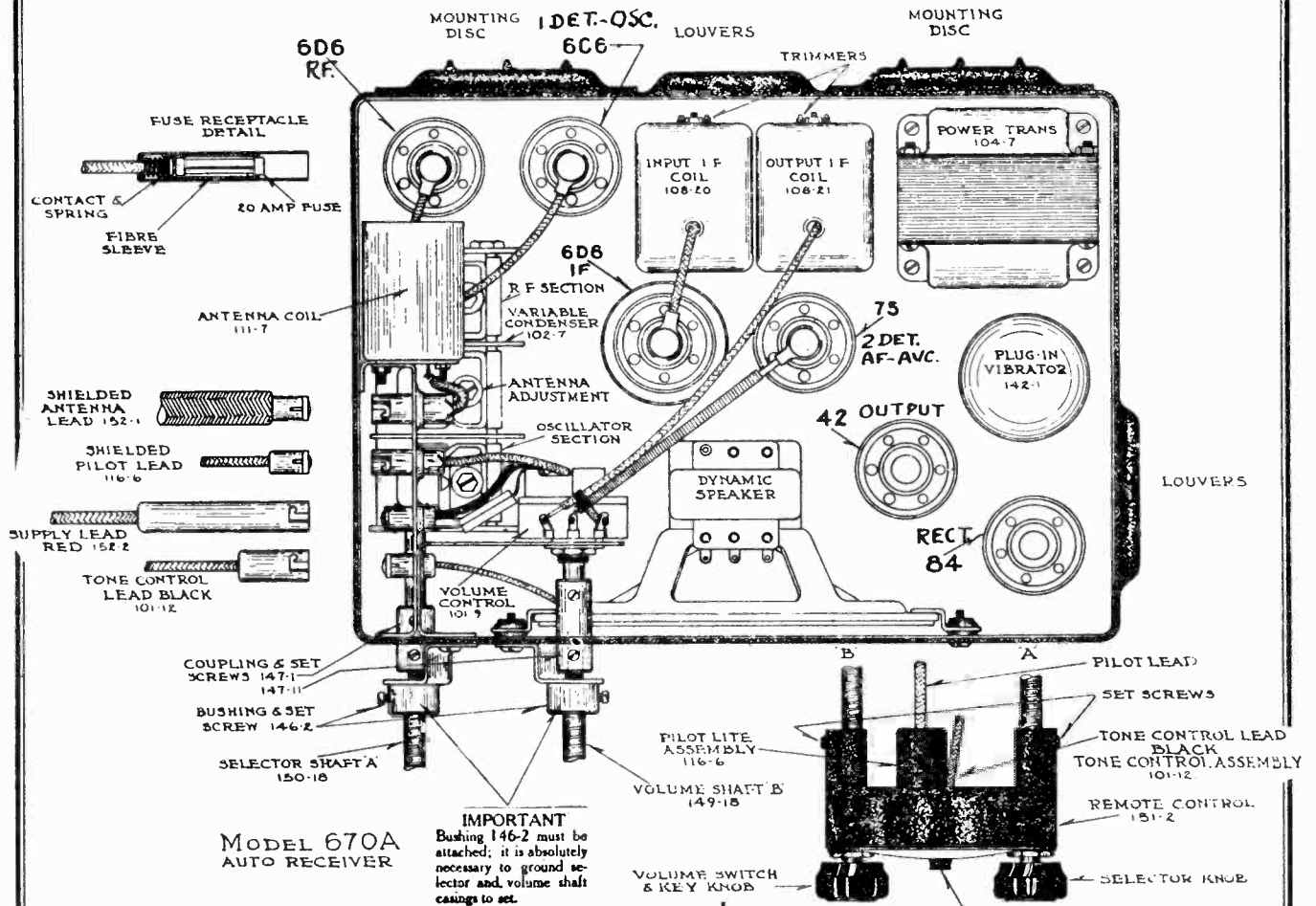
PARTS LIST—MODEL 670-A
Serial No. 4D-502501 and up

Part No.	Description	When ordering parts, always specify part and model number as well as serial number of chassis.
101-9	Volume Control with Switch.....	
101-12	Tone Control Assembly, complete.....	
102-7	Three Gang Geared Variable Condenser.....	
104-6	Vibrator Transformer.....	
105-3	"A" Choke—40T—No. 16E—1/2" Dia.	
105-4	380 Ohm Filter Choke.....	
106-6	200 Ohm Center Tapped Resistor.....	
106-14	5800 Ohm Metal Clad Resistor.....	
108-20	Input I. F. Transformer completely assembled in can (175 K. C.).....	
108-21	Output I. F. Transformer complete with can, but less resistor and Condenser Assembly (175 K. C.).....	
	Resistor and Condenser Assembly for 108-21.....	
109-7	R. F. Coil.....	
110-7	Osc Coil & bracket.....	
111-7	Antenna Coil.....	
112-43	Volume Control Shaft complete with knob.....	
115-18	Special partition shield.....	
115-22	Tube shield.....	
116-5	6-8 Volt T-50 pilot lamp.....	
116-6	Pilot light assembly, complete, less bulb.....	
119-4	8-8 Mfd. x 350 Volt Electrolytic Filter Condenser ..	
142-1	Plug-In Vibrator.....	
145-5	.4 Mfd. By-Pass Block.....	
146-14	Special bracket including battery antenna, pilot light and tone control cable fittings, but less antenna coil volume control.....	
148-4	Dual .5 Mfd. 120 Volt Condenser.....	
161-1	20 Ampere fuse.....	
147-1	Selector Control Coupling.....	
147-2	Bushing and bracket complete.....	
147-11	Volume control coupling.....	
135-5	3/8x3" carriage bolt.....	
140-3	Container complete with top and bottom.....	
148-1	.5 Mfd. Generator Condenser.....	
148-3	.5 Mfd. Ammeter Condenser.....	
149-18	Volume Control Shaft—18".....	
149-24	Volume Control Shaft—24".....	
150-18	Selector Shaft—18".....	

Note: Part No. 145-5 consisting of five separate sections can be replaced with tubular single section condensers at 25c each. It will not be necessary to replace the entire unit should any section thereof fail.
Vibrators can be reconditioned at a cost of \$3.00 each, if the old unit is returned.
All resistors are RMA color coded—specify value and/or resistor number (per schematic diagram) and model number.
When ordering condensers, specify part number, model number and/or capacitor (per schematic diagram) and model number.
We cannot supply speaker cones only. We can replace a speaker on which a cone has been damaged for \$1.50, if defective speaker is returned, transportation charges prepaid.

BELMONT RADIO CORP.

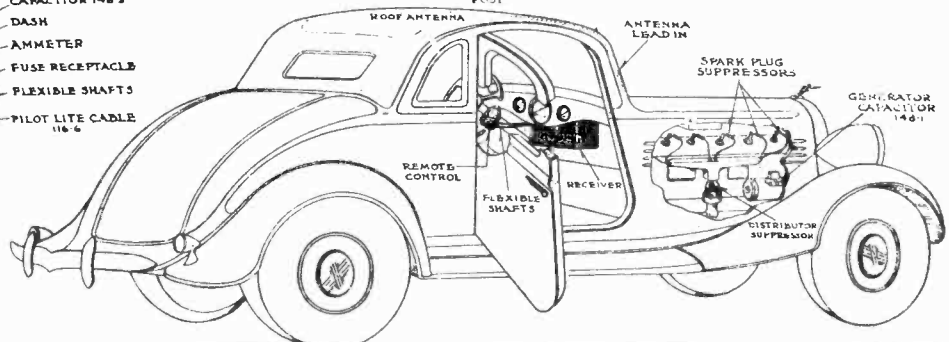
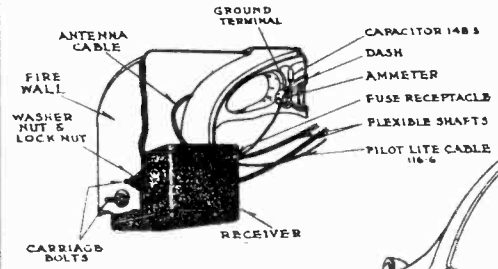
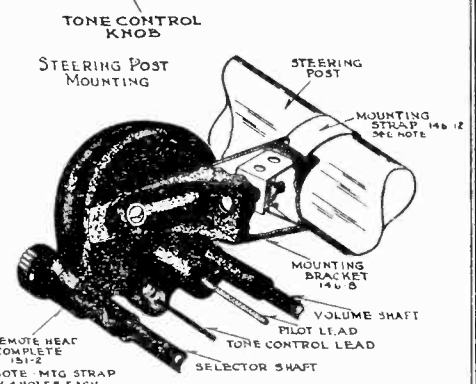
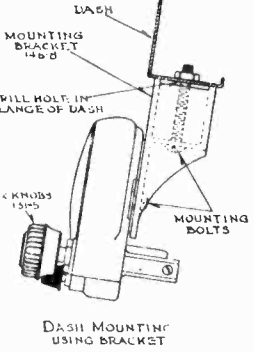
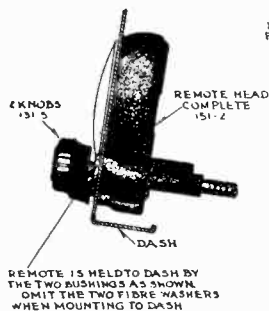
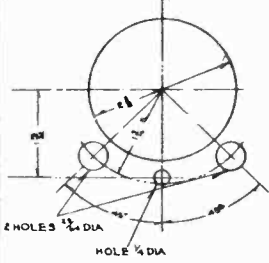
MODEL 670-A
Socket, Trimmers
Installation Details



MODEL 670A
AUTO RECEIVER

DASH MOUNTING

DRILLING DETAILS



MODEL 670-A

Alignment
Installation Data

BELMONT RADIO CORP.

BALANCING SET TO ANTENNA:

When this set has been installed and is ready for operation it may be found necessary (depending on antenna) to balance set to this antenna. This is accomplished as follows:

With the receiver tuned to a very weak station, about 130 to 140 (1300 to 1400 kilocycles) on the dial, adjust the antenna trimmer with a screw driver until maximum volume is attained. To reach the antenna trimmer remove the plug button from the top of the case.

I. F. ALIGNMENT:

1. With variable condenser at its maximum capacity position and with volume control full on, connect in series with a .1 mfd. condenser, an oscillator set at 175 kilocycles to the grid cap of the 6C6 tube.

2. Adjust trimming condensers of both input and output I. F. transformers, parts number 108-20 and 108-21 (see top view of chassis) to resonance with an oscillator, as indicated on an output meter connected across the primary terminals of the speaker input transformer or between the plate and screen terminals of the type 42 output tube. The connection to the tube can be made by means of an adapter. Maximum deflection on the output meter indicates resonance.

Note: Each I. F. transformer has two adjustments, both of these adjustments on both transformers are accessible through holes located in the back of the case between the two mounting plates and directly under the louvers.

R. F. ALIGNMENT:

1. Attach oscillator connected in series with a 200 mmfd. condenser to the antenna lead and with the variable condenser at its minimum capacity position (extreme right of its rotation) and with an oscillator set at 1550 kilocycles, adjust condenser trimmer of oscillator section (Front shaft end) to resonance.

2. Re-set oscillator to 1400 kilocycles, rotate variable condenser to pick up signal, adjust antenna (center section) and R. F. (rear section) trimmers to resonance.

3. Check alignment at 1500-1000-800-600-530 kilocycles by setting oscillator to these frequencies and picking up signal by rotating condenser.

4. Bend slotted plates of antenna and R. F. sections only if necessary. UNDER NO CIRCUMSTANCES BEND PLATES OF OSCILLATOR SECTION.

NOTES:

Voltages from chassis to different points are indicated on schematic circuit diagram, and should be measured with a voltmeter having a resistance of 1000 ohms per volt.

Failure to operate, noisy or weak reception, may be due to defective tubes or poor contact between cap on top of tube and grid clip.

Tubes may be checked by replacing with another tube which is known to be good.

If fuse blows out frequently, and insulating sleeve has been properly placed over fuse, the trouble probably is in the vibrator and vibrator should be replaced.

NEVER ATTEMPT TO ADJUST VIBRATOR POINTS.

Case rattles may be due to one or more of the following:

Loose screws in top or bottom covers. Loose elements in tubes. Loose tube shield. Loose R. F. coil shield. Loose grill cloth.

RECEIVER INSTALLATION:

Determine most satisfactory or desirable mounting position. In most cases it will be found that the receiver can be mounted on the car bulk head, above and to the right of the steering post.

Use the cardboard template which is the same size as set and mark location for two mounting bolts, if mounted on the long side and one bolt if on the short side.

Then drill two (2) one-half inch ($\frac{1}{2}$ ") holes, making certain that the paint around the hole on the engine side of fire wall or bulk head is scraped clean to insure a good ground connection between receiver and the frame of the car. Assemble brackets number 146-2 to case with self-tapping screws.

Insert bolts through dash, assemble plain, lockwashers and nuts on engine side, then hang receiver over bolt heads and tighten nuts securely.

Mount the remote control unit on steering column by means of mounting bracket or attach to instrument panel or under dash (see illustration).

Two flexible shafts are furnished, one with a slotted fitting on one end, which is the volume control shaft (number 149-18), the other is the selector shaft, with key fitting at one end (number 150-18).

Make certain that the outer casings of flexible shafts go into remote control bushings for approximately five-sixteenths of an inch and tighten set screws to secure cables. If cables are pushed too far into remote control head, shafts will not turn freely. Always try to install drive shafts in as straight a line as possible from remote control to set. AVOID SHARP BENDS IN CABLES.

IMPORTANT—READ CAREFULLY:

We are prepared to exchange, without charge, our standard number 149-18 and 150-18, eighteen inch cables for twenty-four inch cables,

number 149-24 and 150-24. You will find that 99% of the installations can be made with the standard eighteen inch cables, and bear in mind that the shorter the cable, the smoother the drive.

DIAL ADJUSTMENT:

Mount control head to steering column by means of bracket and strap or under dash by means of bracket or to instrument panel (see illustrations). Attach cables as above. Tune set to some station of a known frequency (between 800 and 1200 K.C.), hold selector knob, then with a screw driver adjust the slotted screw on back of the control head, and in that way adjust the dial pointer to the correct frequency setting.

CONNECTIONS TO BATTERY:

The battery cable, number 152-2, (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 inserting in receiver (see illustration). All bypass leads should be as short as possible.

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.

PILOT LIGHT:

Pilot light assembly, part number 116-6, a shielded cable, plugs into the set and to the rear of the remote control unit (see illustrations).

TO NE CONTROL:

The tone control assembly, part number 101-12, attaches to the back of the remote control head by means of a special screw and plugs into the set (see illustrations).

ANTENNA CONNECTION:

The antenna is connected to the receiver by means of the antenna cable, number 152-1. The antenna wire is the single black wire projecting from the end of the cable. Splice this wire to the roof antenna lead and ground the pig-tail shielding as close to the corner post of the car as possible.

OPERATION:

Place key (knob) in lock of left hand control of the remote control unit. After waiting approximately 45 seconds for tubes to heat up, rotate station selector, right hand knob, until a desirable program is heard. De-tuning will very seriously affect the tone quality of this receiver. Tone control knob located between two black knobs (see illustrations) is a BASS and TREBLE switch, it is not a variable tone control. Turning it to the right makes the BASS connection, turning it to the left makes the TREBLE connection. You will note that the BASS position assists materially in reducing interference from static, street car lines and other high pitched disturbances.

MOTOR NOISE SUPPRESSION:

The ignition system of every automobile generates high frequency electrical interference. This high frequency interference arising from the ignition coil, the distributor and the spark plugs must be properly suppressed in order to obtain satisfactory reception. Each car will present more or less an individual problem but there is a definite procedure to follow which holds true in every case.

This first essential procedure is to disconnect the high tension leads to the spark plugs and attach the spark plug suppressors (168-1) (for V 8 Fords 168-4) the special distributor type suppressor (168-2) which is inserted in the center contact of the distributor as indicated in the illustration of a typical installation. (NOTE V 8 FORD USES NO DISTRIBUTOR SUPPRESSOR.) For cap type distributor, exchange the standard plug type distributor suppressor (168-2) for a special cable type suppressor (168-3) from your dealer. In some few cases, such as Buicks it is sometimes necessary to use cable type (168-3) suppressors. This type of suppressor is inserted in the leads running from the distributor to the spark plugs and which are concealed underneath the metal plate which covers the spark plugs.

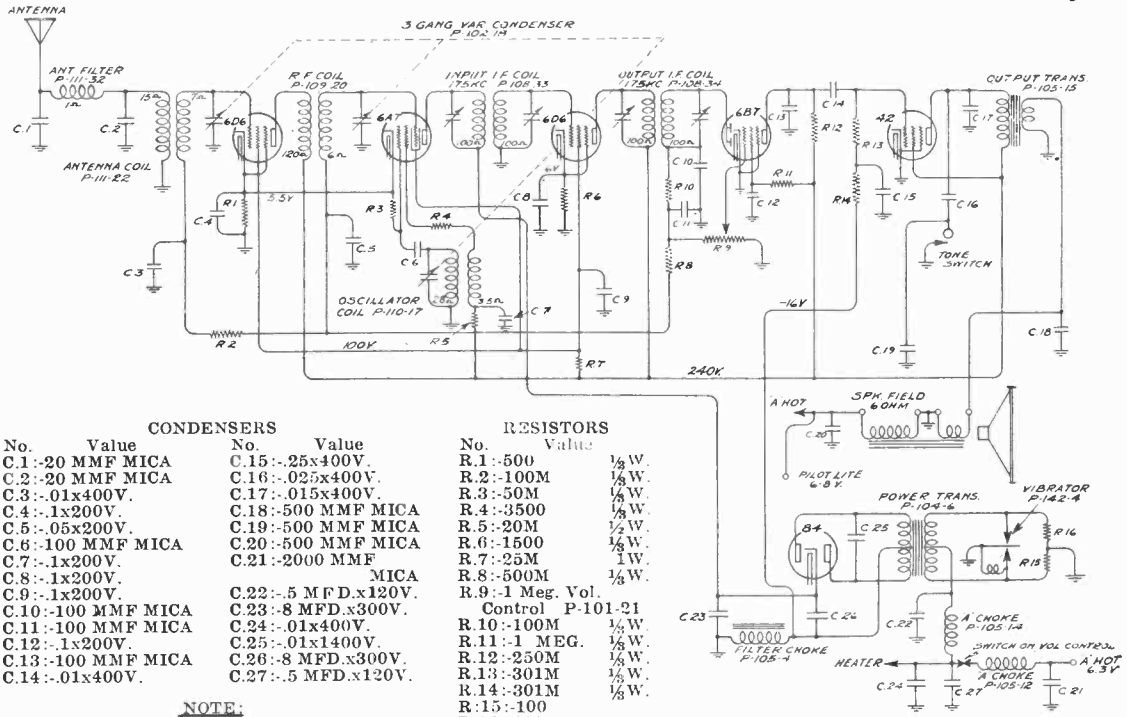
After the spark and distributor suppressors have been properly fastened the next in importance is the generator condenser (148-1), this filters a high pitched whining noise which would otherwise be heard as the motor is accelerated.

It is sometimes necessary in cars where the ignition coil is located under the dash, to use an additional capacitor (148-1) obtainable from your dealer. It must be installed between the battery side of the ignition coil and the frame of the car. Next connect capacitor (148-3) from the battery side of ammeter to frame of car. This is necessary in practically every installation and a good connection to the frame of the car is of utmost importance.

BELMONT RADIO CORP.

MODEL 680

MODEL 680
Schematic, Voltage
Socket, Trimmers



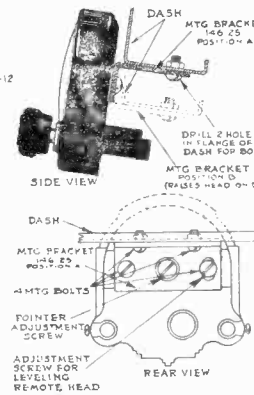
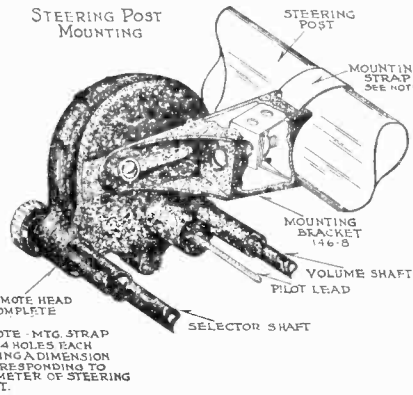
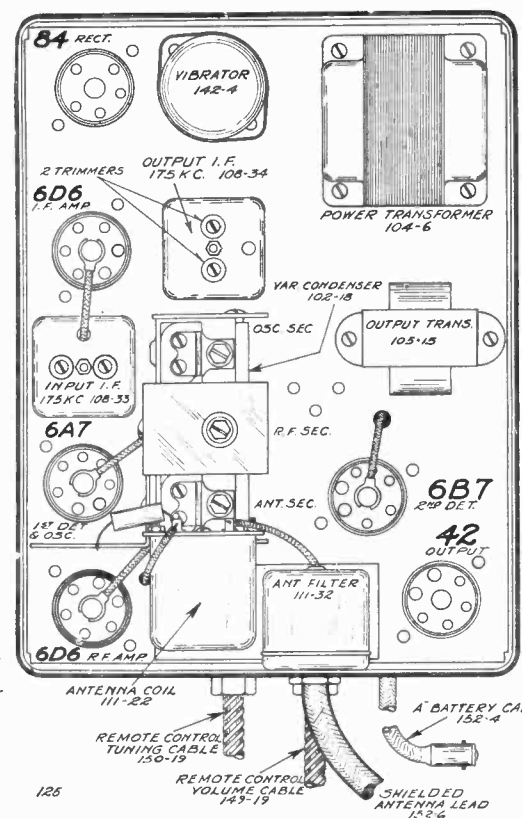
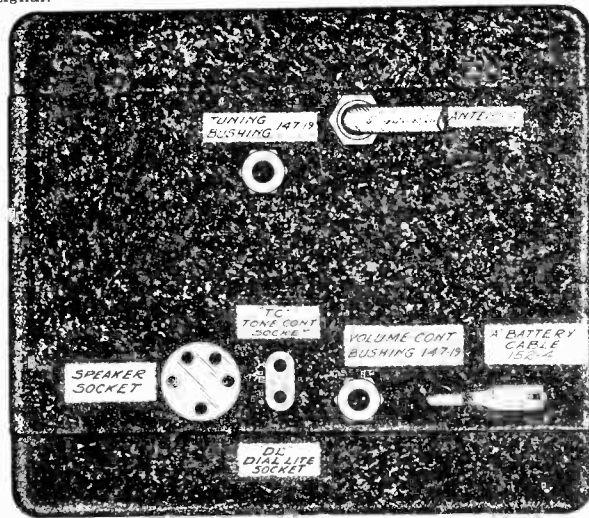
CONDENSERS		CONDENSERS	
No.	Value	No.	Value
C.1	-.20 MMF MICA	C.15	-.25x400V.
C.2	-.20 MMF MICA	C.16	-.025x400V.
C.3	-.01x400V.	C.17	-.015x400V.
C.4	-.1x200V.	C.18	500 MMF MICA
C.5	-.05x200V.	C.19	500 MMF MICA
C.6	-.100 MMF MICA	C.20	500 MMF MICA
C.7	-.1x200V.	C.21	2000 MMF MICA
C.8	-.1x200V.	C.22	-.5 MFD.x120V.
C.9	-.1x200V.	C.23	8 MFD.x300V.
C.10	-.100 MMF MICA	C.24	-.01x400V.
C.11	-.100 MMF MICA	C.25	-.01x1400V.
C.12	-.1x200V.	C.26	8 MFD.x300V.
C.13	-.100 MMF MICA	C.27	-.5 MFD.x120V.
C.14	-.01x400V.		

RESISTORS	
No.	Value
R.1	500
R.2	100M
R.3	50M
R.4	3500
R.5	20M
R.6	1500
R.7	25M
R.8	500M
R.9	1 Meg. Vol. Control P-101-21
R.10	100M
R.11	1 MEG.
R.12	250M
R.13	301M
R.14	301M
R.15	100
R.16	100

NOTE:
C.4 and C.9 are in one unit P-118-1
C.7 and C.8 are in one unit P-118-1
C.26 and C.23 are in one unit P-119-17
R.16 and R.15 are in one unit P-106-6
Numbers prefixed by letter "P" are part numbers.
Voltages taken from points indicated to chassis ground. Vol. control on full, no signal.

Serial No. 60001 and up.

IF PEAK 175 KC.



**MODEL 680
Alignment
Parts List**

BELMONT RADIO CORP.

DUMMY ANTENNAS:

The dummy antennas referred to in the following instructions are:
 "I.F. Dummy" —A .1 mfd. condenser connected in series with the test oscillator output lead.
 "Broadcast Dummy"—A 200 mmfd. condenser connected in series with the output lead of the test 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 the screen of the type 42 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:

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 175 K.C., in series with I.F. dummy antenna, to the grid cap of the type 6A7 tube.
2. Adjust trimmer condensers of both input (108-33) and output (108-34) I.F. transformers 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. and 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 end section of the three gang condenser—see top view).
3. Shift test oscillator to 1400 K.C. and pick up signal by rotating condenser and adjust R.F. (center) and antenna (front) trimmers to resonance, see top view.

- (a) Check for sensitivity at 1000, 800 and 600 K.C. by setting test oscillator to these frequencies and picking up the signal by rotating variable condenser. Under no circumstances bend plates of oscillator section, bend R.F. and antenna plates only if absolutely necessary.

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.

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. 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.

REPAIR PARTS - MODEL 680

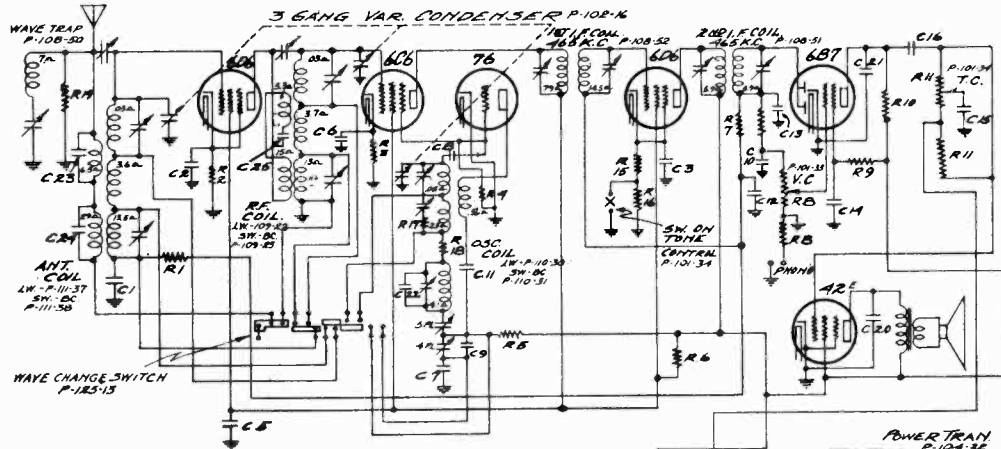
Serial No. 60001 and up

When ordering parts, always specify part and model number as well as serial number of chassis.

Part No.	Description	List Price Ea.	Part No.	Description	List Price Ea.
CONDENSERS					
	Unless otherwise listed, all single section tubular paper by-pass condensers	.25	123-1	All Sockets	.10
	Unless otherwise listed, all dual section tubular paper by-pass condensers	.50		Dome Lite Filter	.90
119-17	Dual 8 mfd. electrolytic filter condenser	2.25		Plate Antenna	3.50
148-1	.5 Mfd. Generator Condenser	.50	112-30	REMOTE CONTROL PARTS	
148-3	.5 Mfd. Ammeter Condenser	.40	112-41	Selector Control Shaft	.20
148-5	.5 Mfd. x 120 Volt Condenser	.50	112-42	Idler Gear	.15
148-6	Special Ford Ignition Coil Condenser	.60	112-85	Pointer Shaft	.05
			112-45	Volume Control Shaft	.10
			112-46	Bezel (Crystal Retainer)	.15
			112-48	Celluloid Dial Crystal	.15
			112-48	Pointer Shaft Gear	.05
			112-46	Celluloid dial	.25
			116-13	6-8 Volt. T-51 Bulb Bayonet Base	.10
105-12	"A" Choke - 28 Turns No. 12 Wire	.10	116-14	6-8 volt T-51 frosted glass bayonet lamp	.13
105-14	"A" Choke - 37 Turns No. 12 Wire	.10	116-9	Pilot Light Assembly	.45
108-33	Input I.F. Transformer Complete with Shield	1.50	116-11	Tone Control Assembly Unit Complete	.35
108-34	Output I.F. Transformer Complete with Resistors and Condensers. Mounted in Shield	2.50	131-5	Black Bakelite Remote Control Knobs	.15
109-20	R.F. Coil Complete - Less Shield	1.00	146-8	Die Cast Remote Control Mounting Bracket	.30
110-17	Oscillator Coil Complete with Bracket	.75	146-12	Steering Column Strap	.15
111-22	Antenna Coil Complete - Less Shield	1.00	146-25	Dash Mounting Bracket	.15
111-32	Antenna Filter Assembly Complete with Shield and Antenna Cable	1.50	147-3	Selector Control Bushing for 112-30 Shaft	.10
			147-4	Volume Control Bushing for 112-43 Shaft	.10
			149-25	Flexible Volume Control Cable - 24"	1.50
			160-25	Flexible Selector Control Cable - 24"	1.50
			151-7	Remote Control Head complete with Steering Column Bracket	5.00
106-6	Unless otherwise listed, all carbon resistors	.20		Dash Mounting Kit (specify make and year of car)	1.25
168-2	200 Ohm Center Tapped Resistor	.25	151-8	Special General Motors Control Head	7.00
168-3	Distributor Suppressor	.40		Dash Mounting Kits for 1935 Chevrolet and Pontiac use with 151-8 head	1.50
	Cable Type Suppressor	.40		Dash Mounting Kits for 1935 Oldsmobile for use with 151-8 head	1.75
				Vibrators can be reconditioned at a cost of \$3.00 each, if the old unit is returned.	
104-6	TRANSFORMERS			All resistors are RMA color coded - specify value and/or resistor number (per schematic diagram) and model number.	
105-4	Power Transformer	3.00		When ordering condensers, specify part number, model number and/or capacitor (per schematic diagram) and model number.	
105-15	380 Ohm Filter Choke	.85		Mica condensers are coded with an additional dot indicating tolerance:	
	Output Audio Transformer	1.50		Tolerance Percent	Color of Dot
				2 1/2%	White
				5%	Green
				10%	Blue
				15%	Yellow
				20%	Red
				More Than 20%	None.
101-21	Volume Control with Switch	1.35		All prices quoted are list and are subject to the usual trade discounts. Shipments are F.O.B. our Factory. When remitting in advance, please include postage.	
102-18	Three Gang Variable Condenser	4.00		WE CANNOT SUPPLY SPEAKER PARTS, CONES, TRANSFORMERS OR FIELDS SEPARATELY. WE CAN REPLACE OR REPAIR A DAMAGED SPEAKER FOR \$2.00 NET IF IT IS RETURNED TO OUR FACTORY TRANSPORTATION CHARGES PREPAID. PRICES SUBJECT TO CHANGE WITHOUT NOTICE.	
113-30	Two Lug Terminal Strip	.05		BRC - CHICAGO	
113-37	Terminal Strip	.05			
115-34	Antenna and R.F. Coil Shield	.15			
114-21	Speaker Chassis Only	5.00			
114-22	Ford Header speaker chassis only	5.00			
128-4	Complete Speaker Housing for 114-21	2.50			
128-5	Ford speaker housing for 114-21	2.50			
140-5	Set Case less Covers	1.00			
140-6	Covers for Above	1.25			
142-4	Plug-in Vibrator	4.50			
147-19	Flexible Cable Control Bushing	.10			
152-2	Battery Cable & Fuse Assembly	.35			
152-3	Fuse Insulating Sleeve	.05			
152-4	Chassis Battery Cable Assembly	.30			
152-6	Antenna Cable	.50			
152-8	Speaker Cable with Plug for 114-21	1.00			
152-9	Special Ford Header speaker cable and plug	1.25			
153-4	Special Speaker-Tone Control-Dial Light Socket Assembly	.25			
160-11	Mounting Studs Complete with Nut & Washer	.05			
160-1	15 Amp. Fuse (3AG-15)	.05			

BELMONT RADIO CORP.

MODEL 755
Schematic, Socket
Parts, Layout

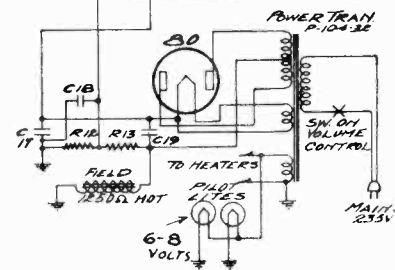


CONDENSERS

No.	Value	No.	Value
C.1	.05x200v	C.13	.00003 mica
C.2	.25x200v	C.14	1x200v
C.3	.25x200v	C.15	.01x400v
C.4		C.16	.05x400v
C.5	.25x400v	C.17	16 mfd. x350v (P-103-4)
C.6	1x200v	C.18	.25x200v
C.7	.0019 mica	C.19	14 mfd. x400v (P-103-8)
C.8	.000050 mica	C.20	.006x600v
C.9	.0005 mica	C.21	.0001 mica
C.10	.00005 mica	C.22	.0001 mica
C.11	.05x400v	C.23	2400 mica
C.12	.05x200v	C.24	1000 mica
		C.25	3600 mica

RESISTORS

R.1	100M 1/8 w
R.2	360 1/8 w
R.3	500 1/8 w
R.4	50M 1/8 w
R.5	19M 1.0w
R.6	15M 2.0w
R.7	500M 1/5w
R.8	1 meg vol. cont.
R.9	1 meg 1/5w
R.10	600M 1/2 w
R.11	300M tone control
R.12	250M 1/8 w
R.13	750M 1/5 w
R.15	360 1/8 w
R.16	30M 1/8 w
R.17	100 1/8 w
R.18	50 1/8 w
R.19	10M 1/8 w



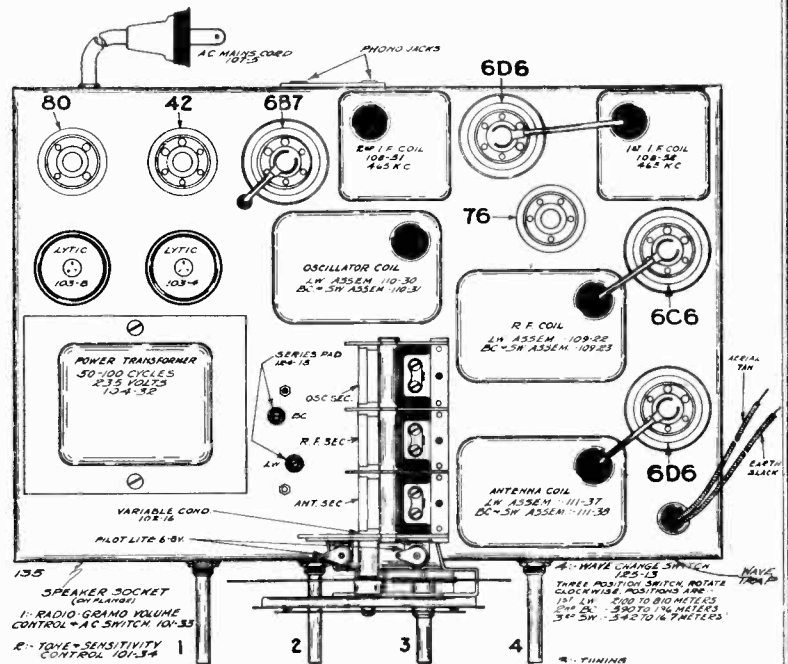
NOTE:
C.14, C. 13. In dual unit.
P.118-12 numbers prefixed by letter "P" are part Nos.
Voltages taken from points indicated to chassis ground.
Set not tuned to strong signal. Tone control clockwise.
Serial No. 5G131980A and up
143

I. F. Frequency — 465 Kilocycles

TUNING RANGE:

- Long Wave Band 810-2100 Meters.
- Broadcast Band 196-590 Meters.
- Short Wave Band 16.7-54.5 Meters.

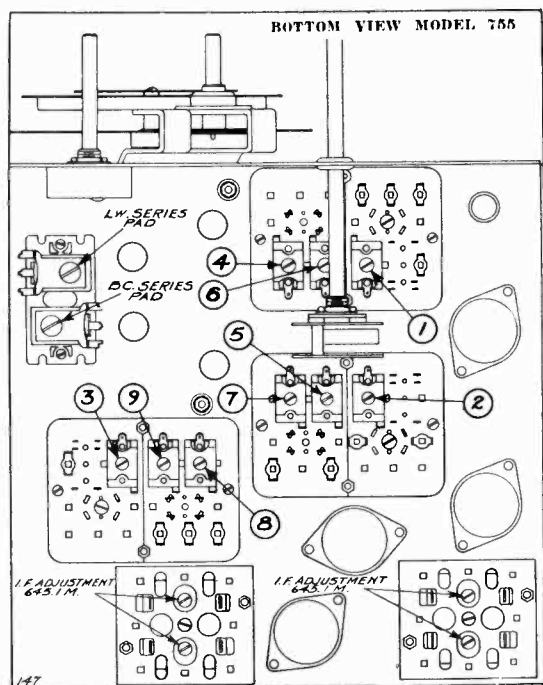
Part No.	Description
SPEAKERS	
114-13	Six Inch Dynamic
114-17	Eight Inch Dynamic
MISCELLANEOUS	
101-33	Volume Control and Switch
101-34	Wizard Control and Switch
102-16	Three Gang Variable Condenser
TRANSFORMERS	
104-32	50/60 Cycle—235 Volt Primary
104-33	40 Cycle—235 Volt Primary
104-34	25 Cycle—235 Volt Primary
104-35	Universal—40 Cycle Primary
104-36	Universal—25 Cycle Primary
COILS	
108-50	Wave Trap Coil and Trimmer Complete
108-51	Output I.F. Transformer Complete—Less Can
108-52	Input I.F. Transformer Complete—Less Can
109-22	Long Wave R.F. Coil Complete—Less Can
109-23	Broadcast and Short Wave R.F. Coil Complete—Less Can
110-30	Long Wave Oscillator Coil Complete—Less Can
110-31	Broadcast and Short Wave Oscillator Coil Complete—Less Can
111-37	Long Wave Antenna Coil Complete—Less Can
111-38	Broadcast and Short Wave Antenna Coil Complete—Less Can



Serial No. 5G131980A and up

MODEL 755
Trimmers
Alignment

BELMONT RADIO CORP.



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: (Broadcast 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 (465K.C.) (645.1 Meters)

Each of these I.F. transformers have two adjustments, both of which are accessible from the underside of chassis (see bottom view).

1. With volume control full on, the extreme right of its rotation, and with wave changing switch in the broadcast position, center of its rotation, and with variable condenser set to approximately 550 meters, make the following adjustments:

- Connect external oscillator set at 645.1 meters, in series with "Dummy 1", to the control grid cap of the type 6D6 tube, located between the two I.F. transformers, and adjust the output I.F. transformer to resonance.
- With "Dummy 1" still connected, move oscillator output clip from grid of 6D6 to grid cap to 6C6 and adjust input I.F. transformer to resonance.
- With oscillator still connected to 6C6, re-adjust output I.F. transformer.
- Disconnect oscillator from 6C6 and connect oscillator through "Dummy 2" to antenna lead (tan), adjust wave trap trimmer for a minimum response. (Adjustment located on right front chassis apron).

LONG WAVE BAND ALIGNMENT:

(810-2100 Meters)

1. With wave changing switch in the long wave position, extreme left of its rotation, and with external oscillator set at 2,000

meters and connected in series with "Dummy 2" to the tan antenna and black ground lead, make the following adjustments:

- Adjust long wave series pad 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 electrolytic condenser. See top view.
- Re-set external oscillator and move dial pointer to 855 m. and adjust oscillator (adjustment number 3), R.F. (adjustment number 2) and antenna (adjustment number 1) to resonance. See bottom view for location of these adjustments.
- 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 OSCILLATOR IN FREQUENCY AND ABOVE IN WAVELENGTHS.

SHORT WAVE BAND ALIGNMENT:

(16.7-54.5 Meters)

1. With wave changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17.7 m., and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

- Move dial pointer to 17.7 meters and adjust short wave oscillator (adjustment number 8), short wave R.F. (adjustment number 7) and short wave antenna (adjustment number 6) to resonance.
- Re-set external oscillator to 50 meters and pick up signal by rotating variable condenser and check for sensitivity.

INTERMEDIATE OR BROADCAST BAND ALIGNMENT:

(196-590 Meters)

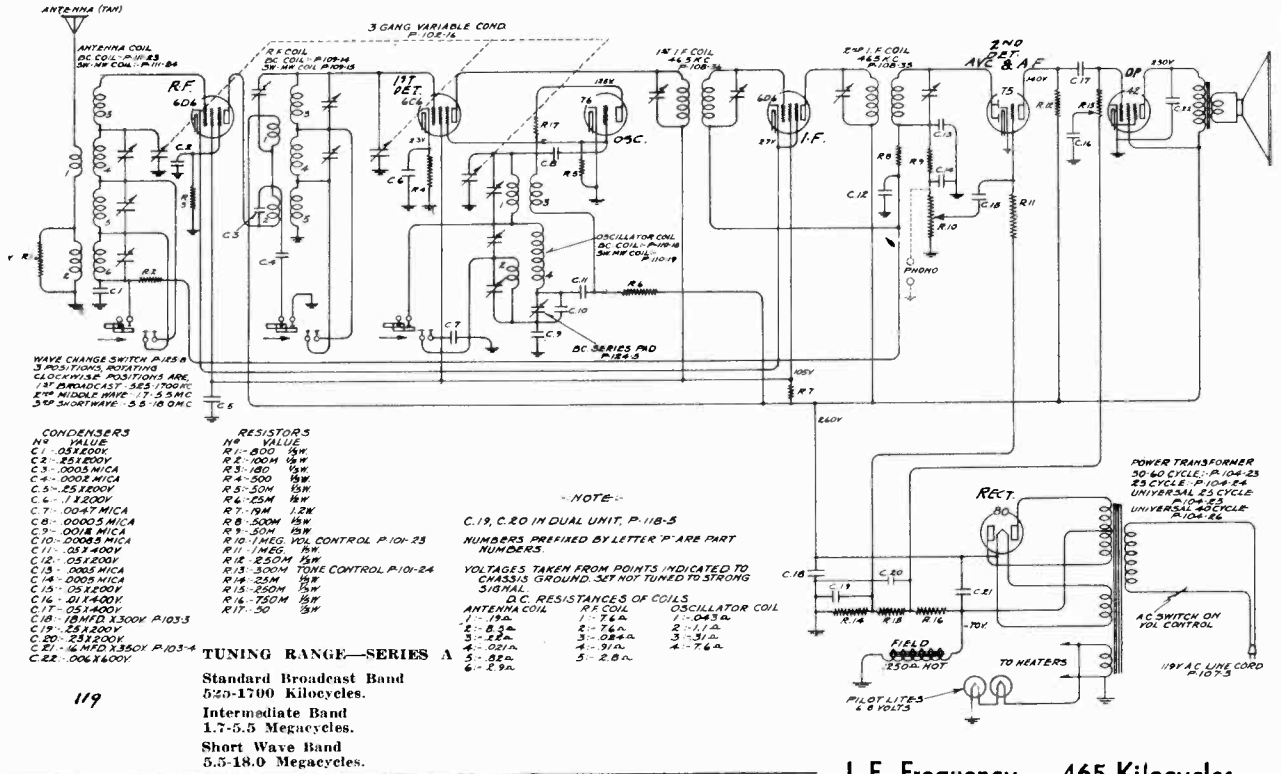
1. With wave changing switch in the intermediate wave position, center of its rotation, and with external oscillator set at 545 meters and connected in series with "Dummy 2" to the tan antenna and black ground lead, make the following adjustments:

- Rotate variable condenser to approximately 545 meters tune in oscillator signal and adjust B.C. series pad (see top view) to resonance. Slowly rock condenser to and fro while making this adjustment to be sure maximum output is obtained.
- Set external oscillator at 231 meters, rotate condenser, pick up signal and adjust intermediate wave R.F. (adjustment number 5), intermediate wave antenna (adjustment number 4) and intermediate wave oscillator (adjustment number 9) to resonance.
- Re-check long wave alignment and if it is found necessary to re-adjust either R.F. or antenna trimmers, repeat the 17.7 meter short wave and 231 meter broadcast adjustments.

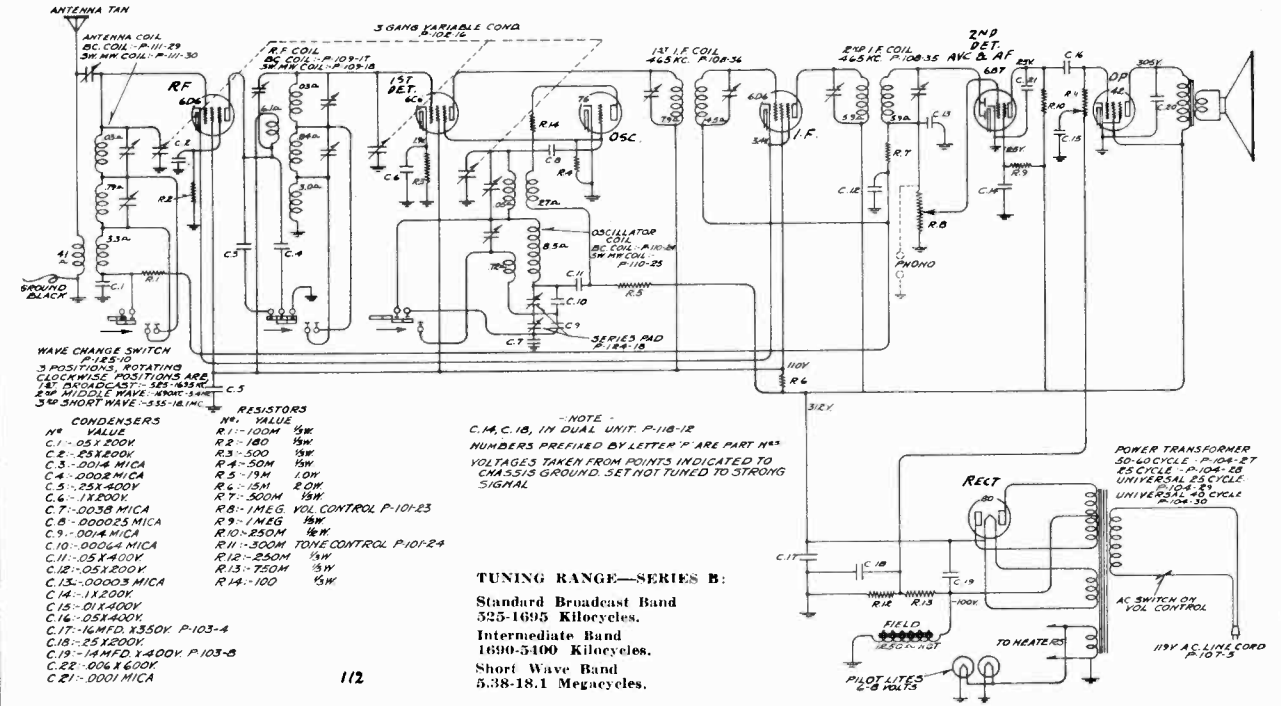
BELMONT RADIO CORP.

MODEL 777
Series A & B
Schematics
Voltage

SERIES A



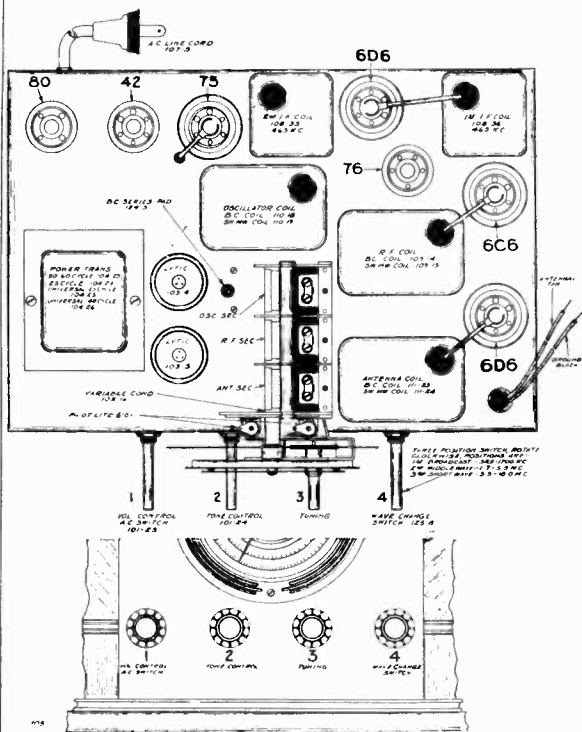
SERIES B



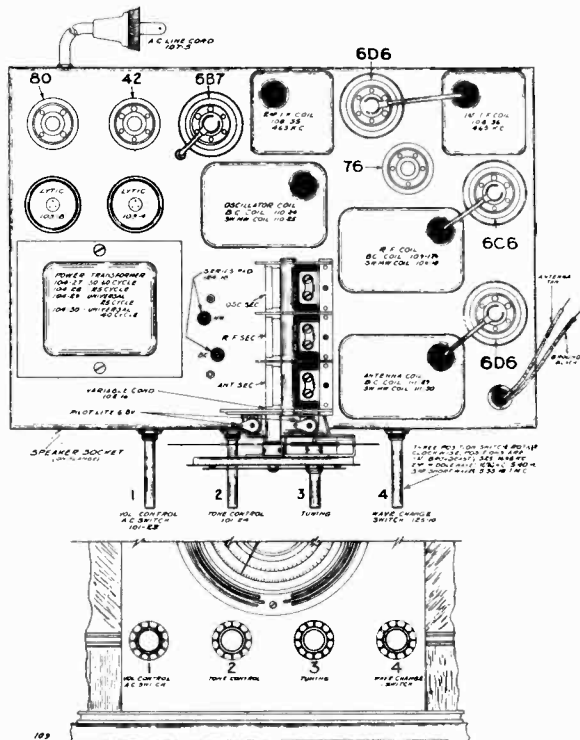
MODEL 777
Series A & B
Trimmers, Socket
Parts, Layouts

BELMONT RADIO CORP.

TOP VIEW - SERIES A

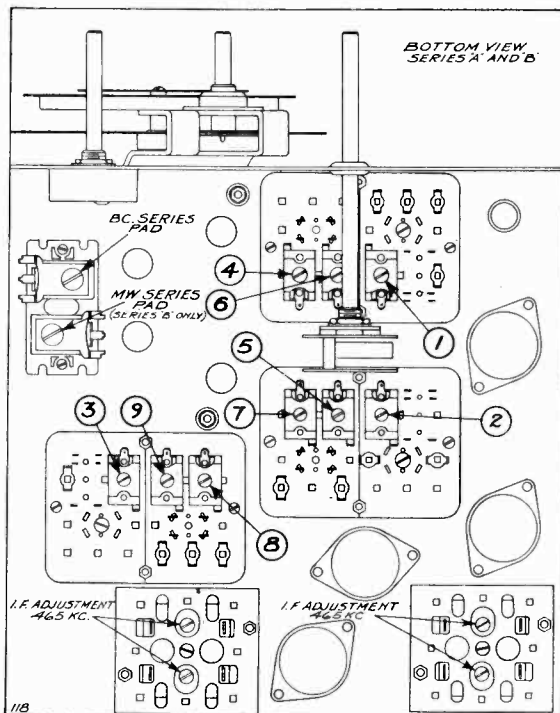


TOP VIEW - SERIES B



REPAIR PARTS LIST - MODEL 777
SERIES "A" & "B"

Parts Used Only In Ser. A	Parts Used Only In Ser. B	DESCRIPTION	List Price Each	MISCELLANEOUS
		CONDENSERS		101-23 101-23 Volume Control and Switch
		Unless Otherwise Listed—All Molded Mica	\$.35	101-24 101-24 Tone Control
		Unless Otherwise Listed—All Single Section Tubular Paper By-Pass	.25	102-16 102-16 Three Gang Variable Condenser
		Unless Otherwise Listed—All Dual Section Tubular Paper By-Pass	.50	107-5 107-5 Line Cord and Plug
103-3	Not Used.	18 Mfd. x 300 V. Electrolytic	1.35	
103-4	103-4	16 Mfd. x 350 V. Electrolytic	1.35	
Not Used.	103-8	14 Mfd. x 400 V. Electrolytic	1.35	
129-20	Not Used.	.0047 Mica—Type MH + or - 5%	.50	
Not Used.	129-29	.0038 Mica—Type MW + or - 2 1/4%	.50	
		RESISTORS		
Not Used.	130-61	Unless Otherwise Listed—All Resistors	.20	
		15M Ohm—2 Watt + or - 20%—180 V.	.40	
		COILS		
108-35	108-35	Output I.F. Coil Assembly Complete—Less Can	1.50	
108-36	108-36	Input I.F. Coil Assembly Complete—Less Can	1.50	
109-14	Not Used.	Broadcast R.F. Coil Assembly Complete—Less Can	1.00	
109-15	Not Used.	Mid-Wave & Short Wave R.F. Coil Assembly Complete—Less Can	1.50	
Not Used.	109-17	Broadcast R.F. Coil Assembly Complete—Less Can	.70	
Not Used.	109-18	Mid-Wave & Short Wave R.F. Coil Assembly Complete—Less Can	1.50	
110-18	Not Used.	Broadcast Oscillator Coil Assembly Complete—Less Can	.50	
110-19	Not Used.	Mid-Wave & Short Wave Oscillator Coil Assembly Complete—Less Can	1.25	
Not Used.	110-24	Broadcast Oscillator Coil Assembly Com.—Less Can	.75	
Not Used.	110-25	Mid-Wave & Short Wave Oscillator Coil Assembly Complete—Less Can	1.50	
111-23	Not Used.	Broadcast Antenna Coil Assembly Com.—Less Can	1.00	
111-24	Not Used.	Mid-Wave & Short Wave Antenna Coil Assembly Complete—Less Can	1.50	
Not Used.	111-29	Broadcast Antenna Coil Assembly Com.—Less Can	1.00	
Not Used.	111-30	Mid-Wave & Short Wave Antenna Coil Assembly Complete—Less Can	1.50	
		TRANSFORMERS		
104-23	Not Used.	50/60 Cycle Power Transformer	3.50	
104-24	Not Used.	25 Cycle Power Transformer	5.00	
104-25	Not Used.	Universal—25 Cycle Primary	7.50	
104-26	Not Used.	Universal—40 Cycle Primary	6.00	
Not Used.	104-27	50/60 Cycle Power Transformer	4.50	
Not Used.	104-28	25 Cycle Power Transformer	7.00	
Not Used.	104-29	Universal—25 Cycle Primary	7.50	
Not Used.	104-30	Universal—40 Cycle Primary	7.00	
		SPEAKERS		
114-13	114-13	Six Inch Speaker	6.00	
114-17	114-17	Eight Inch Speaker	6.50	
114-18	114-18	Ten Inch Speaker	8.00	



MODEL 777
Series A & B
Alignment

BELMONT RADIO CORP.

NOTE: IN SERIES B THE TYPE 75 WAS REPLACED BY TYPE 6B7. DUPLEX DIODE PENTODE AS A SECOND DETECTOR, A.V.C. AND AUDIO.

Series A and B chassis are serially numbered on the back flange of the chassis, series A beginning with number "5B104021A" and up, series B chassis beginning with number "5D114175B" and up. Series A and B may be identified by the letter "A" and "B" at the end of the serial numbers.

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 40 and 60 cycles and with primary taps for 108, 125, 150, 220 and 250 volts (see instructions) and also sometimes equipped with 25 cycle transformers with 105-115 volt or 220 volt primaries, not universals.

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 diagrams of series A and B.

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 119 volts on the primary of the power transformer.

ALIGNING INSTRUCTIONS

Dummy Antennas

The following dummy antennas are used in aligning both series A and B 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 screen terminals of the type 42 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.

ALIGNMENT PROCEDURE SERIES A ONLY

The following adjustments to be made after the I.F.'s have been aligned as explained above.

BROADCAST BAND ALIGNMENT:

1. With wave changing switch in the broadcast position, extreme left of its rotation, and with external oscillator set at 550 kilocycles and connected in series with "Dummy 2" to the tan antenna and black ground lead, make the following adjustments:

- Adjust broadcast series pad 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 electrolytic condenser. See top view.
- Re-set external oscillator to 1500 K.C., move dial pointer to 1500 K.C. and adjust oscillator (adjustment number 3), R.F. (adjustment number 2) and antenna (adjustment number 1) to resonance. See bottom view for location of these adjustments.
- 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 wave 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:

- Move dial pointer to 17 megacycles and adjust short wave oscillator (adjustment number 8), short wave R.F. (adjustment number 7) and short wave antenna (adjustment number 6) to resonance.
- Re-set external oscillator to 6 megacycles and pick up signal by rotating variable condenser and check for sensitivity.

INTERMEDIATE BAND ALIGNMENT:

1. With wave changing switch in the intermediate position, center of its rotation, and with external oscillator set at 5 megacycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

- Move dial pointer to 5 megacycles and adjust intermediate wave oscillator (adjustment number 9), intermediate wave R.F. (adjustment number 5) and intermediate antenna (adjustment number 4) to resonance.
- Re-set external oscillator to 1800 K.C. and pick up signal by rotating variable condenser and check for sensitivity.
- Re-check broadcast sensitivity as outlined under "Broadcast Band Alignment".

Series "A" chassis have no intermediate band series oscillator pad adjustment.

ALIGNMENT PROCEDURE SERIES B ONLY

The following adjustments to be made after the I.F.'s have been aligned as explained above.

BROADCAST BAND ALIGNMENT:

1. With wave 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:

- Adjust broadcast series pad 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 electrolytic condenser. See top view.
- Re-set external oscillator to 1400 K.C., move dial pointer to 1400 K.C. and adjust oscillator (adjustment number 3), R.F. (adjustment number 2) and antenna (adjustment number 1) to resonance. See bottom view for location of these adjustments.
- 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 wave 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:

- Move dial pointer to 17 megacycles and adjust short wave oscillator (adjustment number 8), short wave R.F. (adjustment number 7) and short wave antenna (adjustment number 6) to resonance.
- Re-set external oscillator to 6 megacycles and pick up signal by rotating variable condenser and check for sensitivity.

INTERMEDIATE BAND ALIGNMENT:

1. With wave changing switch in the intermediate wave position, center of its rotation, and with external oscillator set at 1800 K.C. and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

- Rotate variable condenser to approximately 1800 K.C., tune in oscillator signal and adjust M.W. series pad (see top view) to resonance. Slowly rock condenser to and fro while making this adjustment to be sure maximum output is obtained.
- Set external oscillator at 5 M.C., rotate condenser, pick up signal and adjust intermediate wave R.F. (adjustment number 5), intermediate wave antenna (adjustment number 4) and intermediate wave oscillator (adjustment number 9) to resonance.
- 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. intermediate wave adjustments.

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

Series A and B.

Series A—Part No. 108-35 Output I.F. Transformer

Series A—Part No. 108-36 Input I.F. Transformer

Series B—Part No. 108-35 Output I.F. Transformer

Series B—Part No. 108-36 Input I.F. Transformer

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

1. With volume control full on, the extreme right of its rotation, and with wave changing switch in the broadcast position, extreme left of its rotation, and with variable condenser set to approximately 1400 kilocycles, make the following adjustments:

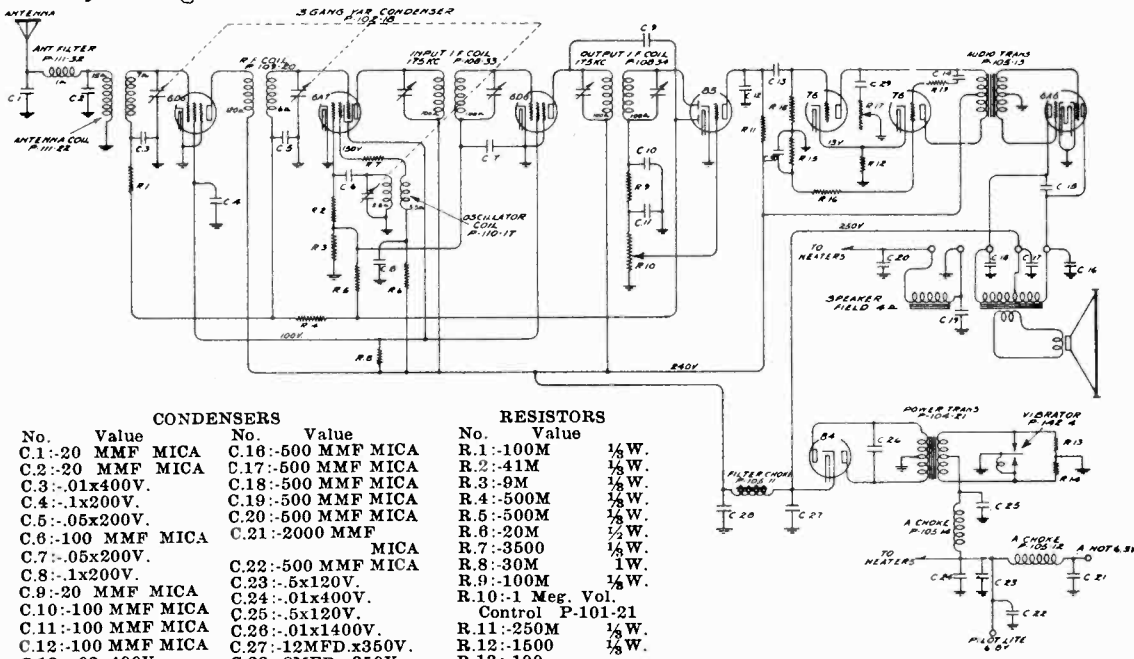
- Connect external oscillator set at 465 kilocycles, in series with "Dummy 1", to the control grid cap of the type 6D6 tube, located between the two I.F. transformers, and adjust the output I.F. transformer to resonance.
- With "Dummy 1" still connected, move oscillator output clip from grid of 6D6 to grid cap to 6C6 and adjust input I.F. transformer to resonance.
- With oscillator still connected to 6C6, re-adjust output I.F. transformer.

MODEL 880

Series A & B

Schematics, Voltage

BELMONT RADIO CORP.



CONDENSERS

No.	Value	No.	Value
C.1:-20 MMF MICA		C.16:-500 MMF MICA	
C.2:-20 MMF MICA		C.17:-500 MMF MICA	
C.3:-.01x400V.		C.18:-500 MMF MICA	
C.4:-.1x200V.		C.19:-500 MMF MICA	
C.5:-.05x200V.		C.20:-500 MMF MICA	
C.6:-100 MMF MICA		C.21:-2000 MMF MICA	
C.7:-.05x200V.		C.22:-500 MMF MICA	
C.8:-.1x200V.		C.23:-.5x120V.	
C.9:-20 MMF MICA		C.24:-.01x400V.	
C.10:-100 MMF MICA		C.25:-.5x120V.	
C.11:-100 MMF MICA		C.26:-.01x1400V.	
C.12:-100 MMF MICA		C.27:-12MFD.x350V.	
C.13:-.02x400V.		C.28:-8MFD.x350V.	
C.14:-.02x400V.		C.29:-.025x400V.	
C.15:-.006x600V.		C.30:-.01x400V.	

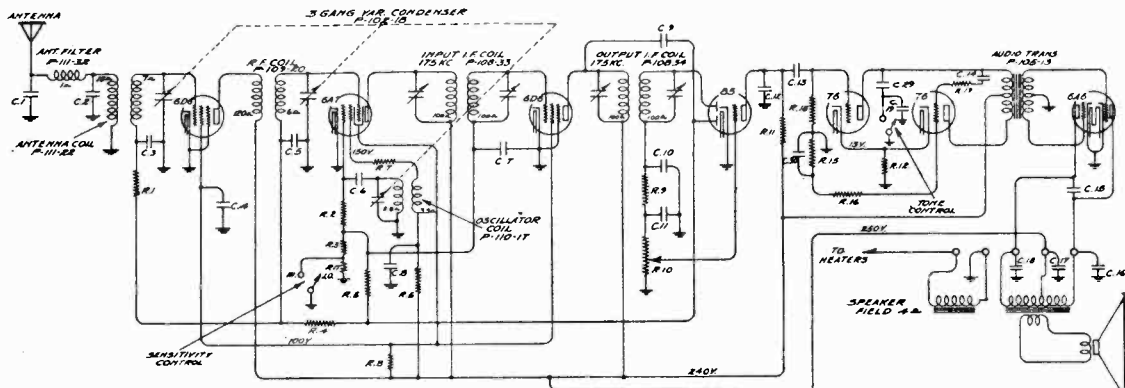
RESISTORS

No.	Value	Power
R.1:-100M		1/4 W.
R.2:-41M		1/4 W.
R.3:-9M		1/4 W.
R.4:-500M		1/4 W.
R.5:-500M		1/4 W.
R.6:-20M		1/4 W.
R.7:-3500		1/4 W.
R.8:-30M		1 W.
R.9:-100M		1/4 W.
R.10:-1 Meg. Vol. Control P-101-21		
R.11:-250M		1/4 W.
R.12:-1500		1/4 W.
R.13:-100		1/4 W.
R.14:-100		1/4 W.
R.15:-75M		1/4 W.
R.16:-90M		1/4 W.
R.17:-Switch		
R.18:-500M		1/4 W.
R.19:-1 Meg.		1/4 W.

NOTE:
 C.4 and C.8 are in one unit P-118-1
 C.27 and C.28 are in one unit P-119-18
 R.13 and R.14 are in one unit P-108-6
 Numbers prefixed by letter "P" are part numbers.
 Voltages taken from points indicated to chassis ground. Vol. control on full, no signal.

MODEL 880 Series A

IF PEAK 175 KC.



CONDENSERS

No.	Value	No.	Value
C.1:-20 MMF MICA		C.16:-500 MMF MICA	
C.2:-20 MMF MICA		C.17:-500 MMF MICA	
C.3:-.01x400V.		C.18:-500 MMF MICA	
C.4:-.1x200V.		C.19:-500 MMF MICA	
C.5:-.05x200V.		C.20:-.5MFD.x120V.	
C.6:-100 MMF MICA		C.21:-2000 MMF MICA	
C.7:-.05x200V.		C.22:-500 MMF MICA	
C.8:-.1x200V.		C.23:-.5x120V.	
C.9:-20 MMF MICA		C.24:-.01x400V.	
C.10:-100 MMF MICA		C.25:-1.0MFD.x120V.	
C.11:-100 MMF MICA		C.26:-.01x1400V.	
C.12:-100 MMF MICA		C.27:-12MFD.x350V.	
C.13:-.02x400V.		C.28:-8MFD.x350V.	
C.14:-.02x400V.		C.29:-.025x400V.	
C.15:-.006x600V.		C.30:-.01x400V.	

RESISTORS

No.	Value	Power
R.1:-100M		1/4 W.
R.2:-41M		1/4 W.
R.3:-9M		1/4 W.
R.4:-500M		1/4 W.
R.5:-500M		1/4 W.
R.6:-20M		1/4 W.
R.7:-3500		1/4 W.
R.8:-30M		1 W.
R.9:-100M		1/4 W.
R.10:-250M ohms Vol Control P-101-21		
R.11:-250M		1/4 W.
R.12:-1500		1/4 W.
R.13:-100		1/4 W.
R.14:-100		1/4 W.
R.15:-75M		1/4 W.
R.16:-90M		1/4 W.
R.17:-4M		1/4 W.
R.18:-500M		1/4 W.
R.19:-1 Meg.		1/4 W.

NOTE:
 C.4 and C.8 are in one unit P-118-1
 C.27 and C.28 are in one unit P-119-18
 R.13 and R.14 are in one unit P-108-6
 Numbers prefixed by letter "P" are part numbers.
 Voltages taken from points indicated to chassis ground. Vol. control on full, no signal.

IF PEAK 175 KC.

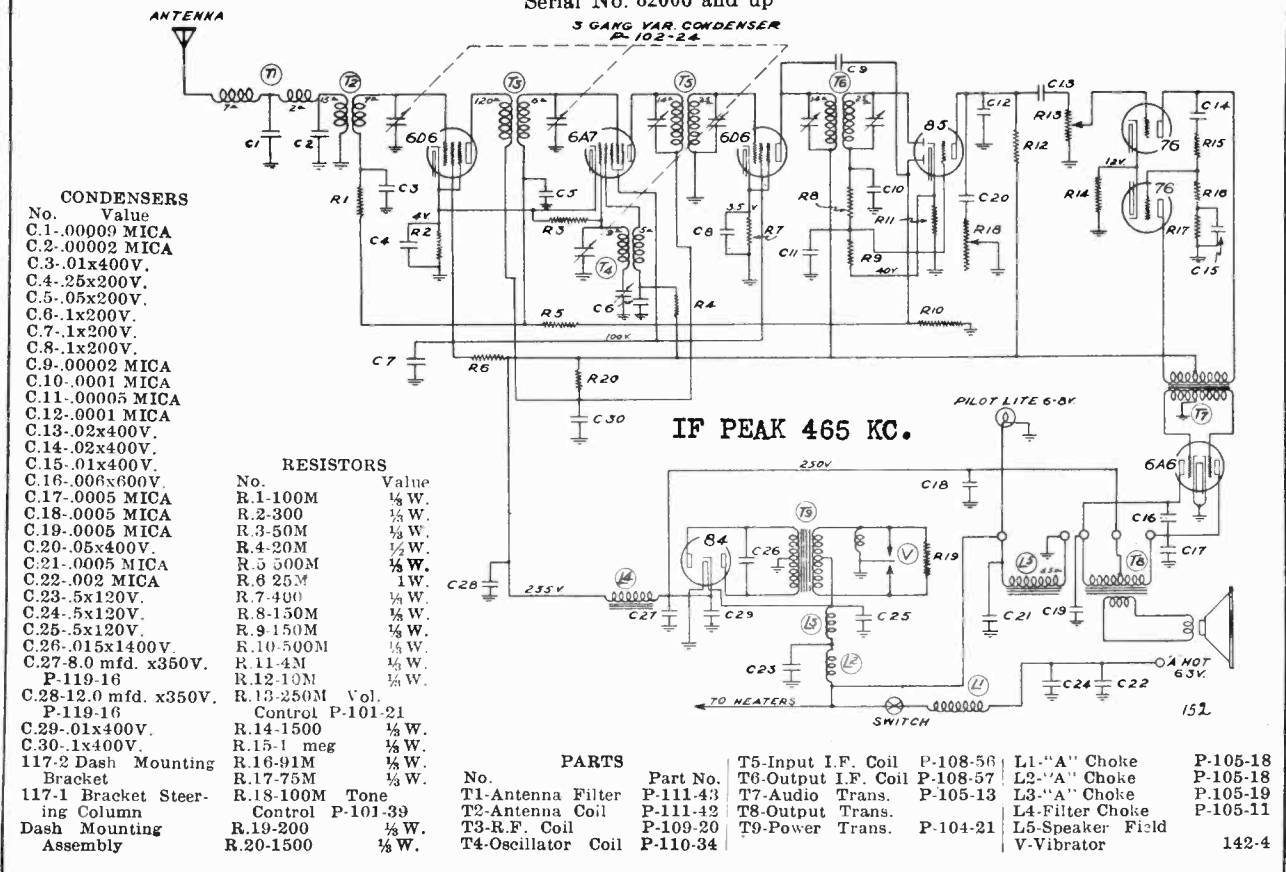
Model 880 Series B

Serial No. 80001 and up

BELMONT RADIO CORP.

MODEL 880
Series C
Schematic, Voltage
Data

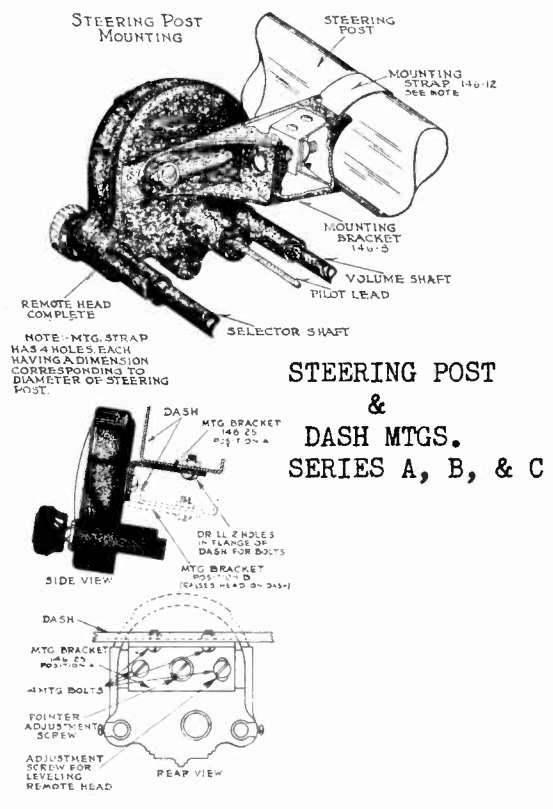
Model 880 Series C
Serial No. 82006 and up



- CONDENSERS**
- | No. | Value |
|-------|-----------------|
| C.1. | .00009 MICA |
| C.2. | .00002 MICA |
| C.3. | .01x400V. |
| C.4. | .25x200V. |
| C.5. | .05x200V. |
| C.6. | .1x200V. |
| C.7. | .1x200V. |
| C.8. | .1x200V. |
| C.9. | .00002 MICA |
| C.10. | .0001 MICA |
| C.11. | .00005 MICA |
| C.12. | .0001 MICA |
| C.13. | .02x400V. |
| C.14. | .02x400V. |
| C.15. | .01x400V. |
| C.16. | .006x600V |
| C.17. | .0005 MICA |
| C.18. | .0005 MICA |
| C.19. | .0005 MICA |
| C.20. | .05x400V. |
| C.21. | .0005 MICA |
| C.22. | .002 MICA |
| C.23. | .5x120V. |
| C.24. | .5x120V. |
| C.25. | .5x120V. |
| C.26. | .015x1400V |
| C.27. | 8.0 mfd. x350V. |
- RESISTORS**
- | No. | Value | Wattage |
|------|-------------------|----------|
| R.1 | 100M | 1/4 W. |
| R.2 | 300 | 1/4 W. |
| R.3 | 50M | 1/4 W. |
| R.4 | 20M | 1/4 W. |
| R.5 | 500M | 1/4 W. |
| R.6 | 25M | 1W. |
| R.7 | 400 | 1/4 W. |
| R.8 | 150M | 1/4 W. |
| R.9 | 150M | 1/4 W. |
| R.10 | 500M | 1/4 W. |
| R.11 | 4M | 1/4 W. |
| R.12 | 10M | 1/4 W. |
| R.13 | 250M Vol. Control | P-101-21 |
| R.14 | 1500 | 1/4 W. |
| R.15 | 1 meg | 1/4 W. |
| R.16 | 91M | 1/4 W. |
| R.17 | 75M | 1/4 W. |
| R.18 | 100M Tone Control | P-101-39 |
| R.19 | 200 | 1/4 W. |
| R.20 | 1500 | 1/4 W. |

PARTS

No.	Part No.	Value	Part No.	Value
T5	Input I.F. Coil	P-108-56	L1	"A" Choke P-105-18
T6	Output I.F. Coil	P-108-57	L2	"A" Choke P-105-18
T7	Audio Trans.	P-105-13	L3	"A" Choke P-105-19
T8	Output Trans.		L4	Filter Choke P-105-11
T9	Power Trans.	P-104-21	L5	Speaker Field 142-4
V	Vibrator			



Its tube complement is as follows: **SERIES C**

- 1 Type 6D6—remote cut-off pentode as an R.F. amplifier.
- 1 Type 6A7—electron coupled oscillator as first detector and converter.
- 1 Type 6D6—remote cut-off pentode and I.F. amplifier (465 K.C.)
- 1 Type 85 —duplex diode triode second detector and A.V.C.
- 2 Type 76 —triodes, push-pull first audio.
- 1 Type 6A6—class B output.
- 1 Type 84 —high vacuum rectifier.

- ACCESSORIES:**
- The carton of accessories packed with this set contains the following:
- 1—No. 152-2 plug-in battery cable.
 - 1—No. 149-25 flexible volume control cable (slotted fitting).
 - 1—No. 150-25 flexible selector cable (key fitting).
 - 2—No. 154-2 set screws for 147-19 bushings.
 - 2—No. 160-11 3" x 1/8" carriage bolts and nuts for mounting set to bulk head.
 - 2—No. 134-1—Iron washers.
 - 2—No. 134-2—Lockwashers.
 - 1—No. 168-2—Distributor type suppressor.
 - 1—No. 148-1 generator condenser.
 - 1—No. 148-3 ammeter condenser.
 - 1—No. 117-1 Steering column bracket.
 - 1—No. 122-6 remote control head complete with 107-8 and 116-13.
 - 1—No. 152-3 Fuse insulating sleeve.
 - 1—No. 169-1 15 amp. fuse.

GENERATOR INTERFERENCE:

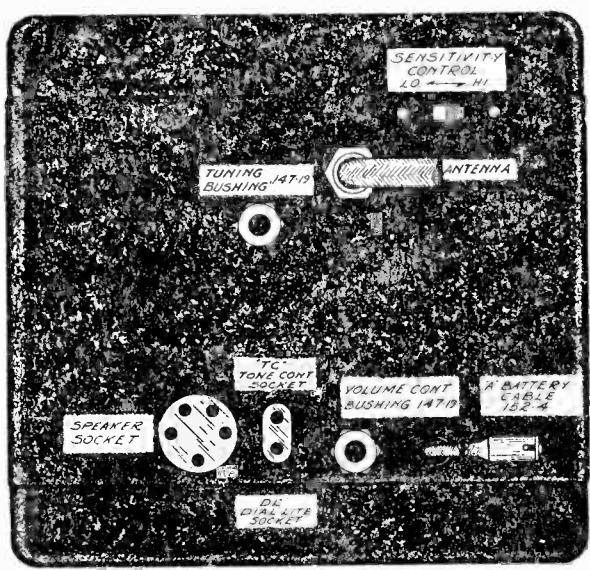
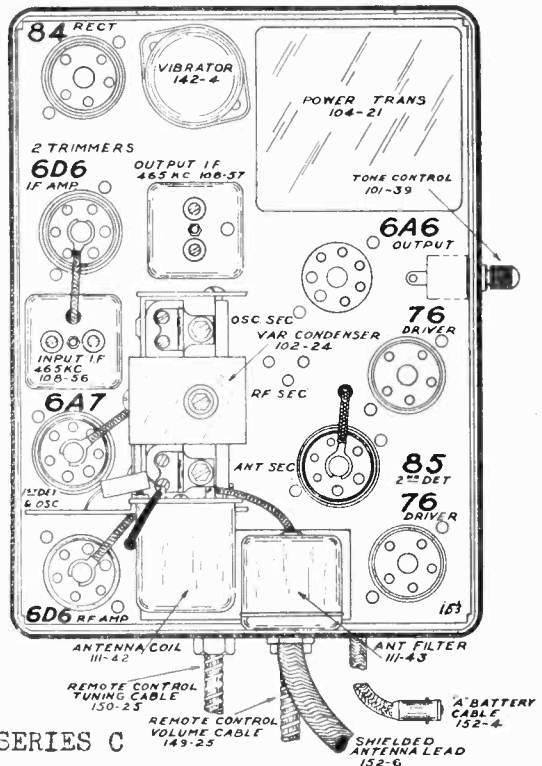
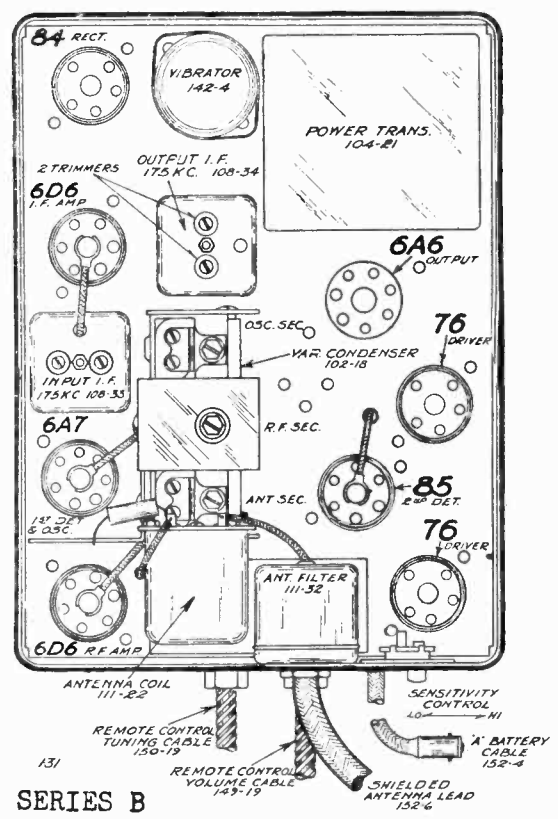
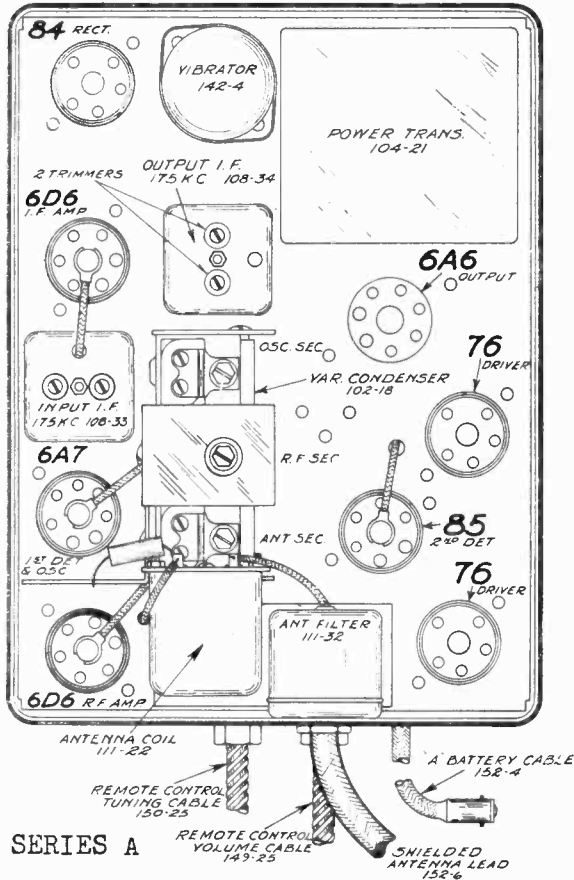
Remove the generator cutout mounting screw and fasten the condenser (148-1) bracket on the generator cutout mounting lug. Replace the cutout mounting screw and tighten down securely. Connect the condenser lead to the battery terminal of the cutout. The generator condenser is absolutely necessary as it is used to eliminate a high pitched whining noise which would otherwise be heard as the motor is accelerated.

MODEL 880

Series A,B,C

Socket, Trimmers

BELMONT RADIO CORP.



Arrangement of Series A & C is similar to Series B, except that Series A & C have no Sensitivity Control Switch

BELMONT RADIO CORP.

MODEL 880
Series A,B,C
Alignment,Parts

DUMMY ANTENNAS:

The dummy antennas referred to in the following instructions are:
"I.F. Dummy"—A .1 mfd. condenser connected in series with the test oscillator output lead.
"Broadcast Dummy"—A 200 mmfd. condenser connected in series with the output lead of the test 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 two plates of the type 6A6 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: Series A & B

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 175 K.C., in series with I.F. dummy antenna, to the grid cap of the type 6A7 tube.
2. Adjust trimmer condensers of both input (108-33) and output (108-34) I.F. transformers 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. and 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 end section of the three gang condenser—see top view).
3. Shift test oscillator to 1400 K.C. and pick up signal by rotating condenser and adjust R.F. (center) and antenna (front) trimmers to resonance, see top view.
 - (a) Check for sensitivity at 1000, 800 and 600 K.C. by setting test oscillator to these frequencies and picking up the signal by rotating variable condenser. Under no circumstances bend plates of oscillator section, bend R.F. and antenna plates only if absolutely necessary.

I.F. ALIGNMENT: Series 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 the grid cap of the type 6A7 tube.
2. Adjust trimmer condensers of both input (108-56) and output (108-57) I.F. transformers 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. and 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 end section of the three gang condenser—see top view).

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.

3. Shift test oscillator to 1400 K.C. and pick up signal by rotating condenser and adjust R.F. (center) and antenna (front) trimmers to resonance, see top view.
4. Re-set external oscillator to 600 K.C. and adjust series pad to resonance, rotate condenser and move dial pointer to 600 K.C. by gently rocking condenser to and fro. Pick up oscillator signal while adjusting series pad to resonance. This adjustment is accessible from the bottom of the chassis.
 - (a) Check for sensitivity at 1000, 800 and 600 K.C. by setting test oscillator to these frequencies and picking up the signal by rotating variable condenser. Under no circumstances bend plates of oscillator section, bend R.F. and antenna plates only if absolutely necessary.

SERIES A & B REPAIR PARTS - MODEL 880

Part No.	Description	List Price Ea.
CONDENSERS		
	Unless otherwise listed, all single section tubular paper by-pass condensers	.25
	Unless otherwise listed, all dual section tubular paper by-pass condensers	.50
	Unless otherwise listed, all molded mica condensers	.25
119-10	8-12 Mfd. - 350 Volt Electrolytic Filter Condenser	2.50
148-1	.5 Mfd. Generator Condenser	.40
148-3	.5 Mfd. Ammeter Condenser	.50
148-5	.5 Mfd. x 120 Volt Condenser	.50
148-6	Special Ford Ignition Coil Condenser	.60
COILS		
105-12	"A" Choke - 28 Turns No. 12 Wire	.10
105-14	"A" Choke - 37 Turns No. 12 Wire	.10
108-33	Input I.F. Transformer Complete with Shield	1.60
108-34	Output I.F. Transformer Complete with Resistors and Condensers. Mounted in Shield	2.50
109-20	R.F. Coil Complete - Less Shield	1.00
110-17	Oscillator Coil Complete with Bracket	.75
111-22	Antenna Coil Complete - Less Shield	1.00
111-32	Antenna Filter Assembly Complete with Shield and Antenna Cable	1.50
RESISTORS		
	Unless otherwise listed, all carbon resistors	.20
106-6	200 Ohm Center Tapped Resistor	.25
168-2	Distributor Suppressor	.40
168-3	Cable Type Suppressor	.40
TRANSFORMERS		
104-21	Power Transformer	4.00
105-11	380 Ohm Filter Choke	.85
105-13	Input Audio Transformer	1.75
MISCELLANEOUS		
101-21	Volume Control with Switch	1.35
102-18	Three Gang Variable Condenser	4.00
113-30	Two Lug Terminal Strip	.05
113-38	Terminal Strip	.05
115-34	Antenna and R.F. Coil Shield	.15
114-20	Speaker Chassis Only	10.00
128-4	Complete Speaker Housing	2.00
140-5	Set Case less Covers	1.25
140-6	Covers for Above	1.25
142-4	Plug-in Vibrator	4.50

Serial No. 80001 and up

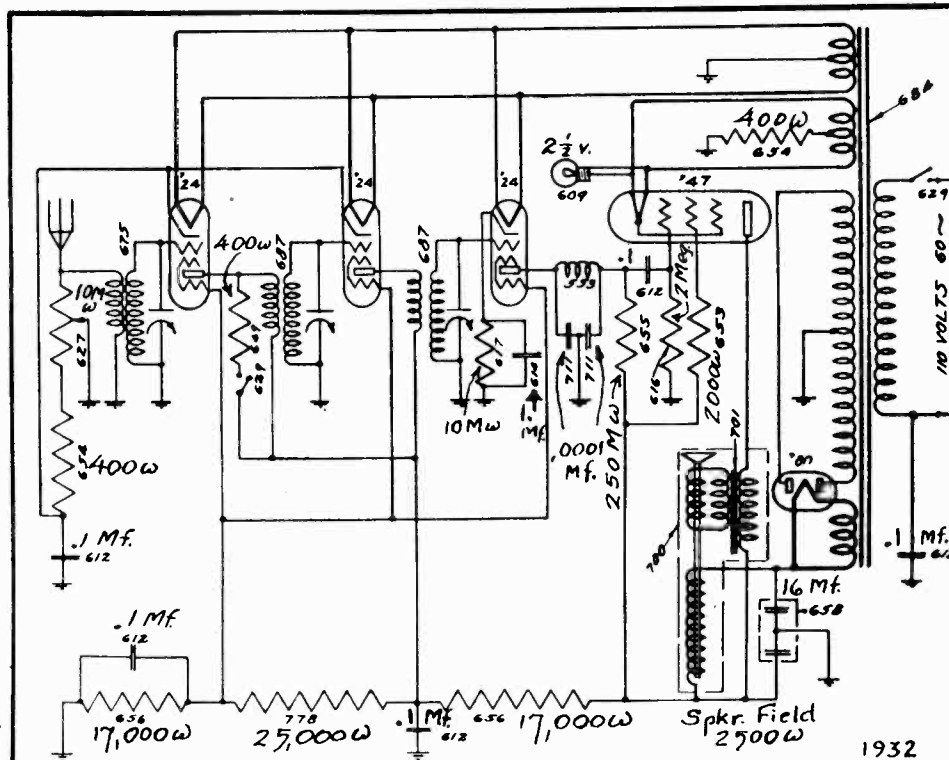
Part No.	Description	List Price Ea.
3.50		
REMOTE CONTROL PARTS		
147-10	Plate Antenna	10
	Flexible Cable Control Bushing	.35
152-2	Battery Cable & Fuse Assembly	.10
152-3	Fuse Insulating Sleeve	.05
152-4	Chassis Battery Cable Assembly	.30
152-6	Antenna Cable	1.00
152-7	Speaker Cable with Plug	.25
153-4	Special Speaker-Tone Control-Dial Light Socket Assembly	.05
160-11	Mounting Studs Complete with Nut & Washer	.05
169-1	15 Amp. Fuse (3AG-15)	.10
123-1	All Sockets	.90
	Dome Lite Filter	.10
112-39	Selector Control Shaft	.15
112-41	Idle Gear	.05
112-42	Pointer Shaft	.10
112-85	Volume Control Shaft	.15
112-45	Bezel (Crystal Retainer)	.15
112-46	Celluloid Dial Crystal	.05
112-48	Pointer Shaft Gear	.35
112-97	Glass Dial	.10
112-108	Metal Disc Pointer	.10
116-13	6-8 Volt. T-51 Bulb Bayonet Base	.45
116-9	Pilot Light Assembly	.35
116-11	Tone Control Assembly Unit Complete	.15
131-5	Black Bakelite Remote Control Knobs	.05
134-32	Fibre Dial Mask	.30
146-8	Die Cast Remote Control Mounting Bracket	.10
146-12	Steering Column Strap	.15
146-25	Dash Mounting Bracket	.10
147-3	Selector Control Bushing for 112-39 Shaft	.10
147-4	Volume Control Bushing for 112-43 Shaft	1.50
149-25	Flexible Volume Control Cable - 24"	1.50
150-25	Flexible Selector Control Cable - 24"	1.50
151-6	Remote Control Head Complete with Sterling Column Bracket	5.00
	Dash Mounting Kit (specify make and year of car)	1.25
151-8	Special General Motors Control Head	7.00
	Dash Mounting Kits for 1935 Chevrolet and Pontiac for use with 151-8 head	1.50
	Dash Mounting Kits for 1935 Oldsmobile for use with 151-8 head	1.75

REPAIR PARTS - MODEL 880 Otherwise same as Series A & B -
SERIES C *82006 and up Sensitivity Control is not used

109-31	.5 Mfd. x 120 Volt Condenser	.60	111-42	Antenna Coil Complete - Less Shield	1.00
148-6	Special Ford Ignition Coil Condenser	.50	111-43	Antenna Filter Assembly Complete with Shield and Antenna Cable	1.60
124-21	.15S Series Padder	.50	RESISTORS		
COILS			Unless otherwise listed, all carbon resistors		
105-18	"A" Choke L1-L2, 32 1/2 Turns, No. 14 wire	.10	.20		
105-19	"A" Choke, L3, 60 Turns, No. 18 wire	.15	.15		
108-56	Input I.F. Transformer Complete with Shield	1.50	MISCELLANEOUS		
108-57	Output I.F. Transformer Complete with Resistors and Condensers. Mounted in Shield	2.50	101-39	Tone Control	1.00
	R.F. Coil Complete - Less Shield	1.00	101-21	Volume Control with Switch	1.35
106-20	Oscillator Coil Complete with Bracket	.75	102-24	Three Gang Variable Condenser	4.00
110-34					

CALVERT MOTOR ASSOCIATES

SCHMATIC WIRING DIAGRAM OF THE Calvert 5-TUBE RADIO



D. C. Voltages

READING FROM—

Chassis (ground) to plates of R. F. tubes	130 to 150 volts
“ “ to plate of Detector	75 to 95 volts
“ “ to plate of Pentode	215 to 235 volts
“ “ to screen of R. F. tubes	45 to 65 volts
“ “ to screen of Detector	45 to 65 volts
“ “ to screen of Pentode	215 to 235 volts
“ “ to cathode of R. F. tubes	1.5 to 2.5 volts
“ “ to Cathode of Detector	4 to 6 volts
“ “ to pentode Filament Center Tap	14 to 18 volts

A. C. Voltages

1st R. F., 2nd R. F., Detector and Pentode Filaments	2.3 to 2.5 volts
Rectifier Filament	4.8 to 5.1 volts
Ground to plates of 280	approximately 375 volts

NOTE: Filament Voltages may be measured with a Weston Triple Range (0-4, 0-8, 0-150) Type 528 AC Voltmeter. The high voltage on the Rectifier Plates should be measured with a double range (300, 0-600) Type Weston AC Voltmeter.

Operation of Set

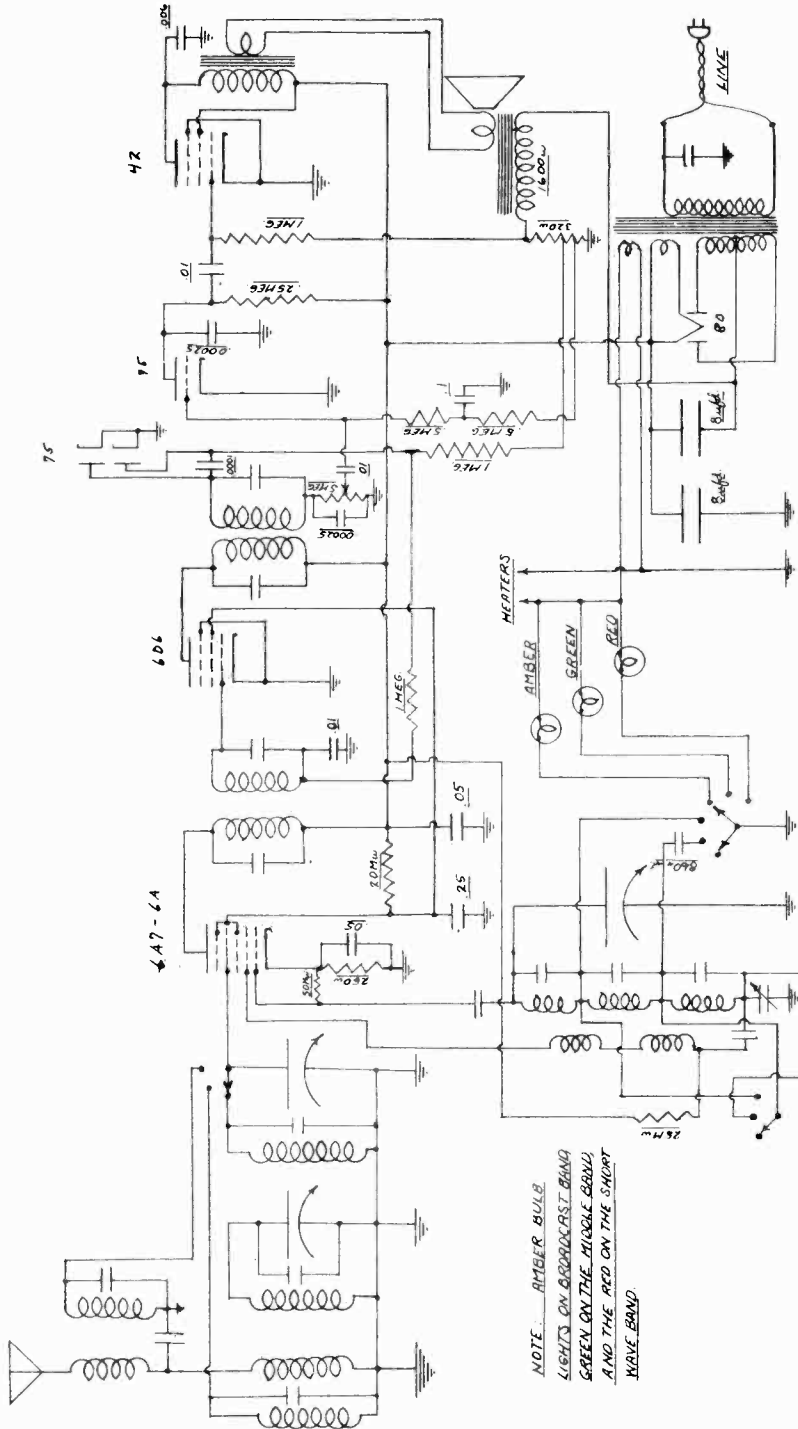
Also Use of Local and Distance Switch

After set is turned on it will be some time before the set will operate due to the tubes heating up. Turn Volume Control full on then rotate dial until station is heard, turn Volume Control until desired volume is reached.

If in the vicinity where a strong local is being received turn local and distance switch (found on left side of cabinet) to local position.

CAVALCADE RADIO CO.

MODEL 357
Schematic
Data



NOTE - AMBER BULB LIGHTS ON BROADCAST BAND GREEN ON THE MIDDLE BAND AND THE RED ON THE SHORT WAVE BAND

6-Tube Super heterodyne AC Receiver
For use on 110 volts AC only

IP 456 KC

This radio is a six-tube Superheterodyne type which operates ON AC CURRENT ONLY at a frequency of 60 cycles and at 110 volts.

It covers three wave bands, as follows:
Standard Broadcast band - 540-1750 kc - AMBER light
Police and Amateur band - 1650-5000 kc - GREEN light
Short wave, American & Foreign - 18-5.7 meg.-RED light
Antenna and Ground

An outside antenna is desirable with this radio in order to obtain the maximum in performance. With an efficient outside antenna, foreign reception is guaranteed. The short red wire in the rear should be connected to the antenna. It is desirable to have this antenna clear of surrounding objects and as high as possible from the ground. The black wire is the grounding terminal. If the lightning circuit is not already grounded, reception will be improved by connecting this black wire to the cold water pipe or radiator; otherwise the ground wire can be left free.

Operation of Set

The right hand knob switches on the set, and thereafter acts as the volume control. The upper middle knob is the station selector with which the stations are tuned in. The lower middle knob is the variable tone control, allowing you to control the tone for base or sharp timbre. The left hand knob controls the three wave bands of the set. When turned to the extreme left, the broadcast band is on, showing an AMBER light; switched to the center, the police and amateur band is on, showing a GREEN light; the extreme right brings in the short wave, showing a RED light. Success with short wave requires more careful tuning than with the broadcast band and necessitates study of a chart to ascertain location of the principal short wave broadcasting stations. Air conditions are not always favorable to short wave reception, under which conditions nothing can be done, but with reasonable atmospheric clearance, good foreign reception may be had.

MODEL 359
Schematic
Installation Data

CAVALCADE RADIO CO.

- Chassis in metal container
- 2 Flexible shafts
- 1 Tuning control head with pilot light
- 1 "A" battery cable with fuse
- 1 Antenna lead
- 1 Bolt, Nut, and Washer

ANTENNA CONNECTION:

The antenna is a shielded lead which is fastened into the hole at the left front edge of the container (fitting into a Delco-Remy receptacle and may be fastened to aerial provided for this purpose by most car manufacturers). In case there is no aerial in the automobile, an extension of shielded wire may be brought down to an aerial of the strap type suspended between the front and rear axles beneath the car, or any other type of automobile antenna.

BATTERY CONNECTION:

The connections to the "A" battery are made with the shielded lead which is brought out to the right rear of the set and is connected to the battery side of the ammeter. This will be indicated by no discharge being shown on the ammeter. The shielding is grounded to a convenient bolt or nut that may be loosened near the ammeter under which it may be tightened.

OPERATION OF SET:

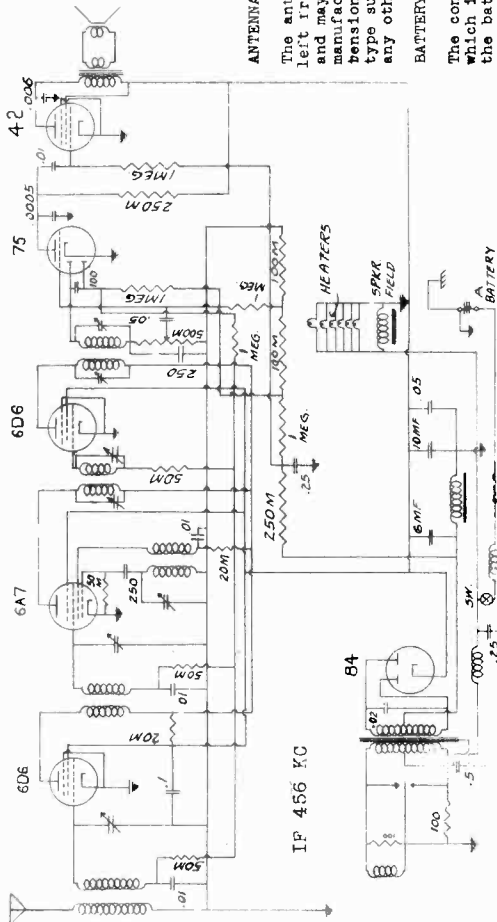
To operate the set, turn the left hand knob to the right and the pilot bulb in the control head will light, showing that the set is connected. After a minute or less, the tubes should be warmed up and by turning the right hand control on the dial, adjustment may be made in whose frequency may be found on the dial, adjust the volume by means of the left hand knob and do not turn off the station as distortion will occur unless it is tuned to the center of the signal.

ELIMINATION OF MOTOR NOISE:

A car of the later type and in good mechanical condition will usually require no suppressors with this set. However, if the body of the car has loosened at joints due to wear, electrical disturbances may be caused which will require bonding of these parts together with heavy braided conductors, soldered across this portion. If considerable motor noises are heard in set they will reach the set through two paths. First, through the "A" battery connection, which is common to the generator and may be corrected by a condenser either from the battery side to the ammeter to ground, or a condenser placed across the charging terminal of the generator to ground. Second, by means of actual radiation from the ignition wires which can be reduced by shielding the antenna lead up to the antenna proper. Also, if necessary, suppressors may be inserted on spark plugs and distributor head.

IF SET DOES NOT PLAY:

If after all the above instructions have been followed and set does not operate, the top of the radio case may be removed by unloosening the six screws holding it and ascertaining if all the tubes are lit and fully pressed into sockets, and be sure that all grid caps fastened to the tubes are in place. If tubes fail to light, check the fuse in shielded lead connected to ammeter. If there is no light buzzing sound from set when turned on and set does not play, remove the vibrator control in can in right rear of set which plugs into socket in the manner of a tube and replace. If the above instructions are carried out and the set still does not play, consult reliable service man.



ASSEMBLY AND MOUNTING:

The set may be mounted by means of a 3/8 inch machine bolt placed through a hole in the center of a space to clear 9 1/2 x 7 inches, and having no obstruction within 7 inches from its surface which will then clear the auto chassis. The rear of the set can then be joined to the head of this bolt, and the nut attached to the bolt and tightened against the opposite side of the partition, leaving the set in a rigid mounting. If, however, sufficient space cannot be found when mounting in this manner, the set may also be mounted from one of the smaller ends. This requires a space 7 1/2 x 7 inches, having no obstruction in front of it for a distance of 5 1/2 inches, in this position the speaker should face towards the floor board, or if at one side of the car, toward the center.

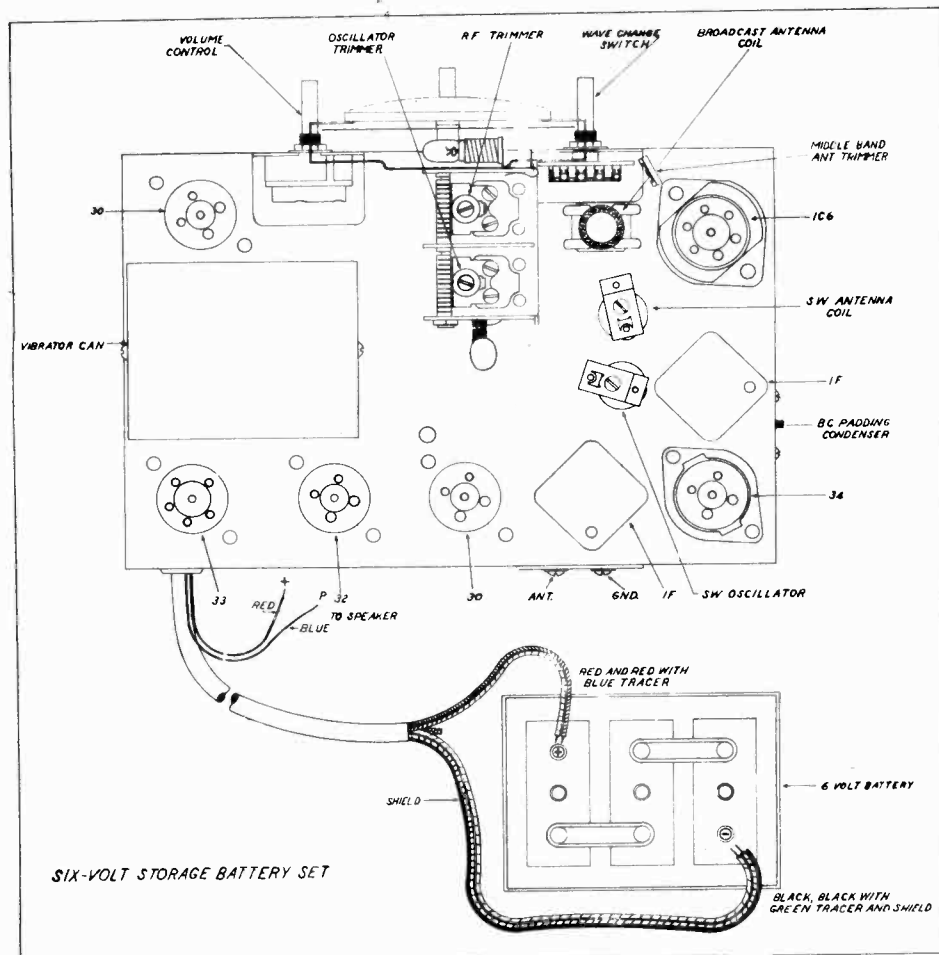
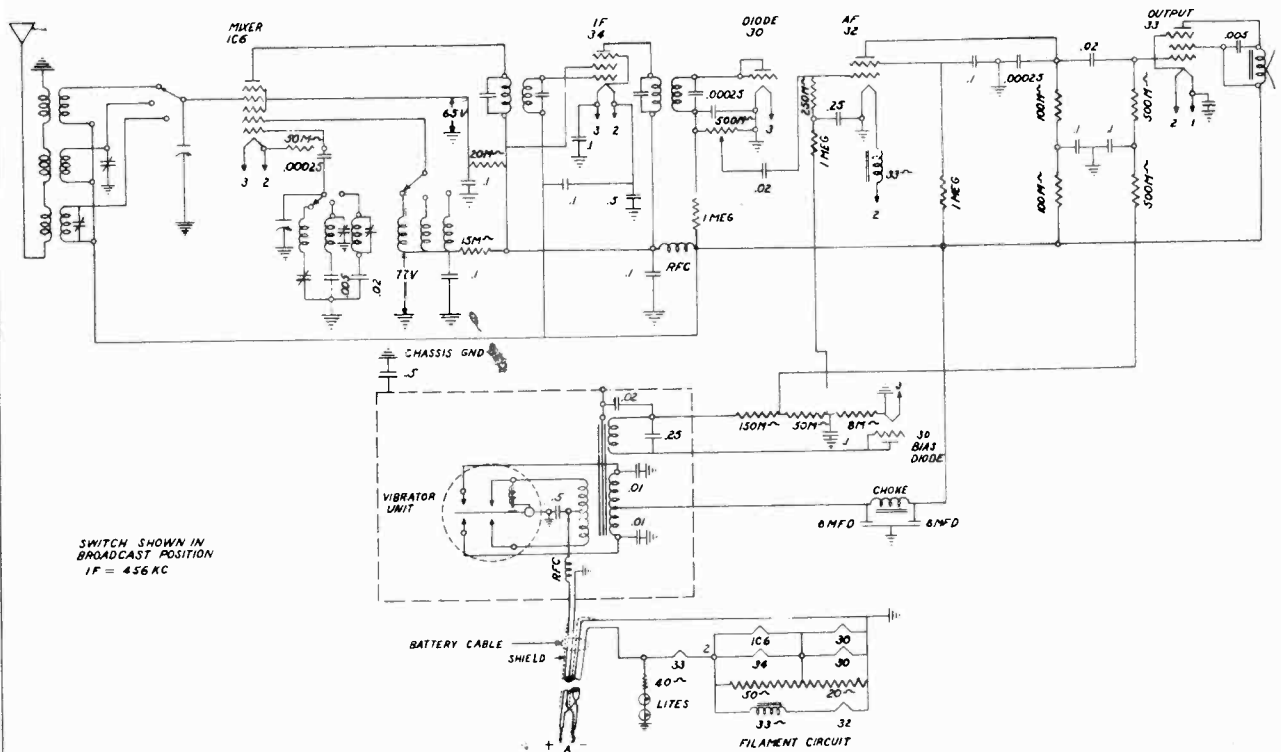
The two flexible shafts should first be connected to the radio. One shaft has two screw-driver shaped ends; this shaft is for the tuning control. One end is inserted in the center hole of the radio and twisted until well engaged; then the set screw is tightened. The other end is inserted into the hole in the rear of the right hand knob on the control head, which is the tuning knob. The other shaft has one screw-driver end and one slotted end. The slotted end fits into the hole in the rear of the left hand knob of the control head, which is the volume control knob. The screw-driver end fits into the edge hole of the radio case, and must be well engaged in the slot before set screw is tightened. Set screws for these shafts must be tightened on the control head as well.

CONTROL MOUNTING:

The control head can next be secured to the steering column by means of the strap or bracket supplied for this purpose, or may be fastened to the dash itself in various positions. The pilot light already attached to control and in position, should be removed from the socket in the rear of the control head. Rotate the tuning knob (right hand knob) clockwise as far as it will go; then, by means of a small screw-driver inserted in the pilot light socket, turn the pointer on the dial until it reaches the right hand end of the scale. Where there is no screw in pilot light socket, this type of control is self adjusting by rotating the pointer clear to one end of scale and then to other, which automatically sets the pointer in proper position.

CAVALCADE RADIO CO.

MODEL 3511
Schematic
Socket, Trimmers



MODEL 3511

Alignment

Data

CAVALCADE RADIO CO.

ALIGNMENT DATA

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 3000 and 10,000 K. C. and an output meter to be connected across the speaker terminals.

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 AVC from operating and giving false readings.

I.F. ALIGNMENT Adjust the test oscillator to 1400 K.C. and connect the output to the antenna wire through a .0001 mfd. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 K.C. and adjust the rear gang condenser trimmer to peak. This adjusts the receiver on scale. Then adjust the front or R.F. trimmer to peak.

Next rest the dial pointer on the receiver and test oscillator to 600 K.C. Slowly increase or decrease 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 seems a little complicated but is the easiest way to adjust the oscillator to the R.F. section. The padding condenser is located on the left hand end of the chassis.

Return to 1400 K.C. and again go over the adjustment at that frequency to be sure they have not been thrown out of adjustment.

SHORT WAVE BANDS

The foreign band of 19 to 49 meters can be adjusted by the two trimmers on the short wave coil located next to the gang condenser. Set the test oscillator to 10 megacycles or 31 meters.

The police and aviation band can be adjusted from a signal set at 3,000 K.C. or 300 on the dial. The oscillator trimmer is located underneath the chassis and the R.F. trimmer is between the 6A7 tube and the wave change switch.

The gang condenser trimmers are not to be used for alignment of either of the short wave bands.

SERVICE HINTS

VIBRATOR Vibrator noise may be due to the following: a discharged "A" battery, high resistance connections on battery terminals, a defective vibrator or a loose cover on the vibrator can.

The vibrator unit is a plug-in type and can be removed for replacement very easily. This unit should last a very long time as current through the contact points is very small.

Never leave the power switch turned on when the "A" battery is too low to make the receiver function as this is liable to seriously injure the vibrator or vibrator transformer. Never remove any of the tubes when the power switch is turned on as they are connected in a series parallel circuit.

MICROPHONICS The two volt type of tubes used in this receiver are ordinarily more microphonic than heater types. They can be detected by touching each tube with the finger tips. Another source might be caused by the dial glass touching the front or escutcheon plate.

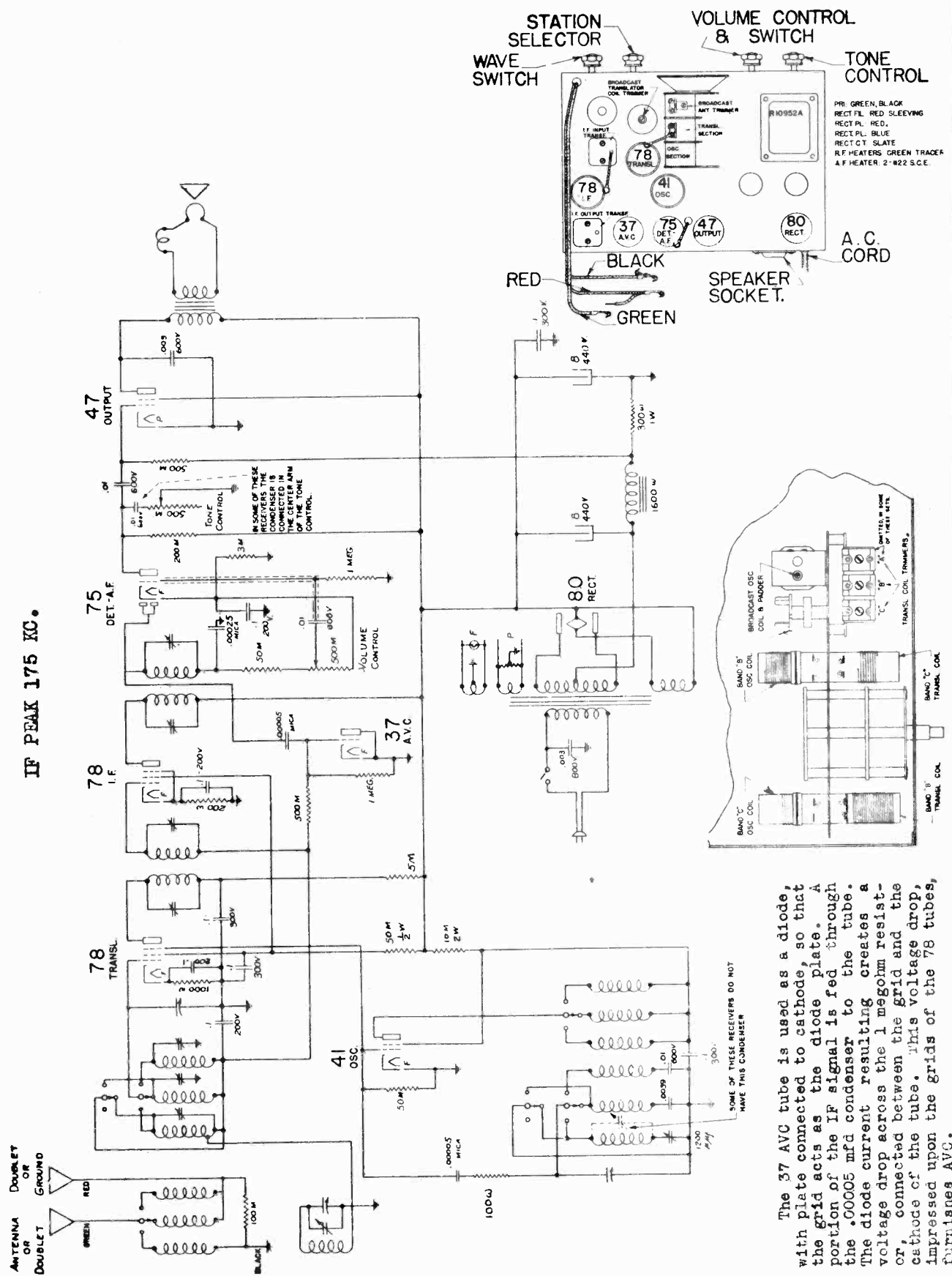
LOW VOLUME This trouble may be caused by weak or defective tubes (replace with set of tubes known to be in good condition); antenna disconnected from the receiver; open antenna coil or open or shorted by-pass condensers.

Some localities remote from broadcasting stations may require an extra long antenna of about two hundred feet.

LOW VOLTAGE Low voltage may be caused by a low battery, a defective vibrator, corroded battery terminal or shorted by-pass condensers. Increasing the length of battery leads might cause low voltage and vibrator noise.

COLONIAL RADIO CORP.

MODEL 605
Schematic
Socket, Trimmers



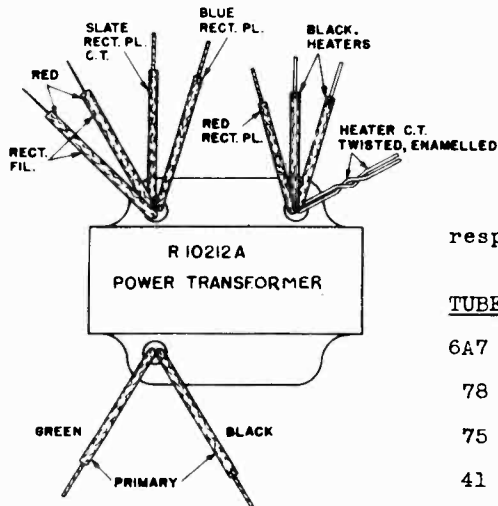
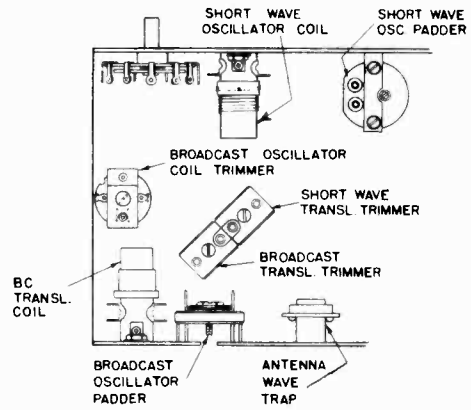
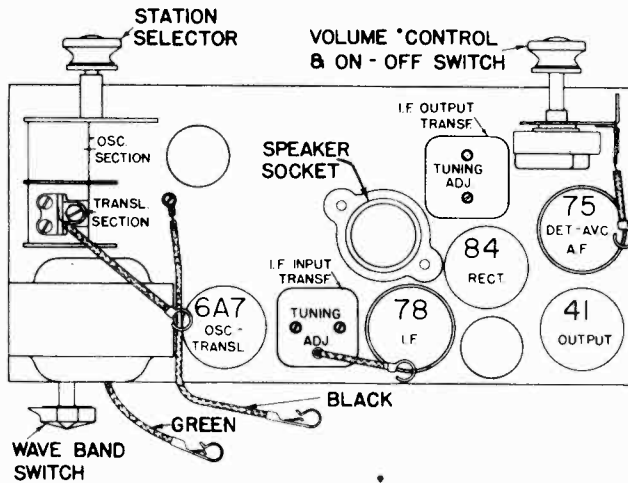
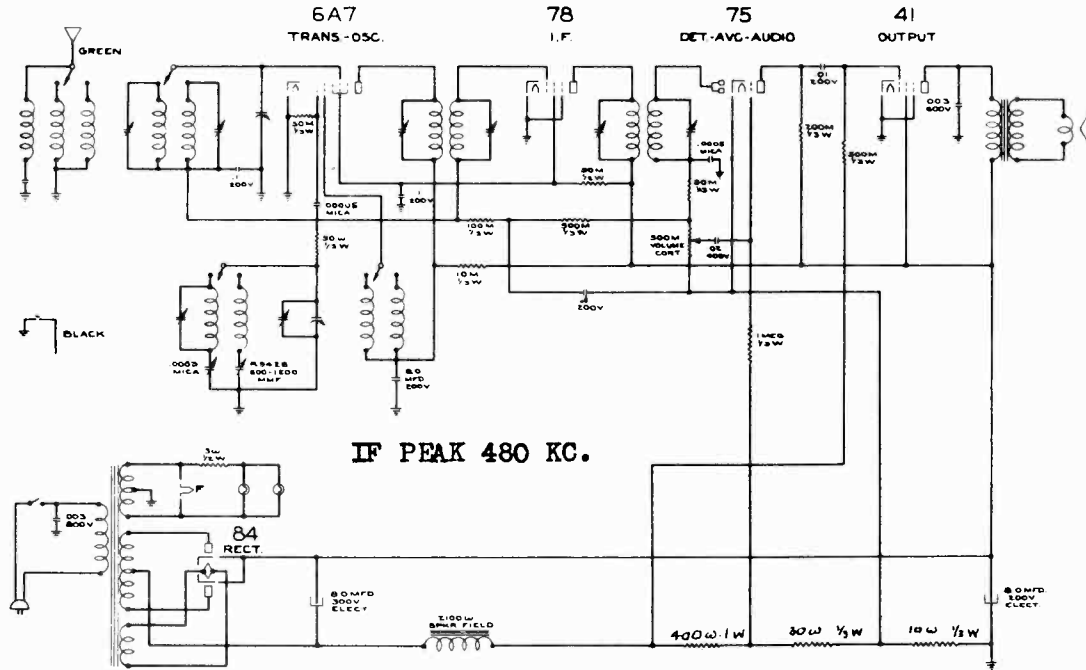
IF PEAK 175 KC.

The 37 AVC tube is used as a diode, with plate connected to cathode, so that the grid acts as the diode plate. A portion of the IF signal is fed through the .0005 mfd condenser to the tube. The diode current resulting creates a voltage drop across the 1 megohm resistor, connected between the grid and the cathode of the tube. This voltage drop, impressed upon the grids of the 78 tubes, furnishes AVC.

MODEL 662

Schematic, Voltage
Socket, Trimmers

COLONIAL RADIO CORP.



TUBE VOLTAGE CHART

All readings are to be taken between the chassis and the respective element of each tube.

TUBE	PLATE	SCREEN	OSCILLATOR SECTION PLATE
6A7 - Osc-Transl	140	60	140
78 - IF	185	60	
75 - AVC-DET-AF	85		
41 - Output	175	185	

POWER TRANSFORMER CONNECTIONS - MODELS 651 & 662

COLONIAL RADIO CORP.

MODEL 662
Alignment, Notes

MODEL 662

The COLONIAL Model 662 is a five tube superheterodyne, almost identical with Model 651 except for the frequency coverage of its short wave range. The short wave range of the 651 is approximately 5500 kc to 18,000 kc, covering American and Foreign short wave broadcasting. The short wave range of the Model 662 is from approximately 1600 kc to 5200 kc, covering amateur, aircraft, and police transmissions.

Because of the difference in frequency range, the Model 662 uses a conventional type antenna whereas the Model 651 has provision for a short wave doublet antenna.

The tubes and their functions are:

6A7 - Oscillator-Translator
78 - IF
75 - Detector-AVC-AF
41 - Output
84 - Rectifier

In order to prevent interference from code stations, when the receiver is located near the coast, a wave trap is incorporated in the antenna circuit. Although this trap is shown in the schematic as a coil with a series condenser, actually it consists of two multi-layer coils wound on top of each other, with one end of each coil left unconnected. The distributed capacity between the coils is represented by the condenser in the schematic. The design of the coil is such that the combination of distributed capacity and inductance is resonant

at about 600 meters, which is the frequency used by ships and also is very near the IF frequency of the receiver.

The 75 Detector-AVC-AF Circuit:

The IF signal existing at the IF output transformer secondary is impressed between the diode plates and the cathode of the 75 tube, in series with the 50 M ohm resistor and the 500 M ohms of the volume control. Diode current flows, creating voltage drops across these resistances. Only the drop across the volume control resistance is used for AVC voltage. The control grid returns of the 6A7 and 78 tubes are connected through filter resistances to one end of the volume control. This end is negative in respect to the other end of the control, so that the voltage drop across it, due to the diode current, is impressed as negative bias on the control grids of the 6A7 and 78 tubes. Any increase in signal strength increases the voltage drop across the volume control and so increases the negative bias on the 6A7 and 78 tubes, with a resultant decrease in tube amplification. Since increases in signal strength are offset by decreases in tube amplification, the input to the detector tends to remain at a constant value.

Any desired portion of the audio component across the volume control can be picked off by the movable arm of the control and fed through the .02 mfd. condenser to the triode section of the 75 tube. It is there amplified and then coupled to the 41 output tube.

ALIGNMENT PROCEDUREThe IF Stages:

1. Connect the output meter across the loud speaker voice coil.
2. Connect the ground lead of the test oscillator to the receiver chassis.
3. Connect the other lead of the test oscillator, in series with a .1 mfd. condenser, to the grid of the 78 tube, leaving the grid clip attached to the cap.
4. Set the test oscillator to 480 kc and tune the IF output transformer. The locations of the tuning adjustments are shown in the Service Illustration.
5. Change the test oscillator connection to the control grid cap of the 6A7 tube and adjust the IF input transformer.

6. Repeat the adjustments to secure greater accuracy.

Always use as low an output as possible from the test oscillator in order to render the AVC action of the set inoperative.

RF Alignment; Short Wave:

The short wave range must be aligned before the broadcast range.

1. Set the test oscillator to 5175 kc and couple its output to the green antenna lead of the receiver, leaving the antenna connected.
2. Put the wave switch in the short wave position and open the variable condenser plates all the way. Then adjust the trimmer on the variable con-

MODEL 662

Alignment, Part 2
Parts List

COLONIAL RADIO CORP.

Condenser for maximum output.

3. Set the test oscillator to 4500 kc and adjust the short wave translator coil trimmer for maximum output.

4. Set the test oscillator to 1700 kc and tune in its signal. Then slowly rotate the condenser back and forth a degree or two and, at the same time, adjust the short wave oscillator padder for maximum output.

5. Repeat the 5175 kc and 4500 kc adjustments. Always use the lowest possible output from the test oscillator.

RF Alignment; Broadcast:

1. Set the test oscillator to 1630 kc, leaving it coupled to the receiver's antenna lead as for short wave align-

ment.

2. With the wave band switch in the broadcast position, open the variable condenser plates all the way. Then adjust the broadcast oscillator coil trimmer for maximum output.

3. Set the test oscillator to 1400 kc and tune in its signal. Then adjust the broadcast translator trimmer for maximum output.

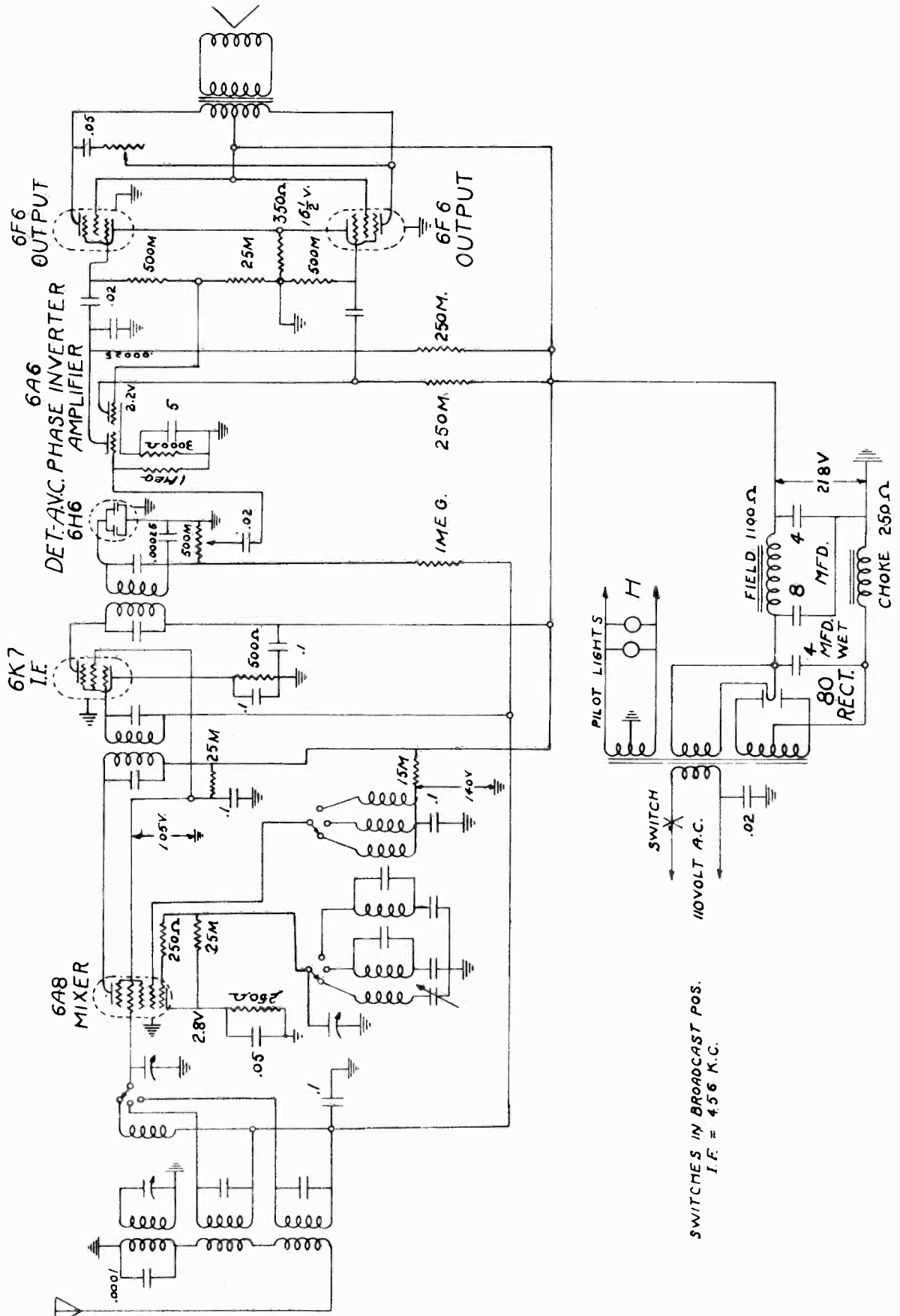
4. Set the test oscillator to 600 kc and tune in its signal. Then slowly rotate the variable condenser back and forth a degree or two and, at the same time, adjust the broadcast oscillator padder for maximum output.

5. Repeat the 1630 kc and 1400 kc adjustments, always using the lowest possible output from the test oscillator.

<u>PART NO.</u>	<u>DESCRIPTION</u>		
R8297A	Board - Terminal, double	R8253	Socket - 5 prong
R8308A	Board - Terminal, triple	R8092	Socket - 6 prong
R9446A	Board - Terminal, 4 terminals	R8072	Socket - 7 prong
R10859	Cabinet -	R10363D	Socket - Pilot light, with volume control mounting bracket
R10198	Coil - Translator, broadcast	R10373A	Socket - Pilot light, with bracket (mounted on variable condenser)
R10199	Coil - Oscillator, broadcast	S10248A	Speaker
R9829M	Coil - Translator, short wave	R10207	Switch - Wave
R9829N	Coil - Oscillator, short wave	R10208A	Transformer - IF input
R9565	Coil - Antenna wave trap	R10209	Transformer - IF output
R11198	Condenser - Variable	R10212B	Transformer - Power
R9204	Condenser - 8 mfd. 300 volts, electrolytic		
R8748	Condenser - 8 mfd. 200 volts, electrolytic		
R9426	Condenser - Padding, 1200 mmf.		
R9975	Condenser - Padding, 300 mmf.		
R10197	Condenser - Trimmer		
R6444	Condenser - .1 mfd. 200 volts		
R9818	Condenser - .02 mfd. 400 volts		
R8432	Condenser - .01 mfd. 200 volts		
R7681	Condenser - .003 mfd. 600 volts		
R10096	Condenser - .003 mfd. 800 volts		
R6760	Condenser - .0005 mfd. mica		
R8621	Condenser - .00005 mfd. mica		
R10604	Control - Volume with switch		
R7566	Cord - AC line		
R11212	Escutcheon - Wave switch		
R10980	Grommet - Variable condenser mounting		
R11213	Indicator - Station selector		
R10246	Indicator - Volume control		
R11204	Instruction leaflet		
R10240	Knob - Station selector		
R10247	Knob - Volume control		
R8278	Knob - Wave switch		
R2288	Lamp - Pilot		
R5346B	Lead - Antenna		
R6345D	Lead - Ground		
R10379A	Pointer		
R7585	Resistor - 1 megohm, 1/3 watt carbon		
R7228	Resistor - 500 M ohms, 1/3 watt carbon		
R6638	Resistor - 200 M ohms, 1/3 watt carbon		
R7586	Resistor - 100 M ohms, 1/3 watt carbon		
R6637	Resistor - 50 M ohms, 1/3 watt carbon		
R6445	Resistor - 50 M ohms, 1/2 watt carbon		
R7587	Resistor - 10 M ohms, 1/3 watt carbon		
R6632	Resistor - 50 ohms, 1/3 watt carbon		
R10364	Resistor - 30 ohms, 1/3 watt carbon		
R10493	Resistor - 10 ohms, 1/3 watt carbon		
R8066	Resistor - 400 ohms, 2 watts, flexible		
R10204	Resistor - 3 ohms, 1 watt, flexible (Pilot light circuit)		
R10206	Shield - Electrolytic condenser		
R9360	Shield - Tube		
R8366	Socket - 4 prong		

CONTINENTAL RADIO & TELEV. CO.

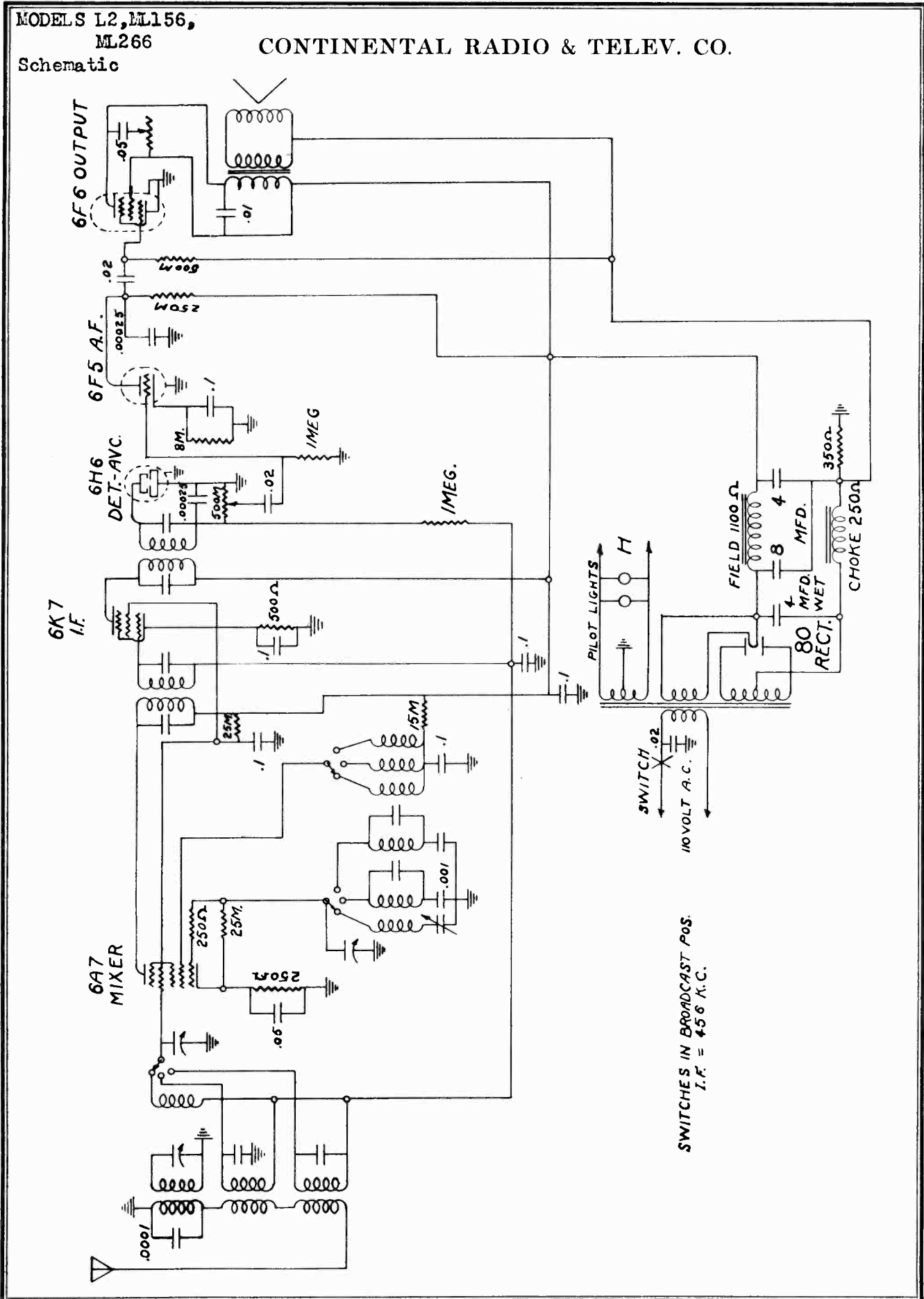
MODEL L4, ML4
Schematic, Voltage



SWITCHES IN BROADCAST POS.
I.F. = 4.56 K.C.

MODELS L2, ML156,
ML266
Schematic

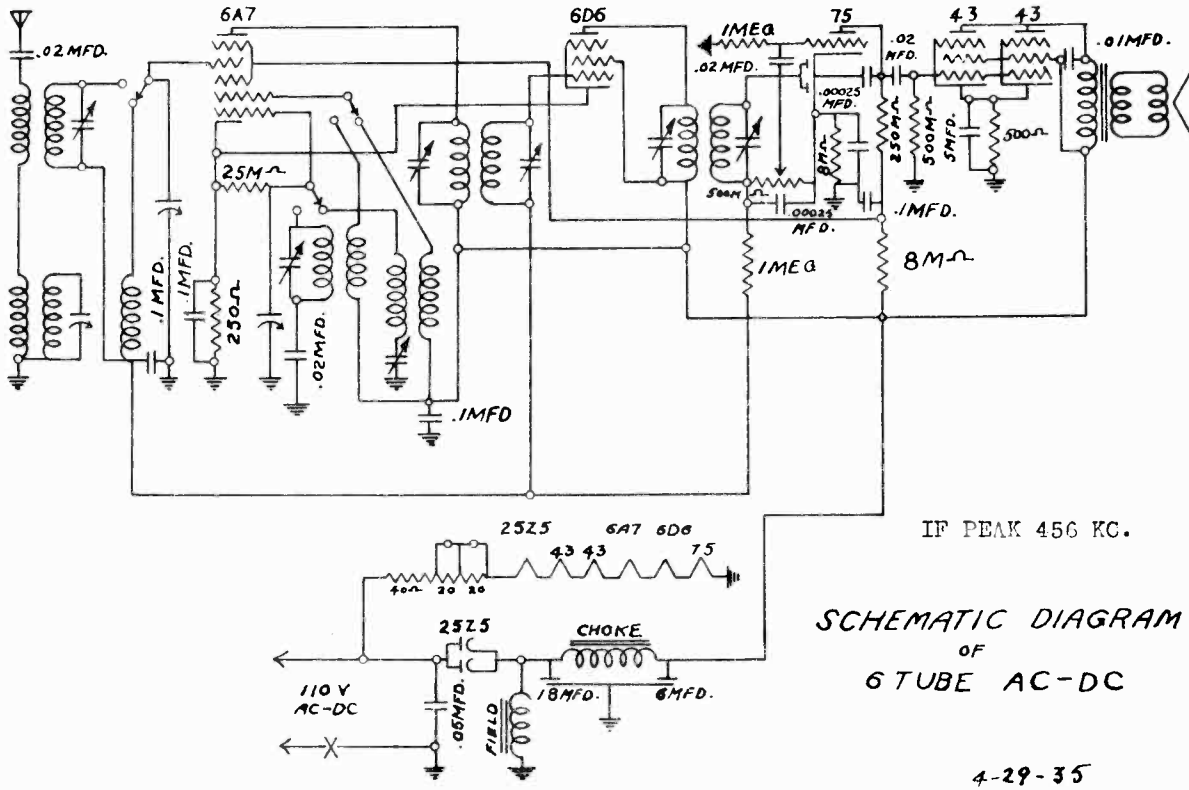
CONTINENTAL RADIO & TELEV. CO.



MODEL X-541

Schematic, Alignment

CONTINENTAL RADIO & TELEV. CO.



IF PEAK 456 KC.
 SCHEMATIC DIAGRAM
 OF
 6 TUBE AC-DC

4-29-35

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 3000 and 10,000 K.C. and an output meter to be connected across the primary or secondary of the output transformers.

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 AVC from operating and giving false readings.

CAUTION: Do not let the test oscillator come in direct contact with the receiver chassis.

I. F. ALIGNMENT Adjust the test oscillator to 456 K.C. and connect the output to the grid of the 1st detector tube (6A7) through a .05 or .1 mfd. condenser. If desired 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.

R. F. ALIGNMENT Adjust the test oscillator to 1400 K.C. and connect the output to the antenna post through a .0001 mfd. mica condenser to give the equivalent of an antenna about 80 feet. Set the receiver pointer to 1400 K.C. and adjust the rear gang condenser trimmer to peak. This adjusts the receiver on scale. Then adjust the two front gang trimmers to peak.

Next reset the dial pointer on the receiver and the test oscillator to 600 K.C. Slowly increase or decrease 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 seems a little complicated but is the easiest way to adjust the oscillator to the prescaler or P.F. section. The padding condenser is located on the left hand end of the chassis.

Return to 1400 K.C. and again go over the adjustments at that frequency to be sure they have not been thrown out of adjustment.

SHORT WAVE BANDS

The foreign band of 19 to 49 meters can be adjusted by the two trimmers on the short wave coil located next to the gang condenser. Set the test oscillator to 10 megacycles or 31 meters.

The police and ariation band can be adjusted from a signal set at 3,000 K.C. or 300 on the Dial. The oscillator trimmer is located underneath the chassis and the R.F. trimmer is between the 6A7 tube and the wave change switch.

The gang condenser trimmers are not to be used for alignment of either of the short wave bands.

SERVICE HINTS

CAUTION: Be very careful in handling the receiver chassis as it is connected to one side of the power line.

LOW VOLUME

This may be caused by weak or defective tubes (Replace with set of tubes known to be in good condition) open antenna coil, open or shorted by-pass condensers or defective wave change switch. Poor receiving locations such as steel buildings may require extra antenna to get good reception.

LOW VOLTAGE

Low voltage may be caused by a defective rectifier tube, open filter condenser or shorted by-pass condensers.

HUM

Excessive hum may be caused by a defective tube, open or shorted by-pass condensers or open audio grid leads.

DISTORTED REPRODUCTION

This may be caused by a defective 75 or 43 tube or a ground open in the automatic volume control circuit. Check all circuits with an ohmmeter or continuity tester.

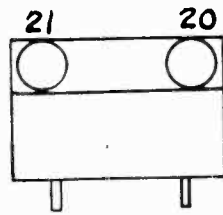
OSCILLATION

Most trouble from oscillation is due to open by-pass condensers in the P.F. or I.F. circuits. Test each condenser with another condenser in parallel.

The grid lead on the 75 tube may also cause a howl if it runs too close to the 42 tube.

CROSLEY RADIO CORP.

MODEL 2C1, Sampler
Schematic, Voltage
Socket, Data, Parts



Specifications

Model 2-C-1 is a two tube tuned radio frequency receiver designed for operation from AC or DC 110 Volt electric circuit.

Tubes And Voltage Limits

The following are the tubes and voltages measured from tube contact to negative line with 250,000 ohm 250 Volt voltmeter with receiver in operating condition but with no signal to the antenna, and with a line voltage of 117.5 Volts 60 cy. AC-DC Voltages approximately 90% of values shown.

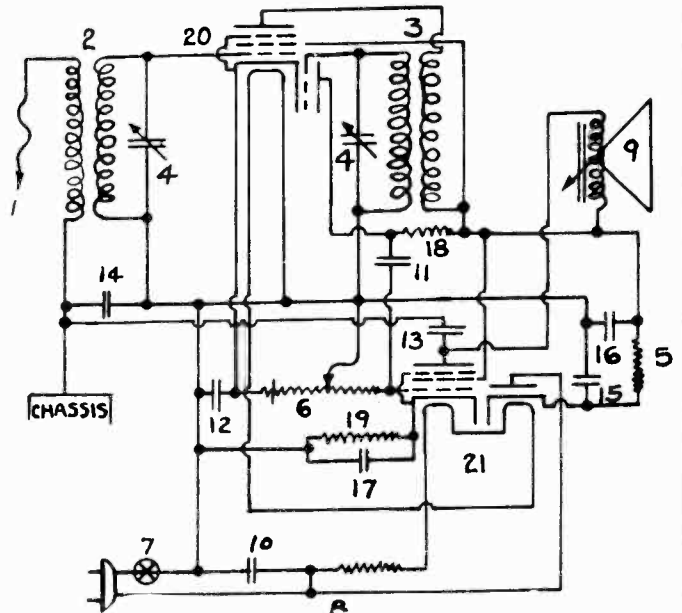
Tube	Position And Use	Plate	Ser. Grid	Grid	Cathode	PL	GL	KL	Filament
6-F-7	R. F. and Regen. Det.	125	125	0	5-30	30	0	—	6.5
12-A-7	A. F. and Rect.	115	125	0	10	117.5	—	135	12.5

VOLTAGE LIMITS ARE PLUS OR MINUS 10% OF VALUES GIVEN

Circuit

Referring to diagram.

The signal enters through antenna and is stepped up by antenna transformer (2) the secondary of which is tuned to the desired signal by one section of the variable condenser (4). This signal activates the pentode section of the 6-F-7 tube. The amplified signal is again stepped up in the R. F. Transformer (3) whose secondary is tuned by the other section of the variable condenser, and this amplified signal is fed into the triode section of the 6-F-7 tube which is operating as a detector. The gain in both sections of this tube is controlled by the volume control (6) which also acts as a grid resistor for the pentode section of the output tube 12-A-7. Resistor (18) serves as the plate resistor for the detector. The signal is coupled to the output pentode through coupling condenser (11) is amplified and then activates the speaker motor. This motor is mechanically connected to the front



of the cabinet which serves as the speaker diaphragm.

Condenser (12) is the 6-F-7 cathode bypass and condenser (14) is the bypass between chassis and negative line.

The 12-A-7 bias resistor (19) and bypass condenser (17) are combined with condensers (15) and (16) as part of the filter circuit. Resistor (5) is also part of this filter which serves to smooth the B supply from the rectifier section of 12-A-7 tube.

Condenser (10) is the hum modulation suppressor condenser and resistor (8) is a series filament resistor contained in the power supply cable.

Speaker

The front of cabinet is the speaker diaphragm. If chassis is to be removed from cabinet the speaker drive rod is unsoldered from speaker motor as explained on instruction card. Do not use glue to fasten front in cabinet. This front is held in place with Hydrolene.

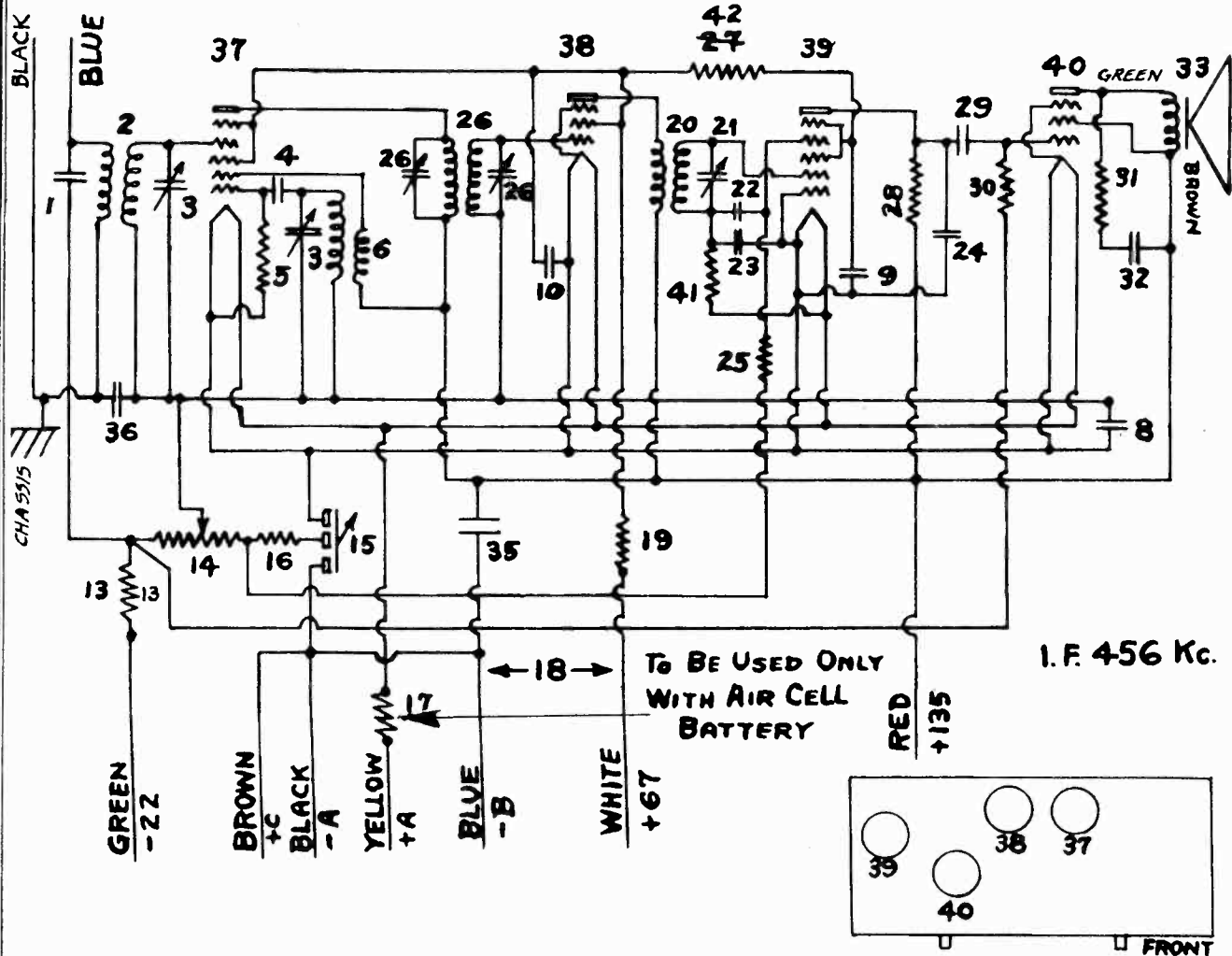
Dec. 1934 PARTS LIST—MODEL 2-C-1 "Sampler"

* Figures in 2nd last column refer to parts shown in diagram.

Qty.	Part No.	Description	Item	List Each	Qty.	Part No.	Description	Item	List Each
1	G33-32000	Antenna Trans.	2	.55	1	W34712	.25 Mfd. 160 V.	12	.20
1	G21-32001	R. F. Trans.	3	.60	1	W34714	.008-.05 Mfd. 160 V.-160 V.	13-14	.20
1	G8-33001	Variable Condenser	4	2.25	1	W34704A	16-16-.8. Mfd. 100 V.-100 V.-20 V.	15	2.00
1	W34698B	Volume Control & Switch	6-7	1.00					
1	G49-28807	6F7 Socket	20	.10					
1	G77-28807	12A7 Socket	21	.10					
1	G7-34400	Tube Connector Assem.		.05					
1	G8-34400	Tube Connector Assem.		.05					
1	B34702B	Resistance Cable and Plug (325 Ohms)	8	.70	2	W22514	750 Ohm Flex.	5-19	.15
1	223M-B	Speaker Unit	9	2.33	1	21454	1 Megohm	18	.15
1	W34710	Speaker Bracket		.05	1	4AC	Cabinet (Ship Design)		.67
					1	4AE	Cabinet (Artists Pictures)		.30
					1	G1-34822	4AC Cabinet Front		.30
					1	G2-34822	4AE Cabinet Front		.05
					1	B34719	Cabinet Back		.65
1	W34711	.02 Mfd. 110 V.	10	.15	1	L-34885	Speaker Pln Assem.		.10
1	W34713	.006 Mfd. 160 V.	11	.15	2	W2244B	Knobs		

CROSLLEY RADIO CORP.

MODEL 4B1, Battery Forty
Schematic, Socket, Parts



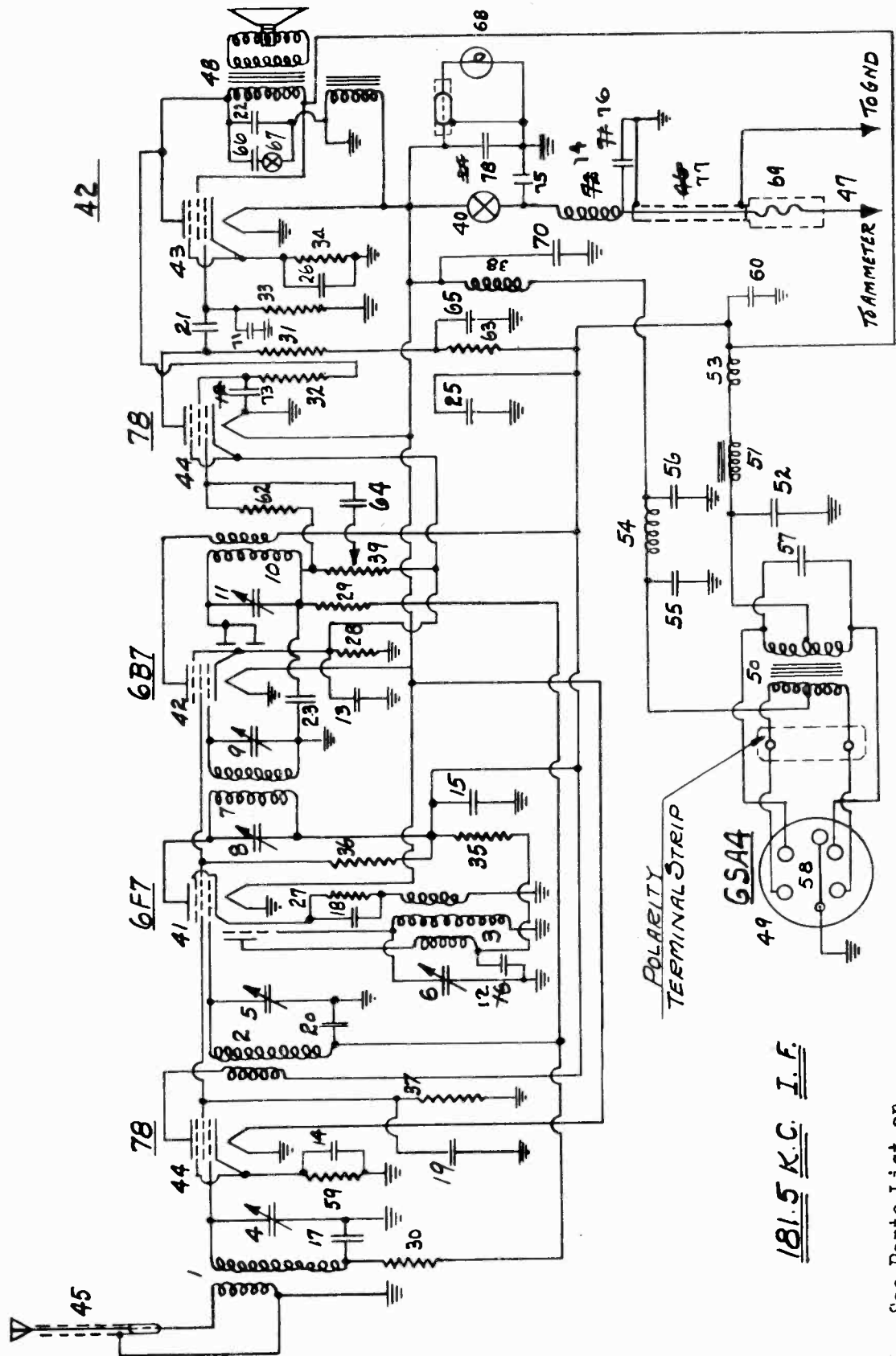
Parts List Model 4B1

Figures in first column correspond to figures in diagram

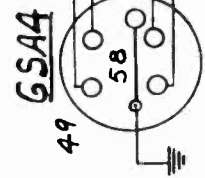
1	W	—28621	0.02 Mfd. 200 Volt	22	W	—28621	0.02 Mfd. 200 Volt
2	G27	—32000	Antenna Coil	23	W	—25572	{ 0.0005 Mfd. 400 Volt
3	G6	—33001	Variable Cond.	24	W	—25572	{ 0.0005 Mfd. 400 Volt
4	W	—5382	0.00025 Mfd.	25	—	—26577	3 Meg.
5		21875	100,000 Ohms	26	G9	—32004	1st I. F. Trans.
6	G9	—32002	Oscillator Coil	27		21455	300,000 Ohms
7				28		21455	300,000 Ohms
8	W	—28622	{ 0.1 Mfd. 200 Volt	29	W	—28621	0.02 Mfd. 200 Volt
9			{ 0.1 Mfd. 200 Volt	30		21454	1 Meg.
10	W	—30321-A	1.0 Mfd. 160 Volt	31		24814	7,000 Ohms
11				32	W	—28619	0.006 Mfd. 200 Volt
12				33		21M	Speaker
13		27121	5,000 Ohms	34			
14	W	—33922-A	{ Volume Control	35	W	—29910-A	0.25 Mfd. 200 Volt
15			{ 3 P. S. T. Switch	36	W	—28621	0.02 Mfd. 200 Volt
16	W	—23013	2,000 Ohms	37	G55	—27975	1A6 Socket
17	G5	—23300	0.6 Ohm	38	G31	—27975	34 Socket
18	G2	—29237	Cable & Marker Assem.	39	G4	—33070	1A6 Socket
19	W	—21452	1,100 Ohms	40	G36	—27975	33 Socket
20	G13	—32004	2nd I. F. Trans.	41		23785	500,000 Ohms
21	G5	—33005	I. F. Trimmer Cond.	42		24990	25,000 Ohms

CROSLY RADIO CORP.

MODEL 5A3, Battery Five
Schematic



POLARITY
TERMINAL STRIP



181.5 K.C. I.F.

See Parts List on
next page for values.

MODEL 5A3, Battery Fiver
Voltage, Parts List

CROSLLEY RADIO CORP.

JUNE 1935

MODEL 5A3—ROAMIO

TUBE VOLTAGES—MODEL 5A3								
Type	Where Used	Ef	Ep	Eg	Ec	Esg	Eosc	E Sup-G
78	R. A. Amp	6.0	230	0-30	5.0	100	—	5.0
6F7	Osc.-Mod.	6.0	230	0-30	8.0	100	55	—
6B7	I. F. Amp. Diode Det. A. V. C.	6.0	230	0	3.0	100	—	—
78	Audio Amp.	6.0	60	0-30	3.0	25	—	3.0
42	Output	6.0	220	0	16.0	230	—	—

VOLTAGES MEASURED TO CHASSIS WITH A 500 VOLT 1000 OHMS PER VOLT VOLTMETER.
6 VOLT BATTERY USED.

VOLTAGE LIMITS PLUS OR MINUS 10%.

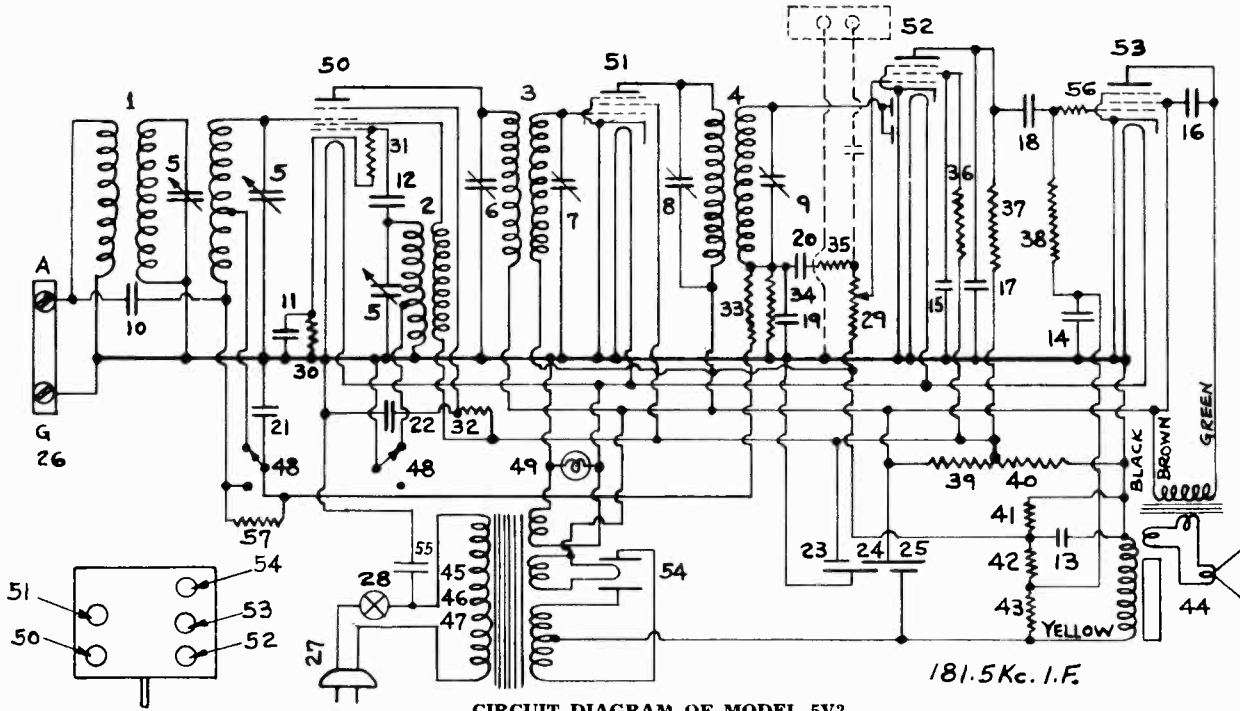
PARTS LIST—MODEL 5A3

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G19—32000	Antenna Coil	48	W —31102	Fuse Carrier
	W —30802A	Coil Shield		LB —33B	Speaker
	W —30026A	Retaining Shield	49	LB —32037	6 SA 4 Syncrotube
2	G11—32001	R. F. Coil	50	G1 —32769	Power Transformer
	W —30802A	Coil Shield	51	G11—24628	"B" Filter Choke
	W —30877	Insulating Washer	52	W —32759	8. Mfd. 300 Volt Condenser
	W —30026A	Retaining Ring	53	G1 —32755	R. F. "B" Choke
3	G14—32002	Osc. Coil	54	G6 —28067	R. F. "A" Choke
	W —25025B	Coil Shield	55	W —30366	0.5 Mfd. 160 Volt Condenser
	W —26891	Insulating Washer	56	W —30366	0.5 Mfd. 160 Volt Condenser
	W —21541C	Retaining Ring	57	W —32762	0.005 Mfd. 1,000 Volt Condenser
4			58	G81—27975	6 SA 4 Socket
5	G2 —33002	Tuning Cond. Gang	59	W —21452	1,100 Ohm Resistor
6			60	W —30741	0.00025 Mfd. (Mica) Condenser
7			61		
8	G6 —32003	1st. I. F. Trans.	62	W —21454	1 Megohm Resistor
9		1st. I. F. Prim. Tuning Cond.	63	W —21237A	60,000 Ohm 1/4 Watt Resistor
10		1st. I. F. Sec. Tuning Cond.	64	W —32780B	0.05 Mfd. 400 Volt Condenser
11	G7 —32003	2nd. I. F. Trans.	65	W —32780B	0.05 7Mfd. 400 Volt Condenser
12		2nd. I. F. Sec. Tuning Cond.	66	W —32782B	0.01 Mfd. 400 Volt Condenser
13		0.05 Mfd. 400 Volt	67	W —26156A	S. P. S. T. Switch (Tone Control)
14	W —32711A	0.1 Mfd. 200 Volt	68		Dial Light
15		0.1 Mfd. 200 Volt	69	W —32757	12 Amp. Fuse
16		0.05 Mfd. 400 Volt	70	W —32741A	0.0005 Mfd. (Mica) Condenser
17	Deleted		71	W —32741A	0.0005 Mfd. (Mica) Condenser
18	W —32779B	0.02 Mfd. 200 Volt Condenser	72	Deleted See 74	
19	W —32781B	0.1 Mfd. 200 Volt Condenser	73	W —24784	0.25 Mfd. 200 Volt Condenser
20	W —32780B	0.05 Mfd. 400 Volt Condenser	74		"A" Choke
21	W —32779B	0.02 Mfd. 200 Volt Condenser	75		.00025 Mfd. Condenser
22	W —32780B	0.05 Mfd. 400 Volt Condenser	76	G8 —31701	.00025 Mfd. Condenser
23	W —23635	0.006 Mfd. 400 Volt Condenser	77		"A" Lead
24	W —32741A	0.0005 Mfd. (Mica) Condenser	78		.00025 Mfd. (Mica) Condenser
25	Deleted See 78			W —30741	Antenna Cable
26	W —32802	8. Mfd. 300 Volt Condenser		B —32783	0.5 Mfd. Condenser (Eliminator)
27	W —21452	8. Mfd. 20 Volt Condenser		W —29754C	Remote Control Assembly Complete
28	W —28589	1,100 Ohms Resistor		L —32810	Housing
29	W —21454	350 Ohms Resistor		B —30372B	Cover Assm.
30	—21875	1 Megohm 1/4 Watt Resistor		G2 —31538	Dial Glass only
31	—23403	100,000 Ohms Resistor		W —30370	Dial
32	—23403	150,000 Ohms Resistor		B —32812	Dial Hand
33	—21454	1 Megohm Resistor		W —30371A	Gear Assm.
34	—23875	500,000 Ohm Resistor		G1 —30295	Knob (Tuning)
35	W —25521	450 Ohm Resistor		G5 —23472	Knob (Key)
36	—32331	55,000 Ohm 1/2 Watt Resistor		G1 —28036	Drive Shaft 15" (V. C.)
37	W —26525B	15,000 Ohm Resistor		G7 —25868	Drive Shaft 15" (Tuner)
38	G4 —28067	25,000 Ohm Resistor		G21—25868	Drive Shaft 30" (V. C.)
39	W —30436A	R. F. "A" Choke		G8 —25868	Drive Shaft 30" (Tuner)
40		Level Control		G20—25868	Drive Shaft 30" (Tuner)
41	G49—27975	Switch		W —26315	1/4 x 1/4 Dog Pt. S. P. Set Screw (4 used)
42	G48—27975	6-F-7 Socket		W —28029B	Steering Column Bracket
	W —27981A	6-B-7 Socket		G1 —28035	Strap Assm.
	W —30964	Tube Shield Base		R —186	1/4 x 3/4 R. H. Machine Screw (black) (1 used)
43	G25—27975	Tube Shield		W —20802	No. 10 Shakeproof Washer (black) (4 used)
44	G39—27975	42 Socket		R —181	No. 10 x 1/4 R. H. Machine Screw (black) (3 used)
45	L —35108	78 Socket		C —141	1/4 x 1 1/2 Fr. Hd. Machine Screw (2 used)
	G1 —32750	Antenna Body and Sleeve Assem.		W —31539	No. 2-56 x 1/4 R. H. Machine Screw (1 used)
46	Deleted See 77	Antenna Lead Assem.		G17—26317	Dial Light Bracket Assem.
47	G5 —31701	"A" Cable Assem.		G8 —32750	Dial Light Lead Assem.

MODEL 5V2, Fiver DeLuxe
Schematic, Socket, Parts
Voltage

CROSLLEY RADIO CORP.



CIRCUIT DIAGRAM OF MODEL 5V2

TUBE VOLTAGES—MODEL 5V2

Type	Where Used	Ef	Ep	Eg	Eg	Eg	Ek	Esup	Eg-osc	Ep-osc
6A7	Osc-Mod.	6.5	240	0	90	3	0	0	-15	125
6D6	I. F.	6.5	240	-3.5	125	0	0	0	—	—
6B7	Diode-AF	6.5	30	-3.5	40	0	—	—	—	—
42	Output	6.5	230	-18	240	0	—	—	—	—
80	Rectifier	5.1	—	—	—	240	—	—	—	—

ALL VOLTAGES ARE PLUS OR MINUS 10%. ALL DC VOLTAGES ARE MEASURED TO CHASSIS AT 117.5 LINE WITH 1000 OHMS PER VOLT VOLTMETER. POWER DEMAND IS 50 WATTS AT 110 VOLTS 60 CYCLES. ALIGNMENT AND SERVICING PROCEDURE SAME AS ON MODEL 5V1.

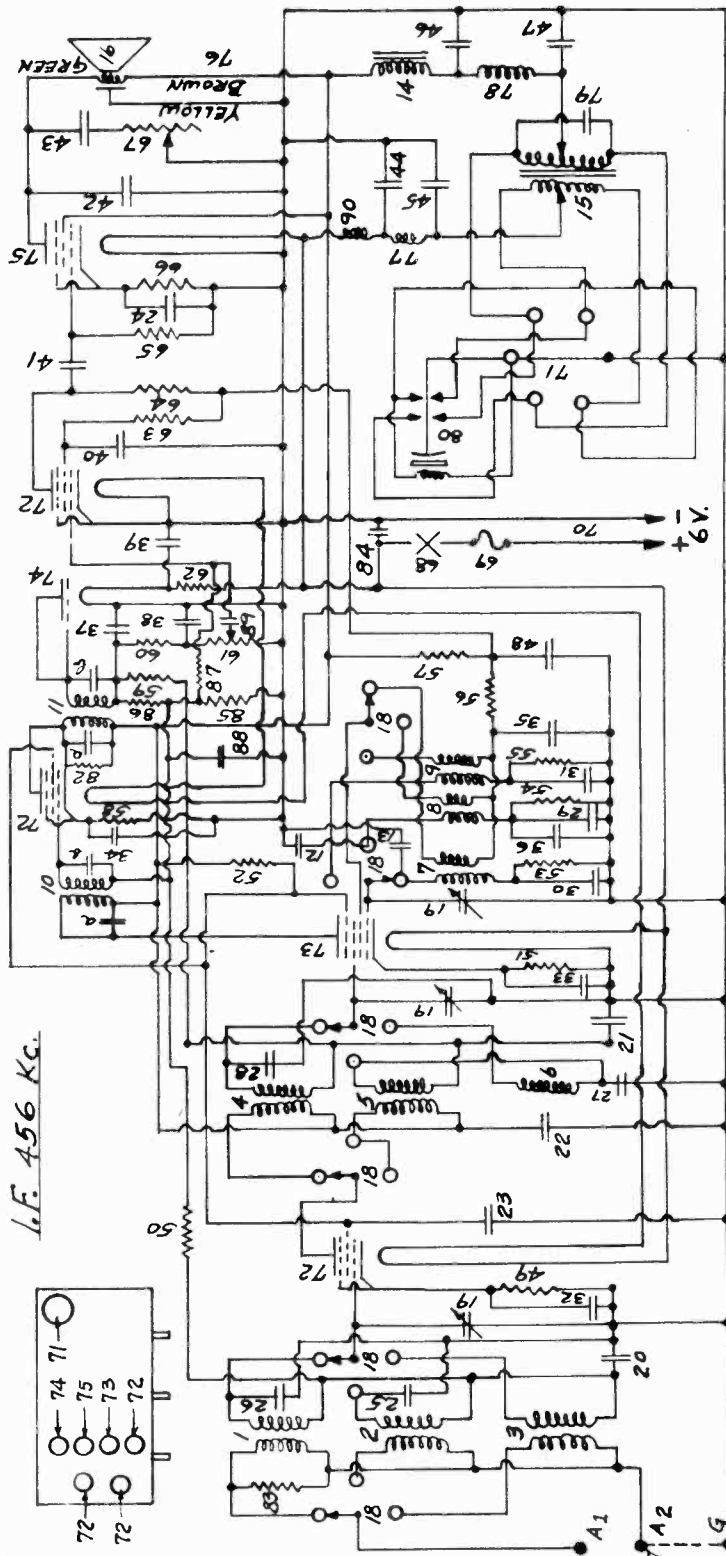
PARTS LIST—MODEL 5V2

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G24—32000	Preslector Coil	25	G10—26719	Ant. Gnd. Terminal
2	G15—32002	Oscillator Coil	26	B—33906A	A. C. Cord and Plug
	W—25025B	Coil Shield 1"	28	W—33556	A. C. Switch
	W—26890	Coil Socket Washer	29	W—25937	Level Control
	W—21451	Insulating Ring	30	W—21277A	705 Ohm Resistor
	W—21451C	Insulating Ring	31	21876	60,000 Ohm Resistor
3	C2—32033	1st. I. F. Transformer	32	26577	10,000 Ohm Resistor
	W—25024B	Coil Socket	33	26577	3 Megohm Resistor
	W—25200	Coil Socket	34	21455	500,000 Ohm Resistor
	W—26891	Insulating Washer	35	23785	500,000 Ohm Resistor
	W—21451C	Retaining Ring	36	23785	500,000 Ohm Resistor
	W—25200	Coil Socket	37	31883	8,500 Ohm Resistor
	W—25024B	Coil Socket	38	24980	25,000 Ohm Resistor
	W—26891	Insulating Washer	39	21875	25,000 Ohm Resistor
	W—21451C	Retaining Ring	40	23785	500,000 Ohm Resistor
	W—21451C	Retaining Ring	41	—418C	Speaker
	W—26891	Insulating Washer	42	W—3107A	Speaker Cable
	W—21451C	Tuning Condenser Gang	43	G6—30745	Power Transformer, 110 Volt, 60 Cy.
5	G21—33002	Dial Assembly	44	G7—30745	Power Transformer, 110 Volt, 25 Cy.
	G21—33005	1st. I. F. Primary Trimmer Cond.	45	G8—30745	Power Transformer, 220 Volt, 25 Cy.
	G8—32075	1st. I. F. Secondary Trimmer Cond.	46	W—33557	D. P. D. T. Switch
	W—25008A	1st. I. F. Transformer	47	G14—27812	Dial Light Bracket Assembly
6	G3—33005	0.0001 Mid. Condenser	48	G47—27456	6-A-7 Socket
	G3—33005	0.0005 Mid. Condenser	49	W—27981A	Tube Shield Base
	W—27668	0.001 Mid. Condenser	50	W—28632A	Tube Shield
	W—26571	0.0005 Mid. 400 Volt Condenser	51	W—27981A	6-D-6 Socket
	W—30321A	1.0 Mid. 160 Volt Condenser	52	B—5009D	Tube Shield Base
	W—28621	1.0 Mid. 400 Volt Condenser	53	G48—27456	6-17 Socket
	W—30323	0.01 Mid. 200 Volt Condenser	54	W—27981A	Tube Shield Base
	W—25537A	0.03 Mid. 400 Volt Condenser	55	W—28632A	Tube Shield
	W—30322A	0.00017 Mid. 200 Volt Condenser	56	G25—27456	42 Socket
	W—29271A	0.005 Mid. 200 Volt Condenser	57	W—30845	0.01 Mid. 400 Volt Condenser
	W—30059C	0.02 Mid. 400 Volt Condenser		W—21455	30,000 Ohm Resistor
	W—30059C	0.03 Mid. 400 Volt Condenser		W—27243	2,000 Ohm Resistor
	W—30059C	0.04 Mid. 400 Volt Condenser		W—32043	Knob (Black)
	W—30059C	0.05 Mid. 400 Volt Condenser		W—31535B	Knob (Brown)
	W—30059C	0.06 Mid. 400 Volt Condenser		W—31163	Escutcheon
	W—30059C	0.07 Mid. 400 Volt Condenser			
	W—30059C	0.08 Mid. 400 Volt Condenser			
	W—30059C	0.09 Mid. 400 Volt Condenser			
	W—30059C	0.10 Mid. 400 Volt Condenser			

CROSLY RADIO CORP.

MODEL 6B1, Battery Six
Schematic, Parts
Socket



PARTS LIST—MODEL 6B1
Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description
1	G20-32000	Low Freq. Ant. Coil
2	W-31267	Coil Shield Assm.
3	G28-32000	Retaining Ring, Ant. Coil
4	G1-31267	High Freq. Ant. Coil
5	W-30026A	Goi Shield Assm.
6	G31-32000	Police Band Ant. Coil
7	W-32597	Coil Shield Assm.
8	W-2151C	Coil Shield Assm.
9	C2-32001	L. F. R. F. Coil
10	W-25024B	Coil Socket
11	W-22200	Insulating Washer
12	W-21541C	Retaining Ring
13	G18-32001	Coil Shield
14	W-35802A	L. F. R. F. Coil
15	W-30026A	Coil Socket Ring
16	G19-32001	Pol. Band R. F. Sec. Coil
17	G2-32002	L. F. Osc. Ring (18 SW)
18	G6-31267	Coil Shield Assm. (18 SW)
19	W-26891	Insulating Washer
20	G1-21541C	Retaining Ring
21	W-30802A	Coil Shield
22	W-25026A	Coil Socket Ring
23	C4-30002	Pol. Band Osc. Coil
24	G6-31267	Coil Shield Assm.
25	W-26891	Insulating Washer
26	W-21541C	Retaining Ring
27	G34-32004	1st I. F. Trans. Assm.
28	G35-32004	2nd I. F. Trans. Assm.
29	G14-33009	H. F. Osc. Trimmer
30	G12-28069	L. F. Choke
31	W-31618	Power Transformer
32	W-33592A	Transformer Spring
33	G24-26719	Ant. Grid Terminal
34	W-33299	Ant. Grid Switch
35	C-32162C	Tuning Condenser Gang
36	W-33075B	Dial Assembly
37	G25-32086	Dial Hand only
38	W-34657A	Dial Cap Nut
39	W-34655B	Dial Cap Nut
40	W-34603	0.02 Mfd. 200 Volt Condenser
41	W-32379	0.02 Mfd. 200 Volt Condenser
42	W-32379	0.02 Mfd. 200 Volt Condenser
43	W-34896	8 Mfd. 250 Volt Condenser
44	W-34896	8 Mfd. 250 Volt Condenser
45	G1-33008	H. F. Ant. Trimmer Condenser
46	G9-33009	H. F. F. Trimmer Condenser
47	G7-33006	L. F. Osc. Series Trimmer Condenser
48	G6-34000	L. F. Mfd. 200 Volt Condenser
49	W-34921	0.02 Mfd. 200 Volt Condenser
50	W-28621	0.02 Mfd. 200 Volt Condenser
51	W-32378	0.01 Mfd. 400 Volt Condenser
52	G11-34000	0.00015 Mfd. 400 Volt Condenser
53	W-26152A	0.0001 Mfd. 400 Volt Condenser
54	W-34897	100 Mmf. 2 Volt Condenser
55	G14-33009	H. F. Osc. Trimmer
56	G12-28069	L. F. Choke
57	W-31618	Power Transformer
58	W-33592A	Transformer Spring
59	G24-26719	Ant. Grid Terminal
60	W-33299	Ant. Grid Switch
61	C-32162C	Tuning Condenser Gang
62	W-33075B	Dial Assembly
63	G25-32086	Dial Hand only
64	W-34657A	Dial Cap Nut
65	W-34655B	Dial Cap Nut
66	W-34603	0.02 Mfd. 200 Volt Condenser
67	W-32379	0.02 Mfd. 200 Volt Condenser
68	W-32379	0.02 Mfd. 200 Volt Condenser
69	W-34896	8 Mfd. 250 Volt Condenser
70	G1-33008	H. F. Ant. Trimmer Condenser
71	G9-33009	H. F. F. Trimmer Condenser
72	G7-33006	L. F. Osc. Series Trimmer Condenser
73	G6-34000	L. F. Mfd. 200 Volt Condenser
74	W-34921	0.02 Mfd. 200 Volt Condenser
75	W-28621	0.02 Mfd. 200 Volt Condenser
76	W-32378	0.01 Mfd. 400 Volt Condenser
77	G11-34000	0.00015 Mfd. 400 Volt Condenser
78	W-26152A	0.0001 Mfd. 400 Volt Condenser
79	W-34897	100 Mmf. 2 Volt Condenser
80	G14-33009	H. F. Osc. Trimmer
81	G12-28069	L. F. Choke
82	W-31618	Power Transformer
83	W-33592A	Transformer Spring
84	G24-26719	Ant. Grid Terminal
85	W-33299	Ant. Grid Switch
86	C-32162C	Tuning Condenser Gang
87	W-33075B	Dial Assembly
88	G25-32086	Dial Hand only
89	W-34657A	Dial Cap Nut
90	W-34655B	Dial Cap Nut
91	W-34603	0.02 Mfd. 200 Volt Condenser
92	W-32379	0.02 Mfd. 200 Volt Condenser
93	W-32379	0.02 Mfd. 200 Volt Condenser
94	W-34896	8 Mfd. 250 Volt Condenser
95	G1-33008	H. F. Ant. Trimmer Condenser
96	G9-33009	H. F. F. Trimmer Condenser
97	G7-33006	L. F. Osc. Series Trimmer Condenser
98	G6-34000	L. F. Mfd. 200 Volt Condenser
99	W-34921	0.02 Mfd. 200 Volt Condenser
100	W-28621	0.02 Mfd. 200 Volt Condenser
101	W-32378	0.01 Mfd. 400 Volt Condenser
102	G11-34000	0.00015 Mfd. 400 Volt Condenser
103	W-26152A	0.0001 Mfd. 400 Volt Condenser
104	W-34897	100 Mmf. 2 Volt Condenser
105	G14-33009	H. F. Osc. Trimmer
106	G12-28069	L. F. Choke
107	W-31618	Power Transformer
108	W-33592A	Transformer Spring
109	G24-26719	Ant. Grid Terminal
110	W-33299	Ant. Grid Switch
111	C-32162C	Tuning Condenser Gang
112	W-33075B	Dial Assembly
113	G25-32086	Dial Hand only
114	W-34657A	Dial Cap Nut
115	W-34655B	Dial Cap Nut
116	W-34603	0.02 Mfd. 200 Volt Condenser
117	W-32379	0.02 Mfd. 200 Volt Condenser
118	W-32379	0.02 Mfd. 200 Volt Condenser
119	W-34896	8 Mfd. 250 Volt Condenser
120	G1-33008	H. F. Ant. Trimmer Condenser
121	G9-33009	H. F. F. Trimmer Condenser
122	G7-33006	L. F. Osc. Series Trimmer Condenser
123	G6-34000	L. F. Mfd. 200 Volt Condenser
124	W-34921	0.02 Mfd. 200 Volt Condenser
125	W-28621	0.02 Mfd. 200 Volt Condenser
126	W-32378	0.01 Mfd. 400 Volt Condenser
127	G11-34000	0.00015 Mfd. 400 Volt Condenser
128	W-26152A	0.0001 Mfd. 400 Volt Condenser
129	W-34897	100 Mmf. 2 Volt Condenser
130	G14-33009	H. F. Osc. Trimmer
131	G12-28069	L. F. Choke
132	W-31618	Power Transformer
133	W-33592A	Transformer Spring
134	G24-26719	Ant. Grid Terminal
135	W-33299	Ant. Grid Switch
136	C-32162C	Tuning Condenser Gang
137	W-33075B	Dial Assembly
138	G25-32086	Dial Hand only
139	W-34657A	Dial Cap Nut
140	W-34655B	Dial Cap Nut
141	W-34603	0.02 Mfd. 200 Volt Condenser
142	W-32379	0.02 Mfd. 200 Volt Condenser
143	W-32379	0.02 Mfd. 200 Volt Condenser
144	W-34896	8 Mfd. 250 Volt Condenser
145	G1-33008	H. F. Ant. Trimmer Condenser
146	G9-33009	H. F. F. Trimmer Condenser
147	G7-33006	L. F. Osc. Series Trimmer Condenser
148	G6-34000	L. F. Mfd. 200 Volt Condenser
149	W-34921	0.02 Mfd. 200 Volt Condenser
150	W-28621	0.02 Mfd. 200 Volt Condenser
151	W-32378	0.01 Mfd. 400 Volt Condenser
152	G11-34000	0.00015 Mfd. 400 Volt Condenser
153	W-26152A	0.0001 Mfd. 400 Volt Condenser
154	W-34897	100 Mmf. 2 Volt Condenser
155	G14-33009	H. F. Osc. Trimmer
156	G12-28069	L. F. Choke
157	W-31618	Power Transformer
158	W-33592A	Transformer Spring
159	G24-26719	Ant. Grid Terminal
160	W-33299	Ant. Grid Switch
161	C-32162C	Tuning Condenser Gang
162	W-33075B	Dial Assembly
163	G25-32086	Dial Hand only
164	W-34657A	Dial Cap Nut
165	W-34655B	Dial Cap Nut
166	W-34603	0.02 Mfd. 200 Volt Condenser
167	W-32379	0.02 Mfd. 200 Volt Condenser
168	W-32379	0.02 Mfd. 200 Volt Condenser
169	W-34896	8 Mfd. 250 Volt Condenser
170	G1-33008	H. F. Ant. Trimmer Condenser
171	G9-33009	H. F. F. Trimmer Condenser
172	G7-33006	L. F. Osc. Series Trimmer Condenser
173	G6-34000	L. F. Mfd. 200 Volt Condenser
174	W-34921	0.02 Mfd. 200 Volt Condenser
175	W-28621	0.02 Mfd. 200 Volt Condenser
176	W-32378	0.01 Mfd. 400 Volt Condenser
177	G11-34000	0.00015 Mfd. 400 Volt Condenser
178	W-26152A	0.0001 Mfd. 400 Volt Condenser
179	W-34897	100 Mmf. 2 Volt Condenser
180	G14-33009	H. F. Osc. Trimmer
181	G12-28069	L. F. Choke
182	W-31618	Power Transformer
183	W-33592A	Transformer Spring
184	G24-26719	Ant. Grid Terminal
185	W-33299	Ant. Grid Switch
186	C-32162C	Tuning Condenser Gang
187	W-33075B	Dial Assembly
188	G25-32086	Dial Hand only
189	W-34657A	Dial Cap Nut
190	W-34655B	Dial Cap Nut
191	W-34603	0.02 Mfd. 200 Volt Condenser
192	W-32379	0.02 Mfd. 200 Volt Condenser
193	W-32379	0.02 Mfd. 200 Volt Condenser
194	W-34896	8 Mfd. 250 Volt Condenser
195	G1-33008	H. F. Ant. Trimmer Condenser
196	G9-33009	H. F. F. Trimmer Condenser
197	G7-33006	L. F. Osc. Series Trimmer Condenser
198	G6-34000	L. F. Mfd. 200 Volt Condenser
199	W-34921	0.02 Mfd. 200 Volt Condenser
200	W-28621	0.02 Mfd. 200 Volt Condenser
201	W-32378	0.01 Mfd. 400 Volt Condenser
202	G11-34000	0.00015 Mfd. 400 Volt Condenser
203	W-26152A	0.0001 Mfd. 400 Volt Condenser
204	W-34897	100 Mmf. 2 Volt Condenser
205	G14-33009	H. F. Osc. Trimmer
206	G12-28069	L. F. Choke
207	W-31618	Power Transformer
208	W-33592A	Transformer Spring
209	G24-26719	Ant. Grid Terminal
210	W-33299	Ant. Grid Switch
211	C-32162C	Tuning Condenser Gang
212	W-33075B	Dial Assembly
213	G25-32086	Dial Hand only
214	W-34657A	Dial Cap Nut
215	W-34655B	Dial Cap Nut
216	W-34603	0.02 Mfd. 200 Volt Condenser
217	W-32379	0.02 Mfd. 200 Volt Condenser
218	W-32379	0.02 Mfd. 200 Volt Condenser
219	W-34896	8 Mfd. 250 Volt Condenser
220	G1-33008	H. F. Ant. Trimmer Condenser
221	G9-33009	H. F. F. Trimmer Condenser
222	G7-33006	L. F. Osc. Series Trimmer Condenser
223	G6-34000	L. F. Mfd. 200 Volt Condenser
224	W-34921	0.02 Mfd. 200 Volt Condenser
225	W-28621	0.02 Mfd. 200 Volt Condenser
226	W-32378	0.01 Mfd. 400 Volt Condenser
227	G11-34000	0.00015 Mfd. 400 Volt Condenser
228	W-26152A	0.0001 Mfd. 400 Volt Condenser
229	W-34897	100 Mmf. 2 Volt Condenser
230	G14-33009	H. F. Osc. Trimmer
231	G12-28069	L. F. Choke
232	W-31618	Power Transformer
233	W-33592A	Transformer Spring
234	G24-26719	Ant. Grid Terminal
235	W-33299	Ant. Grid Switch
236	C-32162C	Tuning Condenser Gang
237	W-33075B	Dial Assembly
238	G25-32086	Dial Hand only
239	W-34657A	Dial Cap Nut
240	W-34655B	Dial Cap Nut
241	W-34603	0.02 Mfd. 200 Volt Condenser
242	W-32379	0.02 Mfd. 200 Volt Condenser
243	W-32379	0.02 Mfd. 200 Volt Condenser
244	W-34896	8 Mfd. 250 Volt Condenser
245	G1-33008	H. F. Ant. Trimmer Condenser
246	G9-33009	H. F. F. Trimmer Condenser
247	G7-33006	L. F. Osc. Series Trimmer Condenser
248	G6-34000	L. F. Mfd. 200 Volt Condenser
249	W-34921	0.02 Mfd. 200 Volt Condenser
250	W-28621	0.02 Mfd. 200 Volt Condenser
251	W-32378	0.01 Mfd. 400 Volt Condenser
252	G11-34000	0.00015 Mfd. 400 Volt Condenser
253	W-26152A	0.0001 Mfd. 400 Volt Condenser
254	W-34897	100 Mmf. 2 Volt Condenser
255	G14-33009	H. F. Osc. Trimmer
256	G12-28069	L. F. Choke
257	W-31618	Power Transformer
258	W-33592A	Transformer Spring
259	G24-26719	Ant. Grid Terminal
260	W-33299	Ant. Grid Switch
261	C-32162C	Tuning Condenser Gang
262	W-33075B	Dial Assembly
263	G25-32086	Dial Hand only
264	W-34657A	Dial Cap Nut
265	W-34655B	Dial Cap Nut
266	W-34603	0.02 Mfd. 200 Volt Condenser
267	W-32379	0.02 Mfd. 200 Volt Condenser
268	W-32379	0.02 Mfd. 200 Volt Condenser
269	W-34896	8 Mfd. 250 Volt Condenser
270	G1-33008	H. F. Ant. Trimmer Condenser
271	G9-33009	H. F. F. Trimmer Condenser
272	G7-33006	L. F. Osc. Series Trimmer Condenser
273	G6-34000	L. F. Mfd. 200 Volt Condenser
274	W-34921	0.02 Mfd. 200 Volt Condenser
275	W-28621	0.02 Mfd. 200 Volt Condenser
276	W-32378	0.01 Mfd. 400 Volt Condenser
277	G11-34000</	

MODEL 6B1, Battery Six
Chassis, Trimmers

CROSLLEY RADIO CORP.

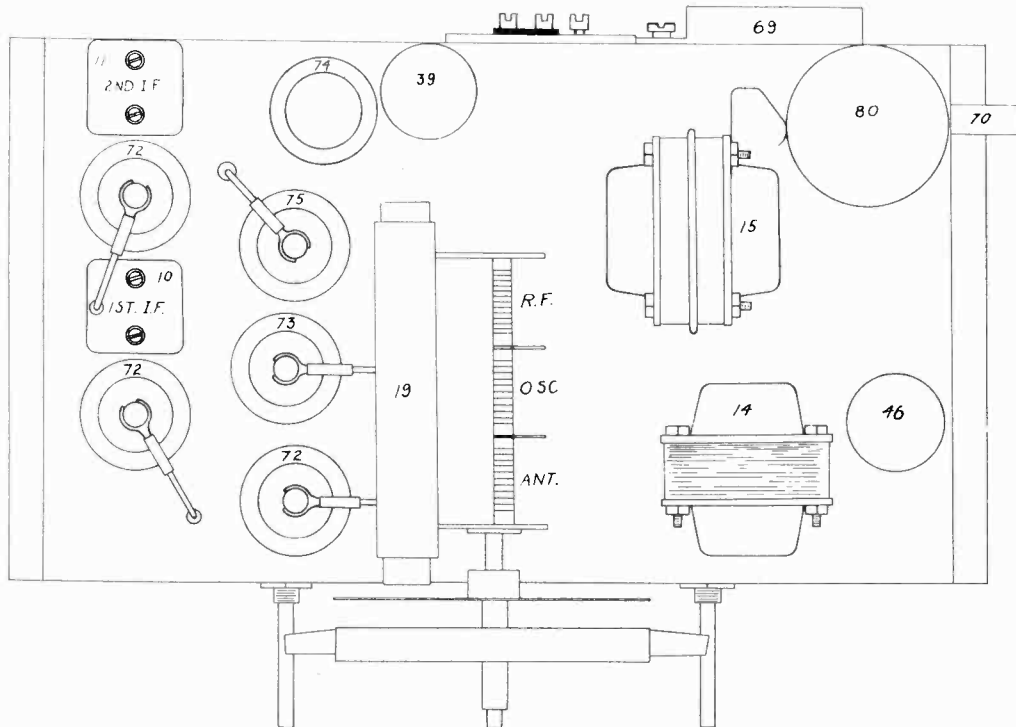


FIG. 2 - TOP VIEW

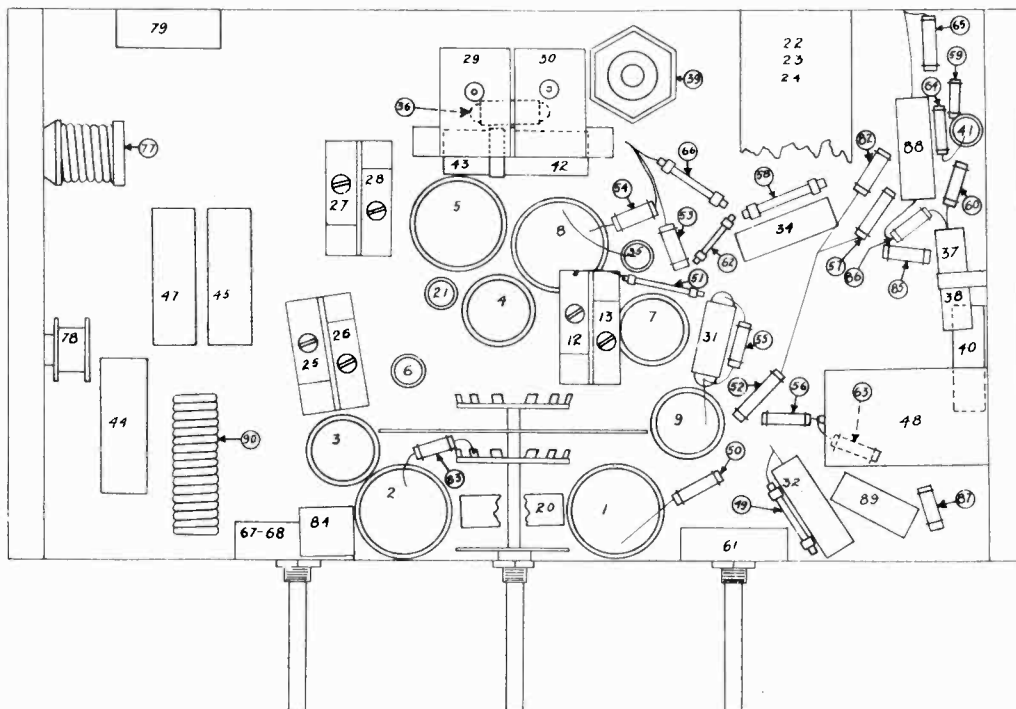


FIG. 3 - BOTTOM VIEW

- Osc. Parallel Trimmer Condenser, Band No. 1—Item No. 13.
- Osc. Parallel Trimmer Condenser, Band No. 2—Item No. 12.
- Osc. Series Trimmer Condenser, Band No. 1—Item No. 30.
- Osc. Series Trimmer Condenser, Band No. 2—Item No. 29.

- Ant. Parallel Trimmer Condenser, Band No. 1—Item No. 26.
- Ant. Parallel Trimmer Condenser, Band No. 2—Item No. 25.
- R.F. Parallel Trimmer Condenser, Band No. 1—Item No. 28.
- R.F. Parallel Trimmer Condenser, Band No. 2—Item No. 27.

MODEL 6B1, Battery Six Voltage, Alignment

CROSLLEY RADIO CORP.

MAY 1935 MODEL 6B1—BATTERY SIX No. 102

SPECIFICATIONS

The Crosley Model 6B1 is a six tube superheterodyne receiver designed for operation on a six volt storage battery. It tunes in three steps covering the following frequencies:

- Band No. 1—540-1725 Kilocycles.
 - Band No. 2—5600-15300 Kilocycles.
 - Band No. 3—1700-5500 Kilocycles.
- Band No. 1 is calibrated on the dial in Myriacycles (10 Kc.) and Bands No. 2 and 3 are calibrated in Mega-

cycles (1000 Kc.). It employs A. V. C., continuously variable tone control, class "A" pentode audio amplification and a band spread pointer, 36:1 ratio.

TUBES AND VOLTAGE LIMITS

The following are the tubes used and the voltages measured from the tube contacts with the chassis with a 250,000 ohm, 250 volt voltmeter with the receiver in full operating condition but with no signal to the antenna and using a six volt storage battery. A low range voltmeter should be used in measuring the filament voltages. Voltage limits are plus or minus 10% of the values given.

TUBE VOLTAGES—MODEL 6B1

Type	Where Used	Ef	Epl	Eg2	Eg	Ek
15	R. F. Amp.	1.98	175	80	80	2.5
6A7	Osc. Mod.	5.95	175	80	6 to 12	4.0
3H	I. F. Amp.	1.98	0	80		2.5
15	Det. & A. V. C.	2.0	0	50 V. C. Full		V. C. Full 0
15	A. F. Amp.	1.98	156	175		18
38	Output	3.95				

ALL VOLTAGES GIVEN ARE PLUS OR MINUS 10% AND ARE MEASURED WITH A 250 VOLT (1000 OHMS PER VOLT) VOLTMETER WITH A 6 VOLT BATTERY. A LOW RANGE VOLTMETER USED FOR MEASURING FILAMENTES.

POWER DEMAND APPROXIMATELY 12 WATTS. "A" BATTERY DRAIN AT 6 VOLTS APPROXIMATELY 2 AMP.

CIRCUIT DESCRIPTION

The circuit consists of one stage of R.F. amplification, an oscillator-modulator, one stage of I.F. amplification, diode detector, automatic volume control, two stages of audio amplification and power supply. The R. F. stage employs a Type 15 tube, the oscillator-modulator stage uses a Type 6A7 tube and the I.F. amplifier also uses a Type 15 tube. A Type 30 tube is used as a diode detector and to supply A. V. C. voltage to the control grids of the R.F. oscillator-modulator, I.F. and first A.F. tubes. The first A.F. amplifier employs a Type 15 tube which is resistance coupled to the Type 38 power output pentode tube. A permanent magnet, moving coil type speaker is used and is coupled to the plate of the Type 38 tube through an output transformer which is located on the speaker. A 6SA4 Synchronotube, self-rectifying type vibrator, is used to furnish the "B" power supply.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and should need no readjustment unless some coil or condenser has been replaced. Do not change the setting of any trimmer condenser unless it is definitely known that the adjustment is necessary. If re-alignment is found necessary, the circuits can be properly adjusted only with the use of a modulated test oscillator and an output meter.

CONNECTING OUTPUT METER

The output meter may be connected to the output circuit by connecting one terminal to the plate of the 38 power output tube and the other terminal to the screen

the 1st I.F. transformer shown in Fig. 2.

Repeat operation (IV) to insure accurate adjustment of the I.F. tuning condensers.

PEAKING R.F. CIRCUITS

Connecting Test Oscillator To The Receiver: It is necessary to connect a DUMMY ANTENNA in series with the test oscillator and the antenna terminal of the receiver. On Bands No. 1 and No. 3 this consists of a .0002 mid. mica condenser. On Band No. 2 it consists of a carbon resistor of approximately 400 ohms. With the tuning condenser plates completely meshed make certain that the dial pointer is exactly horizontal. If not, loosen the nut and set the pointer horizontal and tighten the nut again. The setting of the band spread pointer is not important.

To Peak Band No. 1:

NOTE: Be sure to use the lowest test oscillator output that will give a reasonable scale deflection on the output meter. 20-30 volts output should be sufficient for satisfactory alignment.

- (a) Set the band change switch to Band No. 1.
- (b) Set the test oscillator to 1400 kilocycles. Rotate the station selector until the dial pointer points to 140 on the dial. Then adjust the oscillator parallel trimmer condenser, Fig. 3, for Band No. 1 for maximum reading on the output meter.
- (c) With the same dial setting peak the Ant. and R.F. parallel trimmer condensers for Band No. 1.
- (d) Set the test oscillator to 600 kilocycles.
- (e) Tune in the 600 kilocycle signal with the station selector, in the region of 60 on the dial, for maximum reading on the output meter.
- (f) Close the oscillator series trimmer condenser for Band No. 1, Fig. 3, 1/2 turn and re-tune the station selector to the 600 kilocycle signal for maximum reading on the output meter.
- (g) Repeat operation (f) as many times as necessary to obtain the highest reading on the output meter. However, if the meter reads lower after operation (f) open the oscillator series trimmer condenser 1/2 turn and re-tune the station selector to the 600 kilocycle signal, noting the reading on the output meter as above, and repeat as many times as necessary to obtain the highest meter reading. Do not re-set the parallel trimmer condensers at this frequency.
- (h) Repeat operations (b) and (c) for more accurate adjustments.

To Peak Band No. 2:

NOTE: Be sure to change the DUMMY ANTENNA as described in (I) under Peaking R.F. Circuits.

- (a) Set the test oscillator to 15 megacycles. Rotate the station selector until the dial pointer points to 15 on the dial (Band No. 2).
- (b) Peak the oscillator parallel-trimmer condenser for Band No. 2 on the first signal heard when closing this condenser.
- (c) Close the R.F. parallel trimmer condenser for Band No. 2 and then open it 1/2 turn.
- (d) Close the Ant. parallel trimmer condenser for Band No. 2 and then open it 1/4 turn.
- (e) Set the test oscillator to 15 megacycles.
- (f) Rotate the station selector until the dial pointer points to 15 on the dial (Band No. 2).
- (g) Peak the oscillator parallel-trimmer condenser for Band No. 2 on the first signal heard when closing this condenser.

NOTE: To check on the adjustment of the oscillator parallel-trimmer condenser.

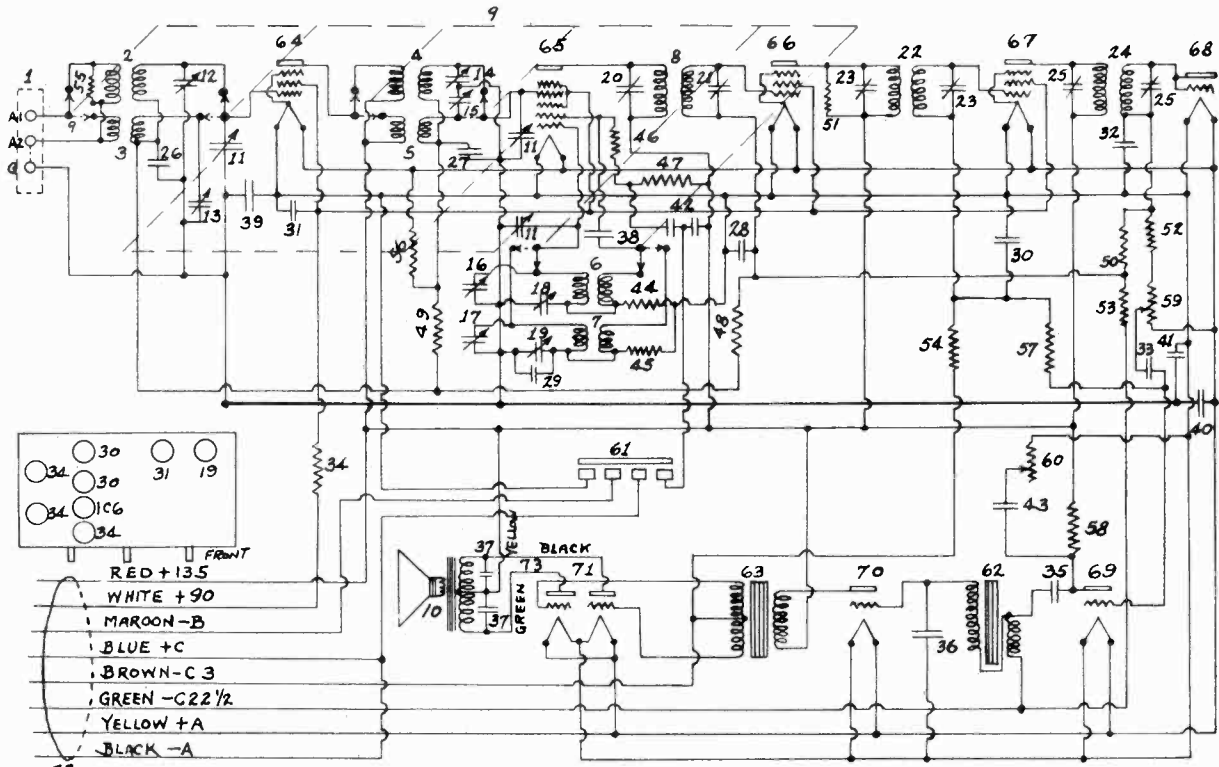
- (1) Increase the output of the test oscillator not more than ten times.
- (2) Try to tune in the 15 megacycle signal with the station selector at approximately 14 on the dial.
- (3) If the 15 megacycle signal is heard at approximately 14 on the dial in addition to 15 on the dial the oscillator parallel trimmer condenser has been aligned on the correct frequency.
- (h) Reduce the output of the test oscillator to the previous output and re-tune the station selector to the 15 megacycle signal at 15 on the dial.
- (i) Close the R.F. parallel trimmer condenser for Band No. 2.
- (j) Open the R.F. parallel trimmer condenser for Band No. 2 not more than 1/8 turn and re-tune the station selector to the 15 megacycle signal for maximum output.
- (k) Repeat operation (j) as many times as necessary to obtain the highest reading on the output meter on the first peak from the closed position.
- (l) Close the Ant. parallel trimmer condenser for Band No. 2.
- (m) Open the Ant. parallel trimmer condenser for Band No. 2 not more than 1/8 turn and re-tune the station selector to the 15 megacycle signal for maximum output.
- (n) Repeat operation (m) as many times as necessary to obtain the highest reading on the output meter on the first peak from the closed position.
- (o) Set the test oscillator to 6 megacycles.
- (p) Tune in the 6 megacycle signal with the station selector in the region of 6 on the dial (Band No. 2) for maximum reading on the output meter.
- (q) Close the oscillator series trimmer condenser for Band No. 2, Fig. 3, 1/2 turn and re-tune the station selector to the 6 megacycle signal for maximum reading on the output meter.
- (r) Repeat operation (q) as many times as necessary to obtain the highest reading on the output meter. However, if the meter reads lower after operation (q) open the oscillator series trimmer condenser 1/2 turn and re-tune the station selector to the 6 megacycle signal, noting the reading on the output meter as above, and repeat as many times as necessary to obtain the highest meter reading. Do not re-set the parallel trimmer condenser at this frequency.
- (s) Repeat operations (i), (j) and (k) above in the order given.
- (t) Repeat operations (l), (m) and (n) above in the order given.

The circuits of Band No. 3 cannot be aligned as there are no trimmer condensers provided for this band.

IV.

MODEL 8B3, Battery 8 AF
Schematic, Parts

CROSLLEY RADIO CORP.



Parts List Model 8B3

Figures in first column correspond to figures in diagram

1	G16	26719	Ant.-Gnd. Term.	38	W	25435	.003 Mfd. 400 Volt
2	G3	32000	L. F. Ant. Trans.	39	W	24049-B	1 Mfd. 200 Volt
3	G28	32000	H. F. Ant. Trans.	40	W	29910-A	.25 Mfd. 200 Volt
4	G2	32001	L. F. R. F. Trans.	41	W	30321-A	1.0 Mfd. 160 Volt
5	G18	32001	H. F. R. F. Trans.	42	W	33990	Dual 8 Mfd. Elect.
6	G2	32002	L. F. Osc. Trans.	43	W	27216	.05 Mfd. 200 Volt
7	G21	32002	H. F. Osc. Trans.	44	W	21875	100,000 Ohms
8	G1	32004	1st I. F. Trans.	45	W	21875	100,000 Ohms
9	B	34094	Band Change Switch	46	W	21876	10,000 Ohms
10	B	42PM	Speaker	47	W	27121	5,000 Ohms
11	G25	33002	Variable Cond.	48	W	21455	300,000 Ohms
12	G1	33008	L. F. Ant. Trim. Cond.	49	W	21455	300,000 Ohms
13	G1	33008	H. F. Ant. Trim. Cond.	50	W	26577	3 Meg.
14	G9	33009	L. F. R. F. Trim. Cond.	51	W	21455	300,000 Ohms
15	G9	33009	H. F. R. F. Trim. Cond.	52	W	23403	150,000 Ohms
16	G18	33009	L. F. Osc. Trim. Cond.	53	W	33490	10 Meg.
17	G18	33009	H. F. Osc. Trim. Cond.	54	W	21455	300,000 Ohms
18	G20	33006	L. F. Osc. Series T. C.	55	W	31094	4,500 Ohms
19	G6	33006	H. F. Osc. Series T. C.	56	W	26578	5 Meg.
20	G6	33006	1st I. F. Pri. T. C.	57	W	21454	1 Meg.
21	G6	33006	1st I. F. Sec. T. C.	58	W	22196	20,000 Ohms
22	G21	32004	2nd I. F. Trans.	59	W	34095	Level Control
23	G21	32004	Trimmer Cond.	60	W	33993-A	Tone Control
24	G22	32004	3rd I. F. Trans.	61	W	33993-A	On-Off Switch
25	W	32379	Trimmer Cond.	62	G1	34189	1st Audio Trans.
26	W	32379	.02 Mfd. 200 Volt	63	G2	34189	2nd Audio Trans.
27	W	32379	.02 Mfd. 200 Volt	64	G31	27975	34 Socket
28	W	27216	.05 Mfd. 200 Volt	65	G84	33070	1C6 Socket
29	G3	34000	2200 Mmfid.	66	G31	27975	34 Socket
30	W	27216	.05 Mfd. 200 Volt	67	G31	27975	34 Socket
31	W	28869	2.0 Mfd. 200 Volt	68	G9	33070	30 Socket
32	W	27932	.0001 Mfd. 200 Volt	69	G9	27975	30 Socket
33	W	27216	.05 Mfd. 200 Volt	70	G14	27975	31 Socket
34	W	24814	7000 Ohms	71	G44	27975	19 Socket
35	W	29910-A	.25 Mfd. 200 Volt	72	G3	29237	Cable & Marker Assem.
36	G1	34004	.00025 Mica Cond.	73	W	31009-A	Speaker Cable
37	W	31158	Dual .006 Mfd. 400 Volt				

1.F. 456 Kc.

MODEL 515, 5515, Fiver
Voltage, Trimmers
Alignment, Chassis

CROSLLEY RADIO CORP.

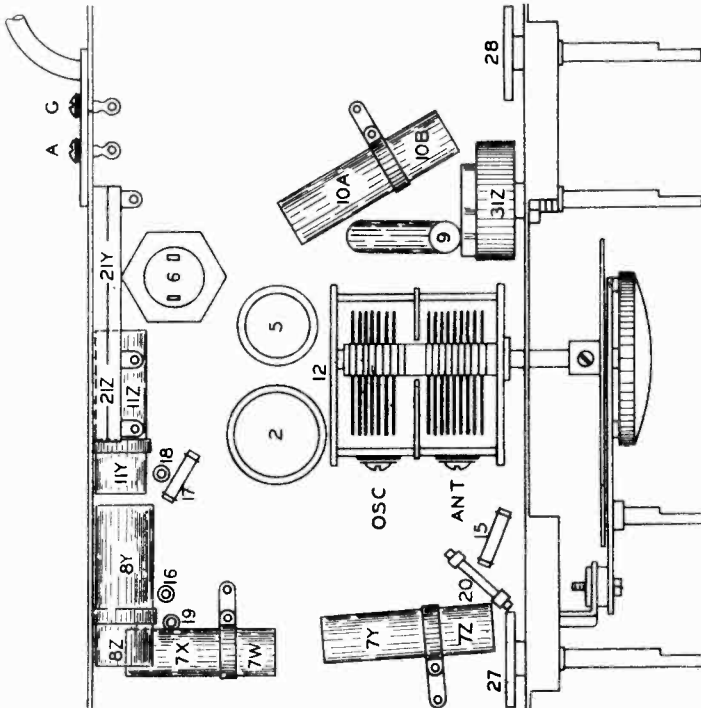


Fig. 3. Bottom View 515 and 5515

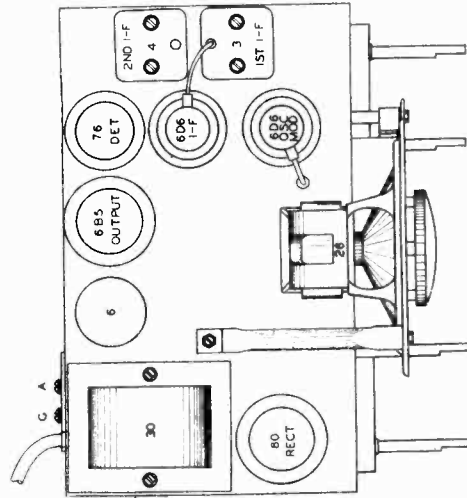


Fig. 2-A. Top View 515

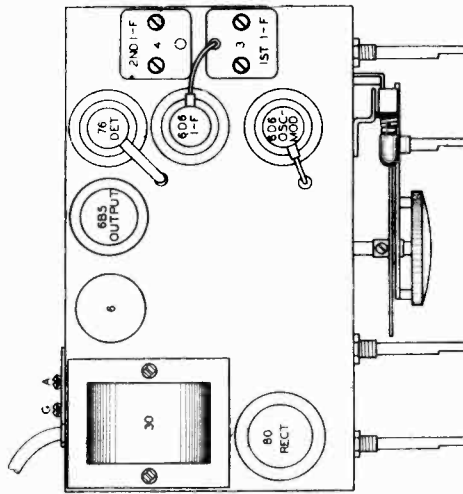


Fig. 2-B. Top View 5515

TUBE SOCKET VOLTAGE READINGS

Tube Function	H	P	S	Su	G	P2	K
6D6 Osc-Mod	6.3	210	120	0	28	—	31
6D6 I. F. Amp	6.3	210	120	3	0	—	3
76 Detector	6.3	86	—	—	0	—	8.5
6B5 Output	6.3	200	—	—	0	210	0
80 Rectifier	4.9	280	—	—	—	—	—

Connecting Output Meter.

Connect one terminal of the output meter to P1 and the other terminal to P2 of the 6B5 output tube. Look at the bottom of the tube with the filament prongs in the cabinet. It is available or adaptable for operation on A-C lines as follows: 110 V.-60 cycles, 110 V.-25 filaments and P2 will be next to P1. Be sure the meter tuning from approximately 540 to 1570 kilocycles in the broadcast band and from 1570 to 4000 kilocycles in the police and amateur band.

Peaking I. F. Stages at 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. series condenser to the top cap of the 6D6 Osc-Mod. tube, leaving the tube's grid clip in place. KEEP THE GENERATOR LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.

(b) Connect the ground lead of the signal generator to the chassis frame or ground terminal of the receiver.

(c) Set the signal generator to 450 kilocycles.

(d) Rotate the receiver tuning condenser until the rotor plates are completely out of mesh.

(e) Turn the band selector switch to the right hand position. (Short Wave Band).

(f) Turn the volume control of the receiver on full.

(g) With the signal generator set to the lowest usable output level adjust the I. F. trimmer condensers located on top of the I. F. transformers, Fig. 2A&B for maximum output.

NOTE: Make the adjustments very carefully, going over them several times to insure that the final setting is at resonant frequency. An insulated screw driver should be used to insure accurate adjustments.

Aligning R. F. Circuits.

(a) Turn the band selector switch to the left hand position. (Broadcast Band).

(b) Leave the receiver tuning condenser rotor plates completely out of mesh.

(c) Connect the output lead from the signal generator through a .00025 mfd. series condenser to the antenna terminal of the receiver.

(d) Set the signal generator to approximately 1570 kilocycles.

(e) Adjust the trimmer on the "Osc." section of the tuning condenser gang for maximum output. (Fig. 3).

(f) Set the signal generator to 1400 kilocycles.

(g) Tune in the 1400 kilocycle signal with the station selector for maximum output.

NOTE: Do not disturb the setting of the "Osc." trimmer as this is adjusted at 1570 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

(h) Adjust the trimmer on the "Ant." section of the tuning condenser gang for maximum output.

NOTE: There are no adjustments on this receiver for the Police Band.

SPECIFICATIONS

The Crosley models 515 and 5515 employ the same chassis. The 515 is a table model with speaker attached and the 5515 is a console model with speaker mounted in the cabinet. It is available or adaptable for operation on A-C lines as follows: 110 V.-60 cycles, 110 V.-25 filaments and P2 will be next to P1. Be sure the meter tuning from approximately 540 to 1570 kilocycles in the broadcast band and from 1570 to 4000 kilocycles in the police and amateur band.

The tubes used are 6D6 Oscillator-Modulator, 6D6 I. F. Amplifier, 76 Detector, 6B5 Output and type 80 Rectifier.

SOCKET VOLTAGES

The tube socket voltages are measured from the socket contacts to the chassis with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and no signal input. Readings may vary plus or minus 10% of values given. Filament readings are taken with a low range A. C. voltmeter.

CROSLY RADIO CORP.

MODEL 525,505
Schematic, Parts

OCTOBER 1935

PARTS LIST—MODEL 525

Figures in first column refer to parts shown in diagrams.

Part numbers with A, B, etc., following, mean duplicate parts.

Part numbers with Z, Y, X, etc., following, mean parts having multiple sections.

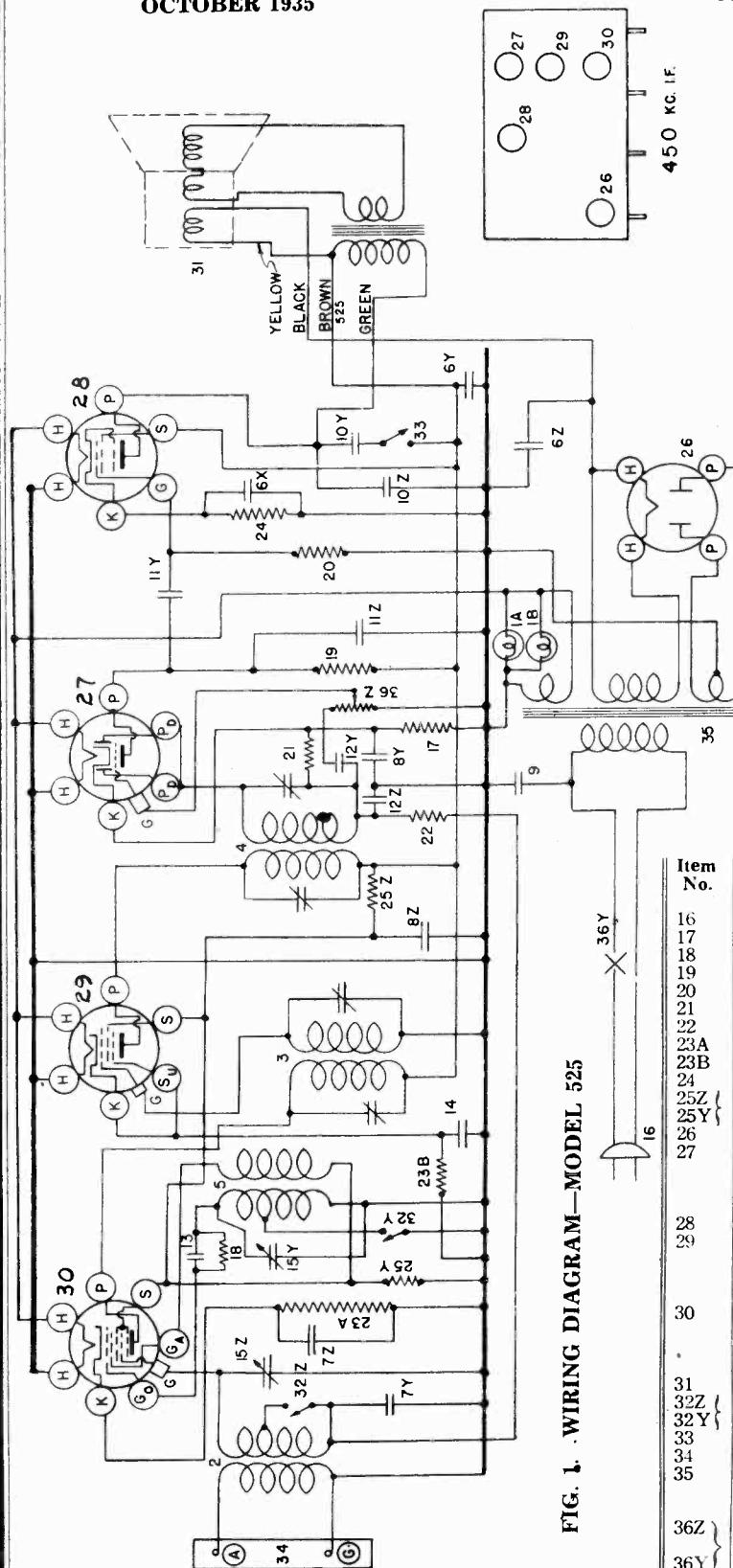


FIG. 1. WIRING DIAGRAM—MODEL 525

Item No.	Part No.	Description
1A	G4 -27134	Dial Light Bracket Assem
1B	G4 -27134	Dial Light Bracket Assem
2	G42-32000	Coil, Ant. Trans.
	W -30802A	Coil Shield
3	W -30026A	Coil Retaining Ring
	W -36178	Coil Insulator
4	G50-32004	Coil, 1st. I. F.
	G3 -31927	Coil Shield
5	W -35037A	Coil Insulator
	G49-32004	Coil, 2nd. I. F.
6Z	G3 -31927	Coil Shield
	W -35037A	Coil Insulator
6Y	G43-32002	Coil Oscillator
	W -25025B	Coil Shield
6X	W -21541C	Coil Retaining Ring
	W -26891	Coil Insulator
7Z	W -35750	Condenser, 8 Mfd. 450 V
	W -28623	Condenser, 6 Mfd. 450 V
7Y	W -28622	Condenser, 12 Mfd. 25 V
	W -28622	Condenser, .02 Mfd. 200 V
8Z	W -30805	Condenser, .02 Mfd. 200 V
	W -35011	Condenser, .01 Mfd. 200 V
8Y	W -25537A	Condenser, .01 Mfd. 400 V
	W -30322A	Condenser, .006 Mfd. 400 V
9	W -30322A	Condenser, .0017 Mfd. 400 V
	W -28621	Condenser, .03 Mfd. 400 V
10Z	W -30322A	Condenser, .00017 Mfd. 400 V
	W -28621	Condenser, .006 Mfd. 400 V
10Y	W -28621	Condenser, .00025 Mfd. 400 V
	W -28621	Condenser, .02 Mfd. 400 V
11Z	W -28621	Condenser, 2 Gang Var. R.F. 360
	W -28621	Condenser, 2 Gang Var. 450
11Y	W -28621	Dial Drive Unit, complete
	W -28621	Dial Pointer
12Z	W -28621	Dial Pointer Screw
	W -28621	Dial Lens
12Y	W -28621	Dial Drive Mounting Bracket Assem.
	W -28621	
13	G1 -34002	
	W -28621	
14	W -28621	
	W -28621	
15Z	W -28621	
	W -28621	
15Y	W -28621	
	W -28621	

Item No.	Part No.	Description
16	B -33906A	Cord, Power Supply
17	-21876	Resistor, 10,000 Ohms
18	-21453	Resistor, 40,000 Ohms
19	-21455	Resistor, 300,000 Ohms
20	-23785	Resistor, 500,000 Ohms
21	-21454	Resistor, 1 Megohm
22	-26577	Resistor, 3 Megohm
23A	-25937	Resistor, 275 Ohms, 1 1/2 Watt Flex.
23B	-25937	Resistor, 275 Ohms, 1 1/2 Watt Flex.
24	W -23907	Resistor, 750 Ohms, 1 1/2 Watt Flex.
25Z	W -35963	Resistor, 8,500 Ohms, 3 Watt
25Y	W -35963	Resistor, 25,000 Ohms, 3 Watt
26	G6 -28807	Socket 80
27	G41-28807	Socket 75
	W -35774	Tube Shield Base
28	W -35772	Tube Shield Half (2 used)
	W -35773	Tube Shield Cap
29	G22-28807	Socket 41
	G75-28807	Socket 6D6
30	W -35774	Tube Shield Base
	W -35772	Tube Shield half (2 used)
31	W -35773	Tube Shield Cap
	G47-28807	Socket 6A7
32Z	W -35774	Tube Shield Base
	W -35772	Tube Shield half (2 used)
32Y	W -35773	Tube Shield Cap
	W -35773	Speaker, 318 BL9
33	W -35753A	Switch, Ant.
	W -36184A	Switch, Osc.
34	G10-26719	Switch, Tone Control
	G5 -28500	Terminal, Ant. Gnd.
35	G6 -28500	Transformer, Power, 60 Cy., 110 Volt
	G7 -28500	Transformer, Power, 25 Cy., 110 Volt
36Z	W -36227	Transformer, Power, 25 Cy., 220 Volt
	W -36227	Volume Control, 4,800 Ohm, 160 Ohm fixed.
36Y	W -31585B	On-Off Switch
	B -35917	Knobs Escutcheon

MODEL 525,505
Voltage, Chassis
Trimmers, Alignment

CROSLLEY RADIO CORP.

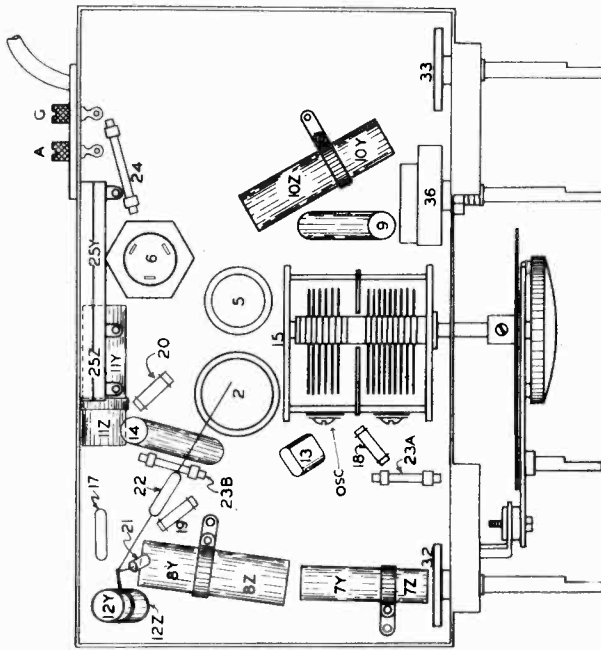


Fig. 3. Bottom View 525 and 505

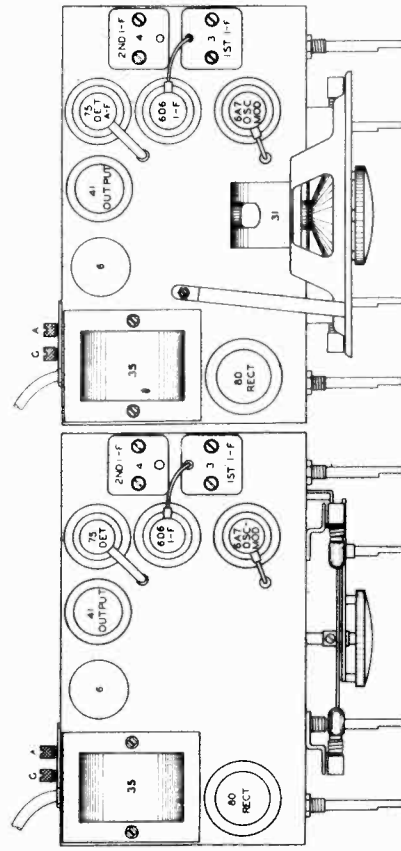


Fig. 2-A. Top View 525

Fig. 2-B. Top View 505

MODELS 525 AND 505

SPECIFICATIONS

The Crosley models 525 and 505 employ the same chassis. The 525 is a table model with speaker attached and the 505 is a console model with the speaker mounted in the cabinet. It is available or adaptable for operation on A.C. lines as follows: 110 V. 60 cycles, 110 V., 25 cycles and 220 V., 25 cycles. It is a two band receiver tuning from approximately 540 to 1570 kilocycles in the broadcast band and from 1570 to 4000 kilocycles in the police and amateur band.

The tubes used are 6A7 Oscillator-Modulator, 6D6 I. F. Amplifier, 75 Detector, 41 Output and type 80 Rectifier.

SOCKET VOLTAGES

The tube socket voltages are measured from the socket contacts to the chassis with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and no signal input. Readings may vary plus or minus 10% of values given. Filaments are measured with a low range A.C. Voltmeter.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	G	K	S	Su	Ga	Go
6A7	Osc-Mod	6.3	215	0	3	105	0	105	4
6D6	I. F. Amp.	6.3	215	0	3	105	3	—	—
75	Detector & A. F. Amp.	6.3	280	0	16	75	—	—	—
41	Output	6.3	280	0	16	215	—	—	—
80	Rectifier	4.3	280	—	—	—	—	—	—

Measured on 117.5 Volt—60 Cycle Line. Power Consumption Approximately 60 Watts.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned only 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 41 output tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first to the left of the filament prongs and the screen prong will be next to the plate prong. Be sure the meter is protected from D. C. by connecting a condenser (1 mid. or larger—not electrolytic) in series with one of the leads.

1. Peaking I. F. Stages at 450 Kilocycles.

- Connect the output of the signal generator through a .02 mid. series condenser to the top cap of the 6A7 Osc-Mod tube, leaving the tube's grid clip in place. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.**
- Connect the ground lead of the signal generator to the chassis frame or ground terminal of the receiver.
- Set the signal generator to 450 kilocycles.
- Rotate the receiver tuning condenser until the rotor plates are completely out of mesh.
- Turn the band selector switch to the right hand position. (Short Wave Band).
- Turn the volume control of the receiver on full.

(g) With the signal generator set to the lowest usable output level adjust the I. F. trimmer condensers located on top of the I. F. transformers, Fig. 2A&B for maximum output.

NOTE: Make the adjustments very carefully, going over them several times to insure that the final setting is at resonant frequency. An insulated screw driver should be used to insure accurate adjustments.

2. Aligning R. F. Circuits.

- Turn the band selector switch to the left hand position. (Broadcast Band).
- Leave the receiver tuning condenser rotor plates completely out of mesh.
- Connect the output lead from the signal generator through a .00025 mid., series condenser to the antenna terminal of the receiver.
- Set the signal generator to approximately 1570 kilocycles.

(e) Adjust the trimmer on the "Osc." section of the tuning condenser gang for maximum output. (Fig. 3).

(f) Set the signal generator to 1400 kilocycles.

(g) Tune in the 1400 kilocycle signal with the station selector for maximum output.

NOTE: Do not disturb the setting of the "Osc." trimmer as this is adjusted at 1570 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

(h) Adjust the trimmer on the "Ant." section of the tuning condenser gang for maximum output. **NOTE:** There are no adjustments on this receiver for the Police Band.

CROSLY RADIO CORP.

MODEL 534
Schematic
Socket

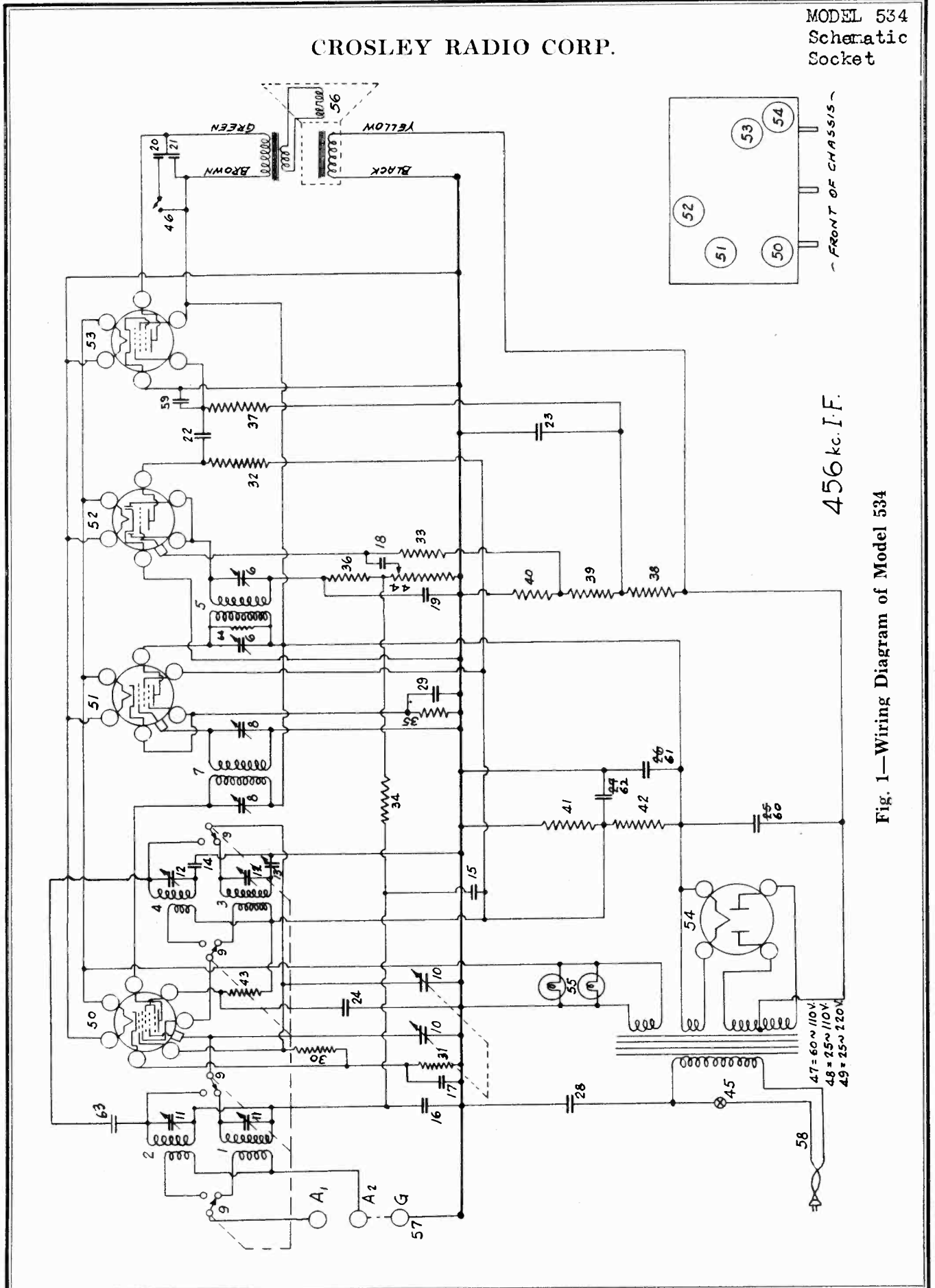
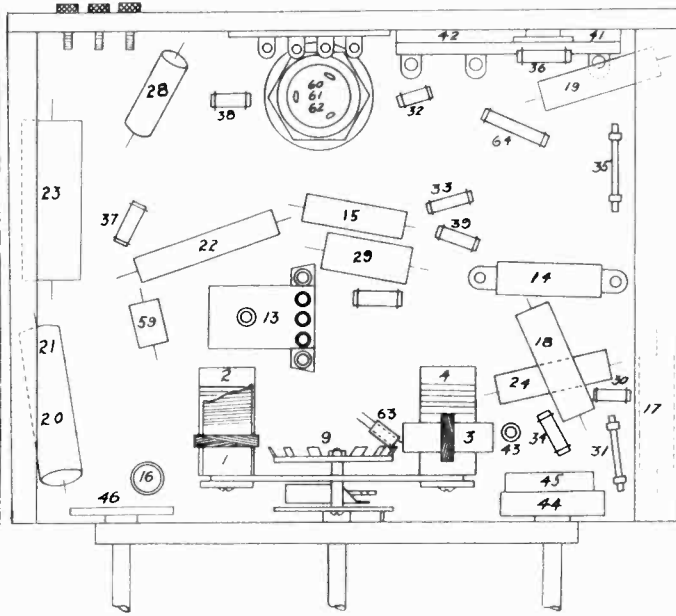
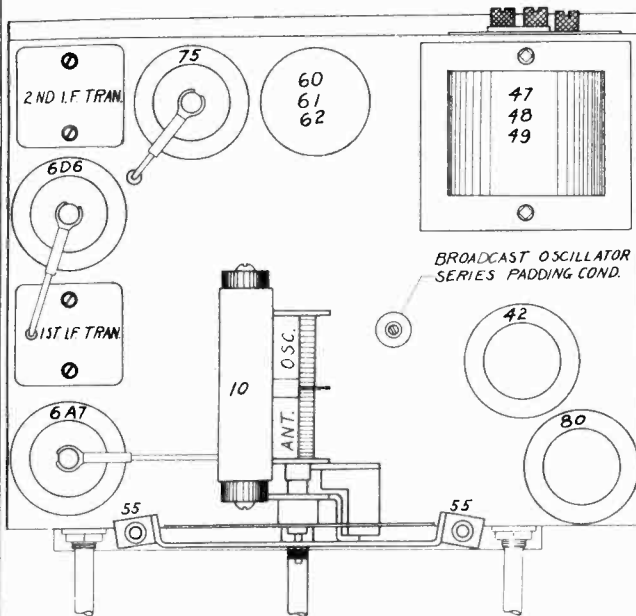


Fig. 1—Wiring Diagram of Model 534

MODEL 534
Chassis, Trimmers
Parts

CROSLLEY RADIO CORP.



PARTS LIST—MODEL 534

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G39—32000	Low Freq. Ant. Trans.	40	—21876	10,000 Ohm Resistor
3	G40—32000	High Freq. Ant. Trans	41	W —31883	25,000 Ohm Resistor
3	G31—32002	L. F. Osc. Trans.	42	—23868	8,500 Ohm Resistor
4	G32—32002	H. F. Osc. Trans	43	—35013	6,500 Ohm Resistor
5	G38—32004	2nd I. F. Trans.	44	W —34191	Level Control 1 Megohm
6	G39—32004	I. F. Trimmer Cond.	45	—27981A	Power Switch
7	G39—32004	I. F. Trimmer Cond	46	W —28632A	Tone Control Switch
8	G39—32004	I. F. Trimmer Cond	47	G8 —28500	Power Trans. 60 Cy. 110 V.
9	B —35031	4 Pole S. T. Sw.	48	G9 —28500	Power Trans. 25 Cy. 110 V.
10	B —35025	Variable Cond. Gang	49	G10—28500	Power Trans. 25 Cy. 220 V.
	G26—32086	Dial Drive Assembly	50	G47—28807	6A7 Socket
	W —32008A	Dial Hand		W —27981A	Tube Shield Base
	W —32293	Dial Hand Nuts (2)		W —28632A	Tube Shield
11	W —35033	Ant. Trimmer Cond.	51	G75—28807	6D6 Socket
12	W —35033	Osc. Trimmer Cond.		W —27981A	Tube Shield Base
13	G10—33005	Series Cond.		B —26009D	Tube Shield
14	G12—34000	4725 Mmf. Cond.	52	G41—28807	-75 Socket
15	W —32378	0.01 Mfd. 400 V. Cond.		W —27981A	Tube Shield Base
16	W —32380	0.05 Mfd. 200 V. Cond.		W —28632A	Tube Shield
17	W —28621	0.02 Mfd. 200 V. Cond.	53	G25—28807	-42 Socket
18	W —28619	0.006 Mfd. 200 V. Cond.	54	G6 —28807	-80 Socket
19	W —27932	0.0001 Mfd. 200 V. Cond.	55	W —4099A	6-8 V. Dial Lamp
20	W —35011	0.03 Mfd. 400 V. Cond.		G4 —27134	Light Bracket Assem. (2)
21	W —35011	0.006 Mfd. 400 V. Cond.	56	—318BL	Speaker
22	W —27216	0.05 Mfd. 200 V. Cond.		G5 —31128	Speaker Term. Board
23	W —30321A	1.0 Mfd. 160 V. Cond.		W —34627	Insulator
24	W —28621	0.02 Mfd. 200 V. Cond.		W —34628	Term. Board Cover
25			57	G16—26719	Ant. Gnd. Terminal
26	See 60-61-62		58	B —33905	Power Cable & Plug
27			59	G1 —34002	0.00025 Mfd. (Mica)
28	W —30805	0.01 Mfd. 400 V. Cond.	60		8. Mfd. 450 V.)
29	W —24049B	0.1 Mfd. 200 V. Cond.	61	B —30059C	8. Mfd. 450 V.) Condenser
30	—21453	40,000 Ohm Resistor	62		8 Mfd. 250 V.)
31	W —25937	275 Ohm Flex. Resistor	63	G31—34403	1.0 Mmf.
32	—21455	300,000 Ohm Resistor	64	—21454	1 Megohm Resistor
33	—26577	3 Megohm Resistor		B —35034	Chassis End (2)
34	—26577	3 Megohm Resistor		W —31157B	Knob (1) Station Selector
35	W —25937	275 Ohm Flex. Resistor		W —33991	Knob (1) Band Change
36	—21455	300,000 Ohm Resistor		W —31585B	Knob (2) (Tone Control & Volume Control)
37	—23785	500,000 Ohm Resistor			
38	—23785	500,000 Ohm Resistor			
39	—34018	200,000 Ohm Resistor			

CROSLLEY RADIO CORP.

APRIL, 1935

MODEL 534

SPECIFICATIONS

The Crosley Model 534 chassis is a five tube superheterodyne receiver designed for A. C. operation. It employs a tuned antenna circuit which covers from 535 kilocycles to 1730 kilocycles on the broadcast band and from 5.3 megacycles to 15.7 megacycles on the short wave band, automatic volume control, two step tone control and class "A" pentode audio amplification.

TUBES AND VOLTAGE LIMITS

The following are the tubes and voltages measured from the tube contact to chassis with a 500,000 ohm 500 Volt voltmeter with the receiver in operating condition but with no signal to the antenna, and with a line voltage of 117.5 volts. Voltage limits are plus or minus 10% of values given.

Type	Where Used	E1	Ep	Esg	Esup	EK	Eg
6A7	Osc. Mod.	6.3	100	70	2.5	2.5	0
6D5	I. F. Amp.	6.3	205	100	3.0	3.0	0
42	Diode and A. F. Output Rect.	6.3	50	205	0	0	-3
80		4.5					

VOLTAGE ACROSS SPEAKER FIELD 83 VOLTS.
X INDICATES HIGH RESISTANCE IN THE CIRCUIT WHICH PREVENTS ACCURATE MEASUREMENT.
ALL MEASUREMENTS MADE WITH A 1000 OHM PER VOLT VOLTMETER FROM CHASSIS.

(The power consumption at 117.5 volts is approximately 95 watts).

CIRCUIT DESCRIPTION

The circuit consists of a tuned antenna stage, an oscillator-modulator stage, one stage of I.F. amplification, diode detector and A.V.C., A.F. amplifier and power supply. The oscillator-modulator stage uses a Type 6A7 tube and the I. F. stage uses a Type 6D5 tube. The A.V.C., second detector and first stage of audio amplification are combined in a type 75 tube. The output stage uses a single Type 42 tube and the power supply uses a Type 80 tube.

PEAKING PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and will not need readjustment unless some coil or condenser has been replaced. Do not change the setting of any trimmer condenser unless it is definitely known that the adjustment is necessary. If realignment is found necessary, the circuits can be properly adjusted only with the use of a modulated test oscillator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate of the Type 42 tube and the other terminal to the screen grid of the Type 42 tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first to the left of the filament prongs and the screen grid prong will be next to the plate prong. Be sure that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger) in series with one of the leads.

PEAKING I.F. STAGES AT 456 KC.

NOTE: Be sure speaker is connected before turning on receiver.
I. Connect the ground lead of the test oscillator to the chassis frame. Connect a .1 mfd., or larger, condenser in series with the other lead and connect

- (b) With the same dial setting peak the antenna parallel trimmer condenser for the Broadcast Band.
- (c) Set the test oscillator at 600 kilocycles.
- (d) Tune in the (600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output meter.
- (e) Close the oscillator series padding condenser (Broadcast Band), Fig. 2, 1/8 turn and re-tune the station selector to the (600 kilocycle signal for maximum output, noting the reading on the output meter.
- (f) If the meter reads higher after operation (e) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If the meter reads lower after operation (e) open the oscillator series trimmer condenser 1/8 turn and re-tune the station selector to the (600 kilocycle signal, noting the reading on the output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.
- (g) Repeat operations (a) and (b) for more accurate adjustments.

To Peak The Short Wave Band:

- (a) Be sure to change the dummy antenna as described above.
- (b) Close the oscillator parallel trimmer condens-

- er (Short Wave Band) and then open three turns.
- (c) Close the antenna parallel trimmer condenser (Short Wave Band) and then open 1/2 turn.
- (d) Tune the station selector to 15 megacycles (15 on the dial).
- (f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser.

NOTE: To check on the adjustment of the oscillator parallel trimmer condenser:

- (1) Increase the test oscillator output not more than ten times.
- (2) Try to tune in the 15 megacycle signal with the station selector tuned to approximately 14 on the dial.
- (3) If the 15 megacycle signal is heard at approximately 14 on the dial in addition to 15 on the dial the oscillator parallel trimmer condenser has been aligned on the correct frequency.
- (g) Reduce the output from the test oscillator to the previous output and re-tune the station selector to 15 megacycles at 15 on the dial.
- (h) Peak the antenna parallel trimmer condenser for the Short Wave Band for maximum output, then re-tune the station selector again for maximum output.
- (i) Repeat the two operations in (h) as many times as necessary to obtain the highest reading on the output meter.

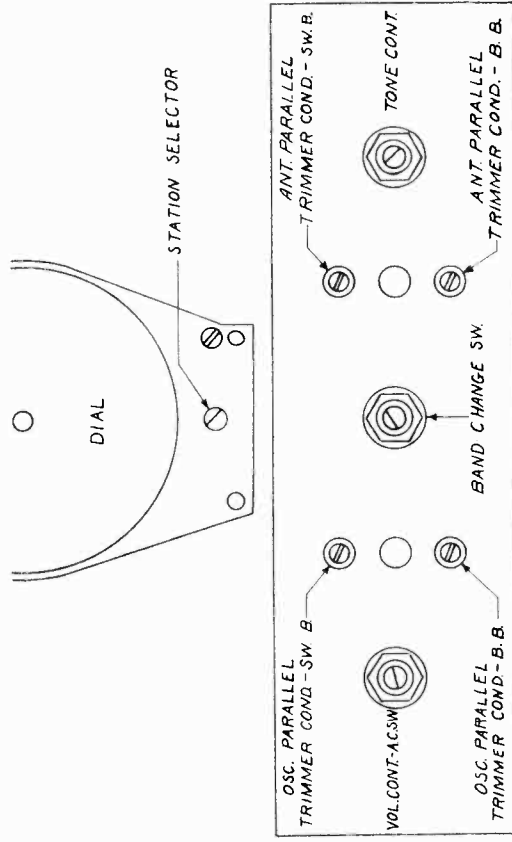
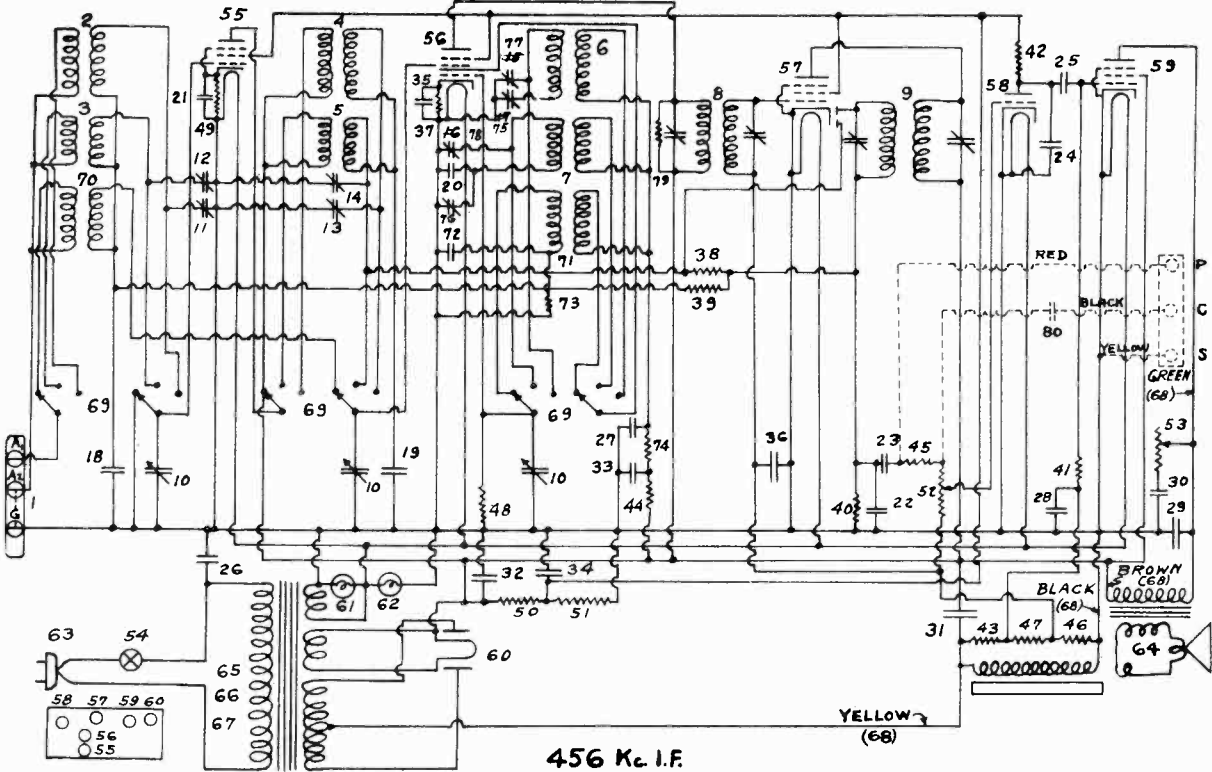


Fig. 3—Front View

MODEL 6H3, 614
Schematic, Socket
Parts

CROSLLEY RADIO CORP.



Parts List Model 6H3

Figures in first column correspond to figures in diagram

1	G16	-26719	Ant. Gnd. Term.	43	23785	500,000 Ohms
2	G3	-32000	L. F. Ant. Coil	44	21876	10,000 Ohms
3	G1	-32002	H. F. Ant. Coil	45	23785	500,000 Ohms
4	G2	-32001	L. F. R. F. Coil	46	22831	15,000 Ohms
5	G1	-32001	H. F. R. F. Coil	47	21875	100,000 Ohms
6	G2	-32002	L. F. Osc. Coil	48	21453	40,000 Ohms
7	G1	-32002	H. F. Osc. Coil	49	W	165 Ohms
8	G18	-32004	1st I. F. Trans.	50	W	8,500 Ohms
9	G19	-32004	Diode Trans.	51	W	25,000 Ohms
10	G19	-33002	Variable Cond.	52	W	28552
11	G1	-33008	L. F. Ant. Trimmer	53	W	25594-B
12	G1	-33008	H. F. Ant. Trimmer	54	W	27456
13	G1	-33008	L. F. R. F. Trimmer	55	G75	27456
14	G1	-33008	H. F. R. F. Trimmer	56	G47	27456
15				57	G48	27456
16				58	G80	27456
17				59	G25	27456
18	W	-32379	0.02 Mfd. 200 Volt	60	G6	27456
19	W	-32379	0.02 Mfd. 200 Volt	61	W	4099-A
20	W	-32304	1400 Mmfd. H. F.	62	W	4099-A
21	W	-32379	0.02 Mfd. 200 Volt	63	B	33905
22	W	-30322-A	.00017 Mfd. 200 Volt	64	G6	318-B
23	W	-30322-A	.001 Mfd. 400 Volt	65	G6	30745
24	W	-25537-A	.03 Mfd. 400 Volt	66	G7	30745
25	W	-30805	0.01 Mfd. 400 Volt	67	G8	30745
26	W	-32378	0.01 Mfd. 400 Volt	68	W	31007-A
27	W	-30321-A	1.0 Mfd. 160 Volt	69	B	34427-A
28	W	-25517-A	.008 Mfd. 400 Volt	70	G31	32000
29	W	-26194-B	0.05 Mfd. 400 Volt	71	G24	32002
30	W	-29097-D	12 Mfd. 475 Volt	72	G7	34000
31	W	-29097-D	8 Mfd. 450 Volt (Red)	73	W	24990
32	W	-29097-D	8 Mfd. 450 Volt (Green)	74	W	22831
33	W	-29097-D	8 Mfd. 250 V. (No Code)	75	G2	33007
34	W	-32379	0.02 Mfd. 200 Volt	76	W	33009
35	W	-29910-A	0.25 Mfd. 200 Volt	77	G9	33009
36	W	-28589	350 Ohms	78	W	23785
37	W	-26577	3-Megohm	79	W	23191-A
38	W	-26577	3-Megohm	80	W	23191-A
39	W	-21454	1-Megohm			
40	W	-23785	500,000 Ohms			
41	W	-23785	500,000 Ohms			
42	W	-23403	150,000 Ohms			

CROSLLEY RADIO CORP.

MODEL 635, Buccaneer
Schematic, Voltage
Socket, Data

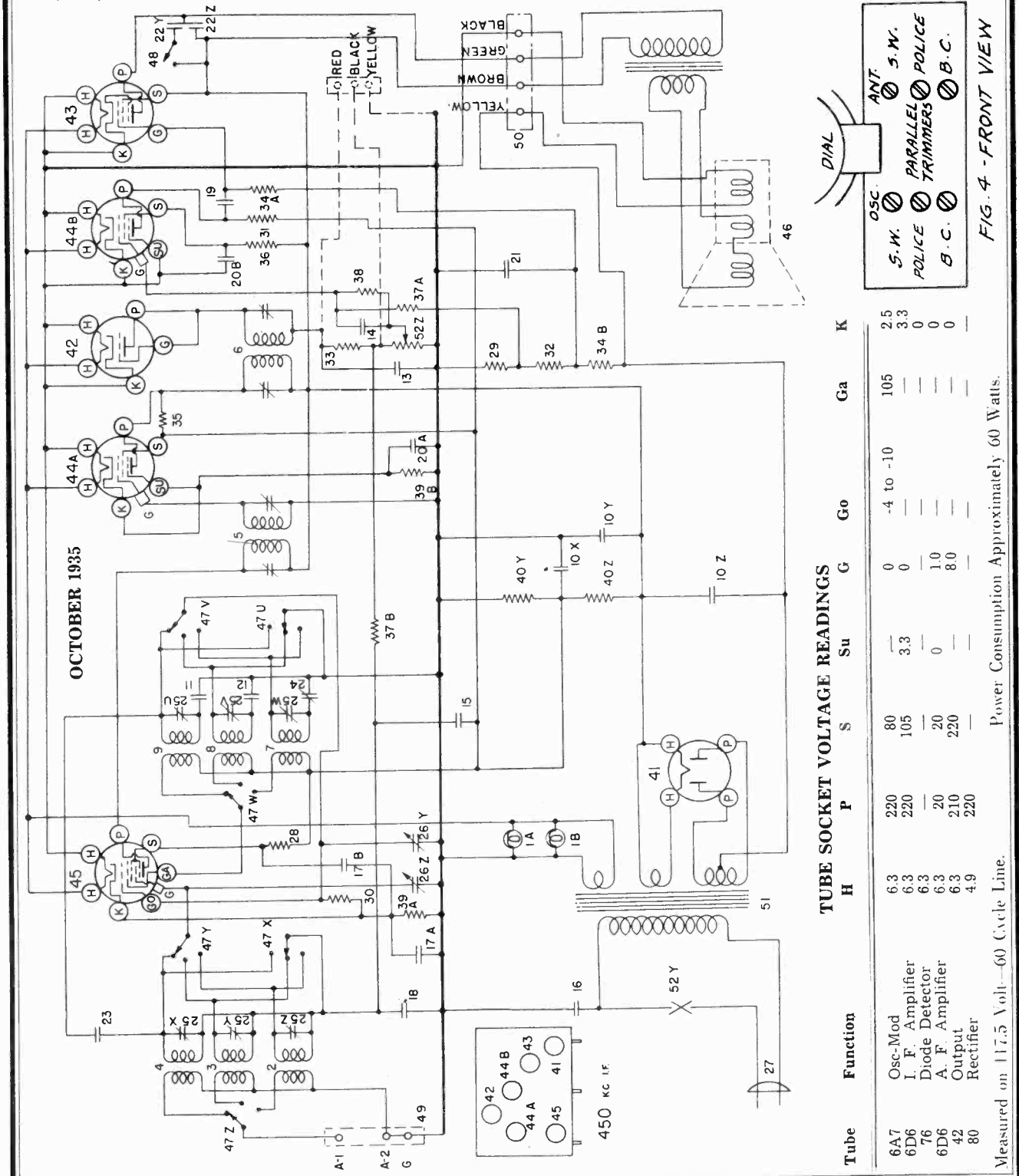
SPECIFICATIONS

The Crosley Model 635 radio is a six-tube superheterodyne receiver and is available or adaptable for operation on A-C lines as follows: 100 V.-60 cycles, 110 V.-25 cycles and 220 V.-25 cycles. It is a three band receiver tuning from 540 to 1700 kilocycles in the broadcast band, 1700 to 5200 kilocycles in the police and amateur band, and 5400 to 15,300 kilocycles in the high frequency band.

The tubes used are: 6A7 Oscillator-Modulator, 6D6 I. F. Amplifier, 76 Detector and AVC, 6D6 A. F. Amplifier, 42 Output and type 80 Rectifier.

SOCKET VOLTAGES

The tube socket voltages are measured from the socket contacts to the chassis with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with the receiver in operating condition and no signal input. Readings may vary plus or minus 10% of values given.



OCTOBER 1935

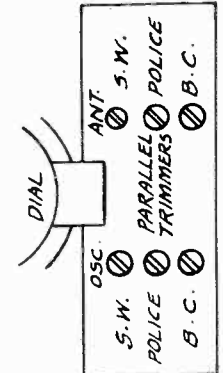


FIG. 4 - FRONT VIEW

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	Go	Ga	K
6A7	Osc-Mod	6.3	220	80	—	0	-4 to -10	105	2.5
6D6	I. F. Amplifier	6.3	220	105	3.3	0	—	—	3.3
76	Diode Detector	6.3	—	—	0	1.0	—	—	0
6D6	A. F. Amplifier	6.3	20	20	—	—	—	—	0
42	Output	6.3	210	220	—	8.0	—	—	0
80	Rectifier	4.9	220	—	—	—	—	—	—

Measured on 117.5 Volt-60 Cycle Line. Power Consumption Approximately 60 Watts.

MODEL 635, Buccaneer
Alignment, Chassis
Parts

CROSLLEY RADIO CORP.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned only 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 42 output tube. Looking at the bottom of the tube with the filament prong toward you the plate prong will be the first to the left of the filaments and the screen prong will be next to the plate prong. 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. Peaking I. F. Stages at 450 Kilocycles.
(a) Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. **KEEP THE GENERATOR OUTPUT LEADS AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.**
(b) Turn the tuning condenser rotor plates until they are completely meshed.
(c) Turn the band selector switch to the short wave band (extreme left hand position).
(d) Set the signal generator to 450 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) Using the lowest signal generator output that will give a reasonable scale deflection on the output meter repeat operations (e) and (f) as many times as necessary to obtain the maximum output.

2. Peaking R. F. Circuits—Broadcast Band (540 to 1700 K. C.)
(a) Connect the output of the signal generator through .00025 mfd. condenser to the output lead of the signal generator with a 400 ohm carbon resistor.
(b) Turn the band selector switch to the short wave band (left hand position).
(c) Set the signal generator to 15 megacycles.
(d) Close the Oscillator-parallel trimmer (S-W Band) and then open three turns.
(e) Close the Antenna, parallel, trimmer (S-W Band) and then open 1/4 turn.
(f) Turn the station selector to 15 on the dial (S-W Band).
(g) Peak the oscillator parallel trimmer (S-W Band) on the FIRST signal heard when closing the condenser. In making this adjustment care should be taken not to use too much output from the signal generator to avoid setting the oscillator circuit on the wrong frequency. **NOTE:** Check on the adjustment of the S-W Band oscillator parallel trimmer as follows:
1. Increase the signal generator output not more than ten times.
2. Try to tune-in the 15 megacycles signal with the station selector at approximately 14 on the dial.
3. If the 15 megacycles signal can be heard at approximately 14 and 15 both on the dial the oscillator parallel trimmer has been aligned on the correct frequency. It should be noted, however, that the signal tuned in at 15 on the dial should be much stronger than the signal heard at 14. If this condition is not found it will be necessary to repeat operation (g).
(h) Reduce the output of the signal generator to the previous output and retune the station selector to 15 megacycles at 15 on the dial.
(i) Adjust the antenna parallel trimmer (S-W Band) for maximum output, then retune the station selector for maximum output.
(j) Repeat the two operations in (i) as many times as necessary to obtain the maximum output.

NOTE: On the band selector switch there is a small eyelet soldered to one of the connecting lugs. This eyelet, item No. 23, is used as a small condenser the capacity of which is formed by inserting an insulated wire into the sleeve of the eyelet. If a new band selector switch is installed care should be taken to see that the "capacity wire" is inserted into the sleeve of the eyelet. This insulated wire should be passed through the eyelet and a slight hook made in the end to prevent it from pulling out. (See Fig. 3)

NOTE: On the band selector switch there is a small eyelet soldered to one of the connecting lugs. This eyelet, item No. 23, is used as a small condenser the capacity of which is formed by inserting an insulated wire into the sleeve of the eyelet. If a new band selector switch is installed care should be taken to see that the "capacity wire" is inserted into the sleeve of the eyelet. This insulated wire should be passed through the eyelet and a slight hook made in the end to prevent it from pulling out. (See Fig. 3)

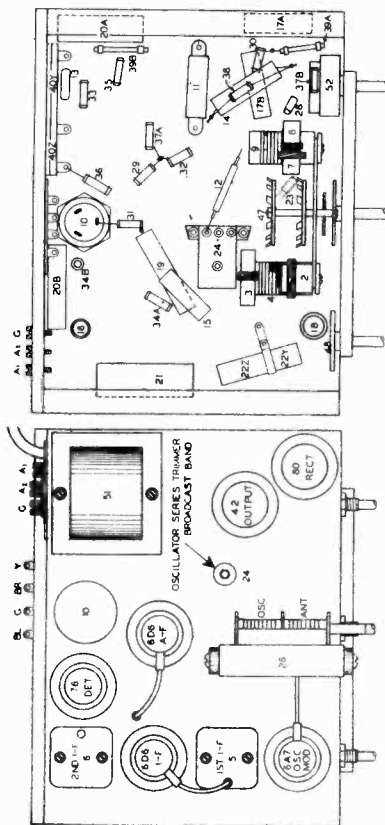


Fig. 2. Top View 635

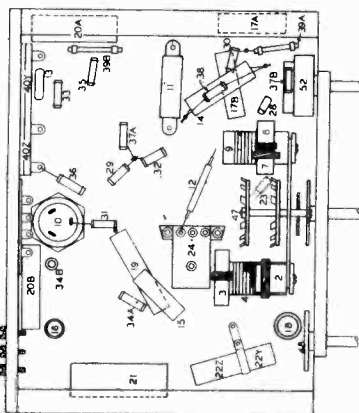


Fig. 3. Bottom View 635

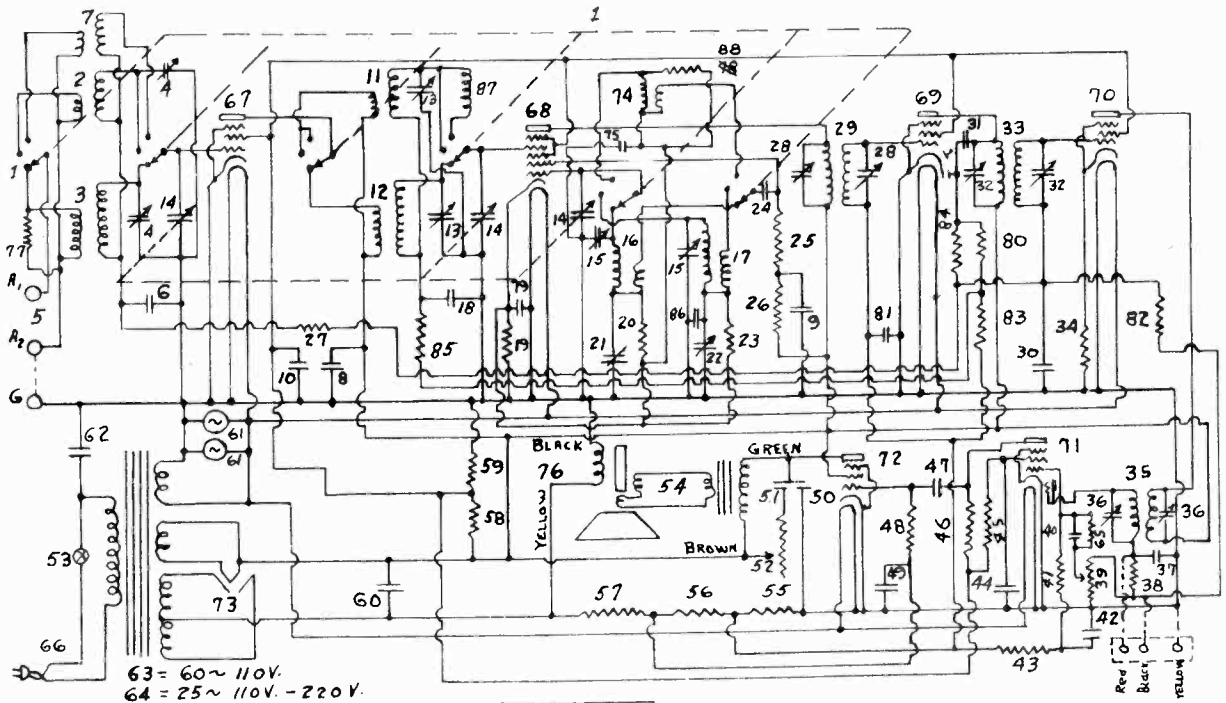
PARTS LIST—MODEL 635

Figures in first column refer to parts shown in diagram.

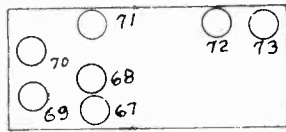
Item No.	Description	Part No.	Description
1A	Dial Light Bracket Assembly	26018	Resistor, 300,000 Ohms.
1B	Dial Light Assembly	21415	Resistor, 300,000 Ohms.
2	Coil, Ant. Trans. 540-1725 Kc.	33A	Resistor, 500,000 Ohms.
3	Coil, Ant. Trans. 1.4-1.5 Mc.	23785	Resistor, 1 Megohm.
4	Coil, Ant. Trans. 5.3-15.5 Mc.	21454	Resistor, 2 Megohm.
5	Coil, 1st I. F. Trans.	34885	Resistor, 3 Megohm.
6	Coil, 2nd I. F. Trans.	26577	Resistor, 5 Megohm.
7	Coil, Shield Assembly	26578	Resistor, 275 Ohm, 1/4 Watt.
8	Coil, Osc. 540-1725 Kc.	25897	Resistor, 8,500 Ohm, 1/4 Watt.
9	Coil, Osc. 1.7-5.2 Mc.	35963	Resistor, 8,500 Ohm, 3 Watt.
10	Coil, Osc. 5.3-15.5 Mc.	29807	Resistor, 50,000 Ohm, 3 Watt.
10X	Condenser, 8 Mfd. 450 Volts.	G60	Socket, 76
11	Condenser, 4755 Mmf.	W	Shield Base.
12	Condenser, 1450 Mmf.	W	Shield Base.
13	Condenser, 1000 Mmf.	W	Shield Cap.
14	Condenser, 0.006 Mfd. 200 Volt.	W	Shield Cap.
15	Condenser, 0.01 Mfd. 400 Volt.	G25	Shield Half (2 used).
16	Condenser, 0.01 Mfd. 400 Volt.	G75	Socket, 6D6.
17A	Condenser, 0.02 Mfd. 200 Volt.	G75	Socket, 6D6.
17B	Condenser, 0.02 Mfd. 200 Volt.	W	Shield Base.
18	Condenser, 0.05 Mfd. 200 Volt.	W	Shield Base.
19	Condenser, 0.05 Mfd. 200 Volt.	G47	Shield Half (2 used).
20A	Condenser, 0.1 Mfd. 200 Volt.	W	Shield Base.
20B	Condenser, 1.0 Mfd. 160 Volt.	W	Shield Base.
21	Condenser, 0.06 Mfd. 400 Volt.	W	Shield Cap.
22	Condenser, 0.03 Mfd. 400 Volt.	W	Shield Cap.
23	Condenser, 1.0 Mfd. 400 Volt.	B	Speaker Band Change Switch, Tone Control.
24	Condenser, 1.0 Mfd. 400 Volt.	G16	Terminal, Ant. Grid.
25	Condenser, Var. 540-1725 Kc.	G5	Terminal, Speaker.
25X	Trimmer Condenser Assembly.	G8	Transformer, Power, 25 C., 110 Volt.
26	Trimmer Condenser Assembly.	G10	Transformer, Power, 25 C., 220 Volt.
26X	Condenser, Variable Tuning Gang	G10	Volume Control, 1 Megohm.
27	Dial Drive Assembly.	W	On-Off Switch.
28	Resistor, 6,500 Ohms.	W	Knobs.
29	Resistor, 15,000 Ohms.	B	Knob (Tail).
30	Resistor, 40,000 Ohms.	B	Knob (Head).
31	Resistor, 100,000 Ohms.	W	Knob (Tail).
		W	Knob (Head).
		C	Dial only.
		W	Dial Hand.
		W	Dial Hand Nut.

CROSLEY RADIO CORP.

MODEL 714
Schematic, Socket
Parts



63 = 60 ~ 110V.
64 = 25 ~ 110V. - 220V.



456 Kc. I.F.

Parts List Model 714

Figures in first column correspond to figures in diagram

1	B	-34443-A	46	21875	100,000 Ohms
2	G28	-32000	47	-27216	.05 Mfd. 200 Volt
3	G3	-32000	48	23785	500,000 Ohms
4	G1	-33008	49	-30321	1.0 Mfd. 160 Volt
5	G16	-26719	50	W	.004 Mfd. 400 Volt
6	W	-32379	51	-31052	.05 Mfd. 400 Volt
7	G31	-32000	52	W	Tone Control
8	W	-29097-D	53	-32063	S. P. S. T. Switch
9	G18	-32001	54	411C	Speaker
10	G2	-32001	55	33390	30,000 Ohms
11	G2	-32001	56	23403	150,000 Ohms
12	G9	-33009	57	21454	1 Meg.
13	G18	-33002	58	W	7,000 Ohms
14	G2	-33009	59	-31361	11,000 Ohms
15	G2	-33002	60	W	26194-B
16	G2	-32002	61	W	12 Mfd. 475 Volt
17	G21	-32002	62	W	6-8 V. Dial Light
18	W	-32380	63	G1	.01 Mfd. 400 Volt
19	W	-21452	64	G39	Power Trans. 60 Cy.
20	G12	-33006	65	26578	Power Trans. 25 Cy.
21	G12	-33006	66	B	110 V. 220 V.
22	W	-21453	67	G75	5 Meg.
23	W	-25435	68	G47	Cord & Plug
24	W	-21876	69	G48	6D6 Socket (R. F. Amp.)
25	W	-21876	70	G75	6A7 Socket (Osc. Mod.)
26	W	-21455	71	G49	6B7 Socket (I. F. & Diode)
27	G6	-33006	72	G25	6D6 Socket (2nd I. F.)
28	G1	-32004	73	G6	6F7 Socket (Diode & A. F. Amp.)
29	W	-27216	74	G24	42 Socket (Output)
30	W	-31937	75	G6	80 Socket (Rect.)
31	G6	-33006	76	W	Osc. Coil (Pol. Band)
32	G1	-32004	77	31094	Series Cond. 1350 Mmf.
33	G1	-25937	78	W	Speaker Cord
34	G26	-32004	79	W	4,500 Ohms
35	W	-27932	80	W	.02 Mfd. 200 Volt
36	W	-27932	81	W	300,000 Ohms
37	W	-27932	82	W	.02 Mfd. 200 Volt
38	W	-23403	83	W	5 Meg.
39	W	-32062	84	W	300,000 Ohms
40	W	-28619	85	W	1 Meg.
41	W	-26577	86	G2	1 Meg.
42	W	-24049	87	G19	3104 Mmf. Cond.
43	W	-21454	88	W	Pol. Band R. F. Coil
44	W	-24049			30,000 Ohms
45	W	-23785			

MODEL 715, Corsair
Alignment, Chassis

CROSLEY RADIO CORP.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned only 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 42 output tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first to the left of the filament prongs and the screen prong will be next to the plate prong. 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 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are open. 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 all the way to the left.

(d) Set the signal generator to 450 kilocycles.

be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is always approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below 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 position.

To align the "series" trimmer set the signal generator to the frequency indicated and then tune-in this signal

(e) Close the middle trimmer condenser on the 1st I-F transformer. (Fig. 2)

(f) Adjust the trimmers located on top of the 2nd I-F transformer for maximum output. (Fig. 2)

(g) Adjust the top and bottom trimmers of the 1st I-F transformer, for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st I-F transformer or maximum output. **DO NOT READJUST THE OTHER TRIMMERS.**

2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from 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 (if provision is made for series alignment). 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.

Adjust the "Osc", "R-F" and "Ant" trimmers (Fig. 2) in the order given for maximum output and then check the adjustments in the same order. **NOTE:** When aligning the Police and High Frequency Band care must

with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

(b) Signal Input Frequencies.

	Shunt Alignment	Series Alignment
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police and Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—

SPECIFICATIONS MODEL 715

The Crosley Model 715 radio is a seven-tube super-heterodyne receiver and is available or adaptable for operation on A-C lines as follows: 110 V-60 cycles, 110 V-25 cycles and 220 V-25 cycles. The tubes used are 6D6 R-F Amplifier, 6A7 Oscillator-Modulator, 6B7 I-F Amplifier and AVC, 76 Detector, 76 A-F Amplifier, 42 Output and type 30 Rectifier.

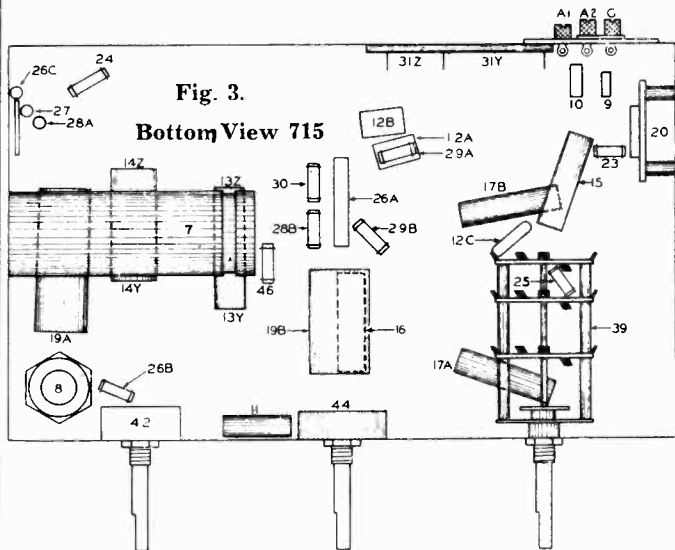
It is a three band receiver and the dial is divided into three sections as follows:

BLACK—540-1625 kilocycles (American Broadcast Band).

GREEN—1625-4700 kilocycles (Police and Amateur Band).

RED—5250-15300 kilocycles (Night High Frequency Band).

The positions on the band selector switch are in the above order, reading from right to left.



CROSLY RADIO CORP.

MODEL 715, Corsair
Schematic, Socket
Voltage

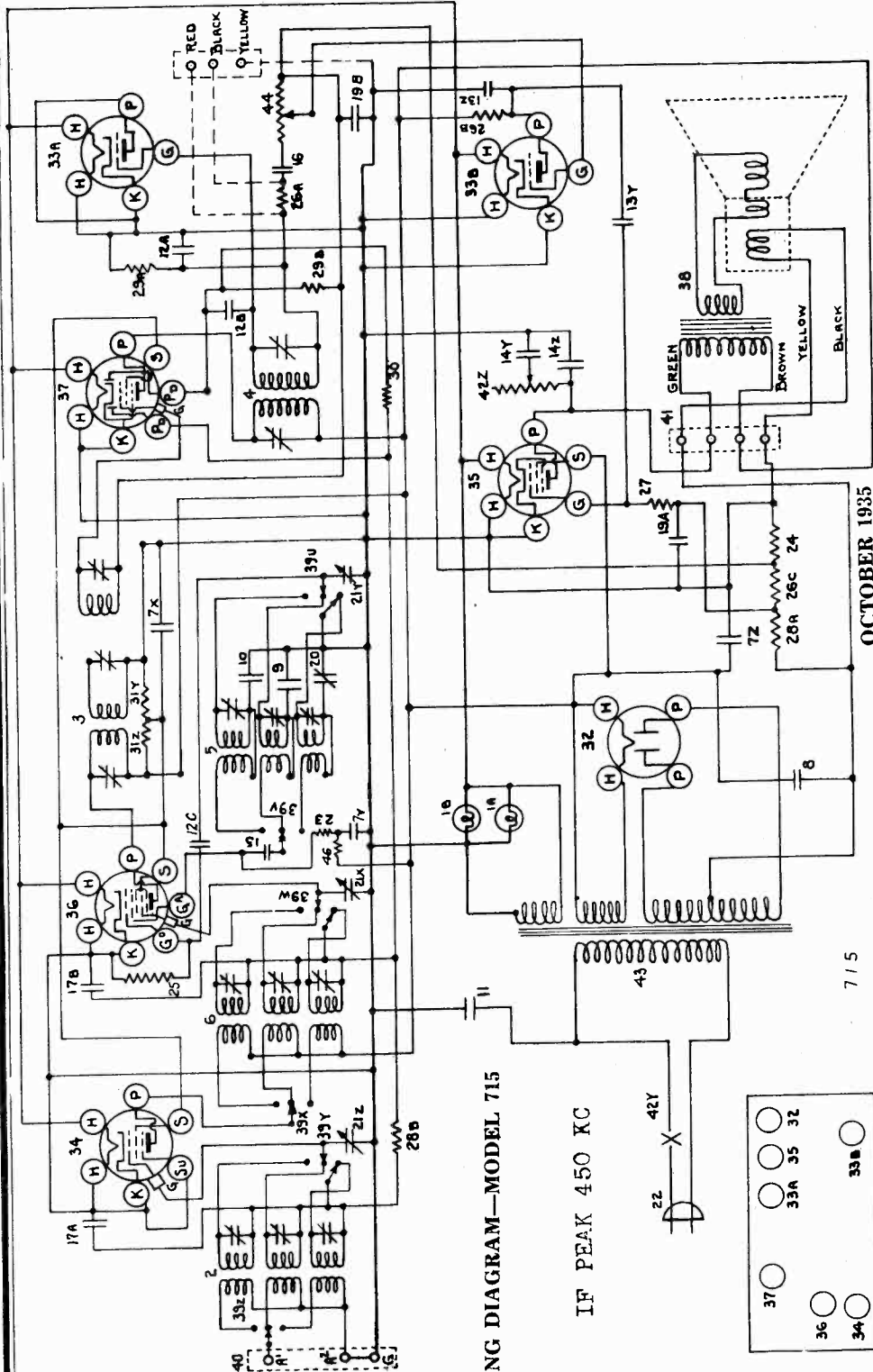


FIG. 1. WIRING DIAGRAM—MODEL 715

IF PEAK 450 KC

715

Tube	Function	TUBE SOCKET VOLTAGE READINGS							Power Consumption
		H	P	S	Su	G	K	Go	
6D6	R-F Amplifier	6.3	315	110	0	-3	0	-	185
6A7	Osc.-Mod.	6.3	315	110	0	-3	0	-5 to -15	-
6B7	I-F Amp. & AVC	6.3	315	110	0	-3	0	-	-
76	Detector	6.3	35	-	-	-3	0	-	-
76	A-F Amplifier	6.3	300	245	0	-16	0	-	-
42	Output	6.3	320	-	-	-	-	-	-
80	Rectifier	5.0	320	-	-	-	-	-	-

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. Readings may vary plus or minus 10% of values given. Filament readings are taken with a low range A.C. voltmeter.

Measured on 117.5 Volt Line—60 Cycles A.C.

Power Consumption Approximately 60 Watts

MODEL 715, Corsair
Chassis, Parts

CROSLEY RADIO CORP.

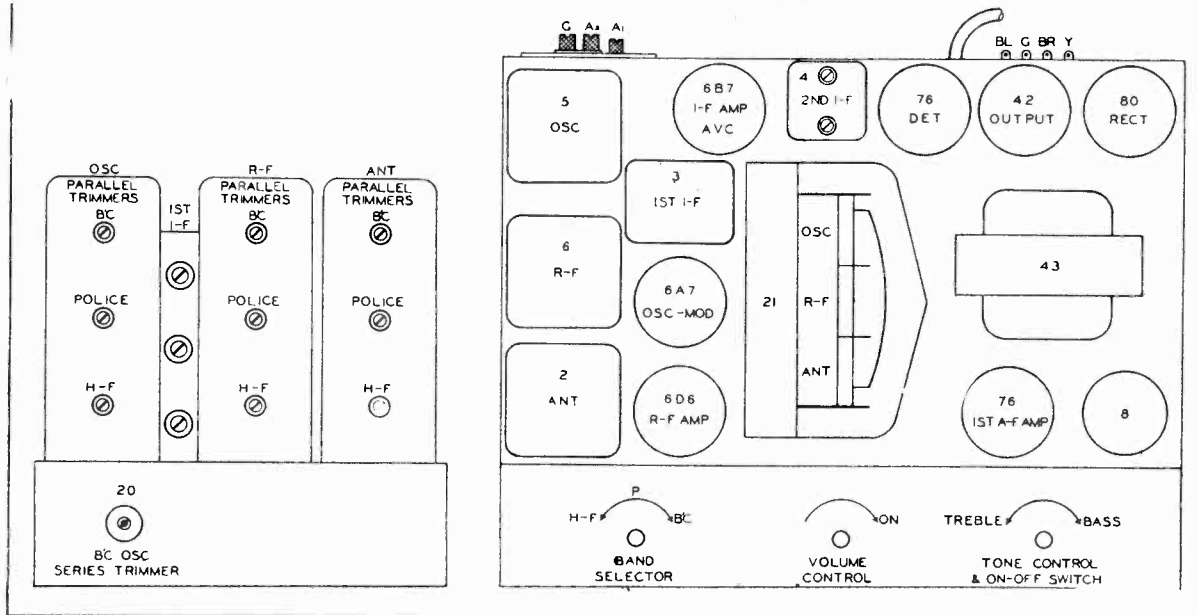


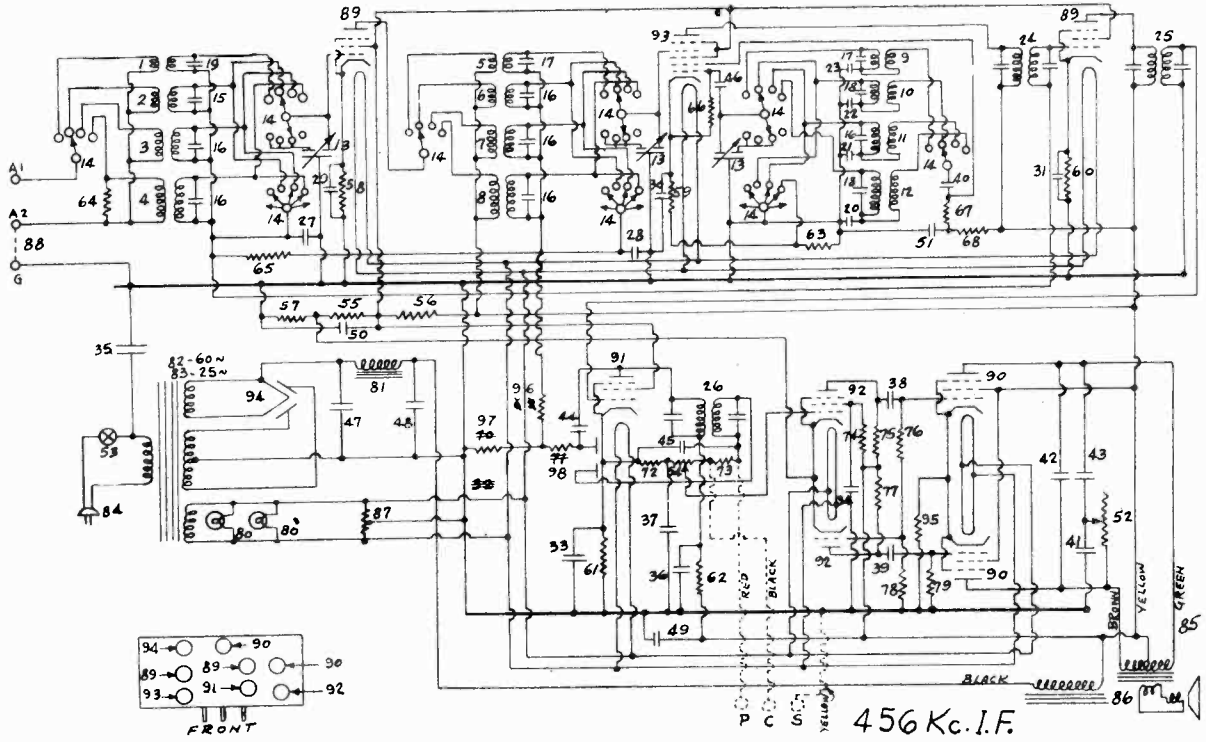
Fig. 2. Side And Top Views 715

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4 -27134	Dial Light Bracket Assembly.	23	-22831	Resistor, 15,000 Ohms.
1B	G4 -27134	Dial Light Bracket Assembly.	24	-22196	Resistor, 20,000 Ohms.
2	G50-32000	Ant. Coil Assembly complete.	25	W -21875	Resistor, 100,000 Ohms.
	G44-32000	Ant. Coil Broadcast Band.	26A	-23403	Resistor, 150,000 Ohms.
	G45-32000	Ant. Coil Police Band.	26B	-23403	Resistor, 150,000 Ohms.
	G46-32000	Ant. Coil S. W. Band.	26C	-23403	Resistor, 150,000 Ohms.
	W -36032	Trimmer Condenser.	27	-21455	Resistor, 300,000 Ohms.
	G6 -36031	Support Base Assembly.	28A	-23785	Resistor, 500,000 Ohms.
	G4 -36031	Coil Shield Assembly.	28B	-23785	Resistor, 500,000 Ohms.
3	G47-32004	1st. I. F. Trans. Assembly.	29A	-21454	Resistor, 1 Megohm.
4	G46-32004	2nd. I. F. Trans. Assembly.	29B	-21454	Resistor, 1 Megohm.
5	G42-32002	Osc. Coil Assembly complete.	30	-26577	Resistor, 3 Megohm.
	G36-30202	Osc. Coil B. C. Band.	31Z	W -35963	Resistor, 8,500 Ohm.
	G37-32002	Osc. Coil Police Band.	31Y	W -35963	Resistor, 25,000 Ohm.
	G38-32002	Osc. Coil S. W. Band.	32	G6 -28807	Socket, 80.
	W -36032	Trimmer Condenser.	33A	G80-28807	Socket, 76.
	G7 -36031	Support Base Assembly.	33B	G80-28807	Socket, 76.
	G5 -36031	Coil Shield Assembly.	34	G75-28807	Socket, 6D6.
6	G29-32001	R. F. Coil Assembly complete.	W	-35774	Tube Shield Base.
	G23 32001	R. F. Coil B. C. Band.	W	-35772	Tube Shield Half.
	G24-32001	R. F. Coil Police Band.	W	-35773	Tube Shield Cap.
	G25-32001	R. F. Coil S. W. Band.	35	G25-28807	Socket, 42.
	W -36032	Trimmer Condenser.	36	G47-28807	Socket, 6A7.
	G6 -36031	Support Base Assembly.	W	-35774	Tube Shield Base.
	G4 -36031	Coil Shield Assembly.	W	-35772	Tube Shield Half.
7Z		Condenser, 8 Mfd. 450 Volt.	W	-35773	Tube Shield Cap.
7Y	W -36056	Condenser, 4 Mfd. 350 Volt.	37	G48-28807	Socket, 6B7.
7X		Condenser, 4 Mfd. 250 Volt.	W	-35774	Tube Shield Base.
8	W -36055	Condenser, 35 Mfd. 450 Volt.	W	-35772	Tube Shield Half.
9	G7 -34000	Condenser, 0.00145 Mfd.	W	-35773	Tube Shield Cap.
10	G12-34000	Condenser, 0.004725 Mfd.	38	318-BL-18	Speaker.
11	W -30805	Condenser, 0.01 Mfd., 400 Volt.		518-CL-22	
12A	G2 -34002	Condenser, 100 Mmf.	39		
12B	G2 -34002	Condenser, 100 Mmf.	UtoZ	-36058B	Band Change Switch
12C	G2 -34002	Condenser, 100 Mmf.	40	G27-26719	Ant.-Grd. Terminal.
13Z	W -25537A	Condenser, 0.001 Mfd., 400 Volt.	41	G5 -31128	Speaker Terminal.
13Y		Condenser, 0.03 Mfd., 400 Volt.	W	-34627	Terminal Board Insulator.
14Z	W -31052	Condenser, 0.004 Mfd., 400 Volt.	W	-34628	Terminal Board Cover.
14Y		Condenser, 0.05 Mfd., 400 Volt.	42Z		Tone Control.
15	W -32378	Condenser, 0.01 Mfd., 400 Volt.	42Y	-36062	On-Off Switch.
16	W -23191A	Condenser, 0.01 Mfd., 400 Volt.	43	G6 -30745	Power Transformer, 60 Cy., 110 V.
17A	W -32379	Condenser, 0.02 Mfd., 200 Volt.		G7 -30745	Power Transformer, 25 Cy., 110 V.
17B	W -32379	Condenser, 0.02 Mfd., 200 Volt.		G8 -30745	Power Transformer, 25 Cy., 220 V.
18	See 19B		44	-36060	Volume Control.
19A	W -30321	Condenser, 1.0 Mfd., 160 Volt.	45	See 12C	
19B	W -30321	Condenser, 1.0 Mfd., 160 Volt.	46	-21876	Resistor, 10,000 Ohms.
20	G10-33005	Trimmer Condenser, 5 plate.	W	-34678B	Knob, Band Change.
21Y			W	-31585B	Knob, Controls.
21X	G33-33002	Var. Tuning Condenser, 3 Gang.	B	-33528C	Escutcheon.
			W	-33984	Escutcheon Gasket.
MG21-36045		Dial Drive Assembly.	W	-36312	Band Change Switch Plate.
W -37198		Dial Pointer only.	W	-36309	Band Change Indicator, Celluloid.
W -32293		Dial Pointer Nut (2 used).	W	-36313	Tone Control Plate.
C -36088		Dial Indicator Plate.		-35922	Grille Cloth, 5N Cabinet.
B -30375A		Cord and Plug.		-35863	Grille Cloth, 5D Cabinet.

CROSLEY RADIO CORP.

MODEL 814
Schematic, Socket
Parts



Parts List Model 814

Figures in first column correspond to figures in diagram

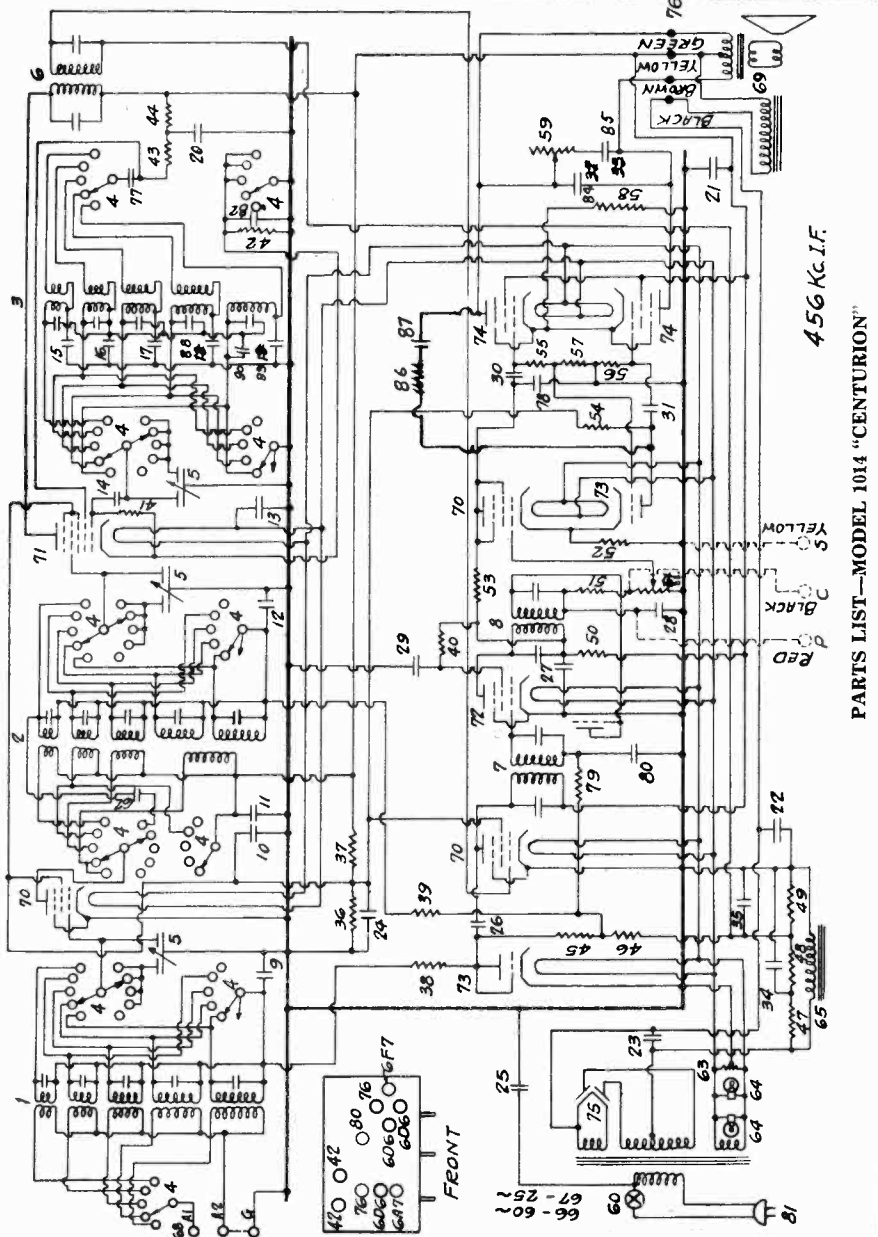
1	G30	—32000	Ant. Coil (10.0-22.0 Mc)	51	W	—32258	8 Mfd. 300 Volt (Tone Control Switch)
2	G29	—32000	Ant. Coil (4.0-10.0 Mc)	52	W	—32063	Level Control
3	G4	—32000	Ant. Coil (1.5-4.0 Mc)	53	W	—33378	10,000 Ohms
4	G3	—32000	Ant. Coil (Broadcast)	54	W	—32301	15,000 Ohms
5	G16	—32001	Inter. Coil (10.0-22.0 Mc)	55	W	—30127	450 Ohms Flex.
6	G15	—32001	Inter. Coil (4.0-10.0 Mc)	56	W	—25937	275 Ohms Flex.
7	G8	—32001	Inter. Coil (1.5-4.0 Mc)	57	W	—27503	1,400 Ohms Flex.
8	G23	—32002	Osc. Coil (Broadcast)	58	W	—27503	1,400 Ohms Flex.
9	G2	—32002	Osc. Coil (10.0-22.0 Mc)	60	W	—30127	450 Ohms Flex.
10	G22	—32002	Osc. Coil (4.0-10.0 Mc)	61	W	—22514	750 Ohms Flex.
11	G3	—32002	Osc. Coil (1.5-4.0 Mc)	62	W	—29585	600 Ohms Flex.
12	G17	—32002	Variable Capacitor	63	W	—31094	4,500 Ohms
13	G24	—33002	Band Change Switch	64	W	—21455	300,000 Ohms
14	B	—34083-A	Padding Capacitor	65	W	—21875	100,000 Ohms
15	G17	—33009	Padding Capacitor	66	W	—24814	7,000 Ohms
16	G7	—33009	Padding Capacitor	67	W	—24814	7,000 Ohms
17	G6	—33009	Padding Capacitor	68	W	—24814	7,000 Ohms
18	G5	—33009	Padding Capacitor	69	W	—21876	10,000 Ohms
19	G17	—33006	Trimmer Capacitor	70	W	—23785	500,000 Ohms
20	G16	—33006	Trimmer Capacitor	71	W	—23785	500,000 Ohms
21	G2	—34000	1647 Mmfd.	72	W	—21237-A	60,000 Ohms
22	G2	—34000	1647 Mmfd.	73	W	—23785	500,000 Ohms
23	G1	—34000	1647 Mmfd.	74	W	—23785	500,000 Ohms
24	G25	—32004	1st I. F. Transformer	75	W	—23403	150,000 Ohms
25	G23	—32004	2nd I. F. Transformer	76	W	—21237-A	60,000 Ohms
26	G24	—32004	3rd I. F. Transformer	77	W	—23785	500,000 Ohms
27	W	—32379	0.02 Mfd. 200 Volt	78	W	—23785	500,000 Ohms
28	W	—28621	0.02 Mfd. 200 Volt	79	W	—4099-A	6.3 V. Dial Lamp
29	W	—28621	0.02 Mfd. 200 Volt	80	W	—24628	Filter Choke
30	W	—28621	0.02 Mfd. 200 Volt	81	G1	—25669	60 Cy. Power Trans.
31	W	—28621	0.02 Mfd. 200 Volt	82	G37	—33906-A	25 Cy. Power Trans.
32	W	—28621	0.02 Mfd. 200 Volt	83	G38	—31007-A	Cord & Plug
33	W	—28621	0.02 Mfd. 200 Volt	84	B	—68C	Speaker Cable
34	W	—25142	0.02 Mfd. 400 Volt	85	W	—32337	Speaker
35	W	—30805	0.01 Mfd. 400 Volt	86	W	—26719	10 Ohms-10 Ohms
36	W	—23191-A	0.1 Mfd. 400 Volt	87	W	—614	Ant.-Grd. Term.
37	W	—30321	1.0 Mfd. 160 Volt	88	G14	—27975	6D6 Socket
38	W	—23615	0.05 Mfd. 400 Volt	89	G75	—27975	42 Socket
39	W	—23615	0.05 Mfd. 400 Volt	90	G25	—27975	6B7 Socket
40	W	—23635	0.006 Mfd. 400 Volt	91	G48	—27975	6B7 Socket
41	W	—30270	0.001 Mfd. 400 Volt	92	G49	—27975	6A7 Socket
42	W	—31052	0.004 Mfd. 400 Volt	93	G6	—27975	80 Socket
43	W	—32741-A	0.005 Mfd.	94	G2	—22873	220 Ohms
44	W	—31937	0.0001 Mfd.	95	W	—26577	3 Megohm
45	W	—30741	0.00025 Mfd.	96	W	—23785	500,000 Ohms
46	W	—26194-B	12 Mfd. 475 Volt	97	W	—23785	500,000 Ohms
47	W	—26194-B	8 Mfd. 450 Volt	98	W	—23785	500,000 Ohms
48	W	—26194-B	8 Mfd. 450 Volt	99	W	—23785	500,000 Ohms
49	W	—29097-D	8 Mfd. 250 Volt	100	W	—23785	500,000 Ohms

MODEL 1014, Centurion
Schematic, Socket, Parts

CROSLLEY RADIO CORP.

MARCH 1935

Fig. 1—Wiring Diagram
of Model 1014 "Centurion"



Item No.	Part No.	Description
34	W-23785	500,000 Ohms Resistor
35	W-21237A	50,000 Ohms Resistor
36	W-22873	750 Ohms Flex. Resistor
37	W-23594B	750 Ohms Flex. Resistor
38	See Item 83	Out-Of-Switch
39	W-32337	0.00025 Mfd. Condenser
40	W-32337	10.10 Ohm Resistor
41	See Item 5	Dial Light Resistor
42	G1-24628	Filter Choke
43	G1-24628	Power Transformer
44	G1-24628	2-Watt Transformer
45	G1-24628	Ant. Grid Terminal
46	G1-24628	Speaker (Console)
47	G1-24628	Speaker (Table)
48	G1-24628	Tube Shield
49	G1-24628	Tube Shield
50	G1-24628	Tube Shield
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86	G1-24628	Tube Shield
87	G1-24628	Tube Shield
88	G1-24628	Tube Shield
89	G1-24628	Tube Shield
90	G1-24628	Tube Shield

PARTS LIST—MODEL 1014 "CENTURION"

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description
1	G2-32000	Ant. Trans. Assembly
2	G4-34683	Ant. Coil Shield Assembly Only
3	G2-32001	Inter. Trans. Assembly Only
4	G5-34703	Inter. Coil Shield Assembly Only
5	G2-32002	Osc. Trans. Assembly
6	G5-34703	Osc. Coil Shield Assembly Only
7	G2-34002	0.00025 Mfd. Condenser
8	G2-34002	0.05 Mfd. 400 V. Condenser
9	G2-34002	0.05 Mfd. 500 V. Condenser
10	G1-31000	0.00025 Mfd. Condenser
11	G1-31000	10.10 Mfd. Condenser
12	G1-31000	10.10 Mfd. Condenser
13	G1-31000	10.10 Mfd. Condenser
14	G1-31000	10.10 Mfd. Condenser
15	G1-31000	10.10 Mfd. Condenser
16	G1-31000	10.10 Mfd. Condenser
17	G1-31000	10.10 Mfd. Condenser
18	G1-31000	10.10 Mfd. Condenser
19	G1-31000	10.10 Mfd. Condenser
20	G1-31000	10.10 Mfd. Condenser
21	G1-31000	10.10 Mfd. Condenser
22	G1-31000	10.10 Mfd. Condenser
23	G1-31000	10.10 Mfd. Condenser
24	G1-31000	10.10 Mfd. Condenser
25	G1-31000	10.10 Mfd. Condenser
26	G1-31000	10.10 Mfd. Condenser
27	G1-31000	10.10 Mfd. Condenser
28	G1-31000	10.10 Mfd. Condenser
29	G1-31000	10.10 Mfd. Condenser
30	G1-31000	10.10 Mfd. Condenser
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76	G1-31000	10.10 Mfd. Condenser
77	G1-31000	10.10 Mfd. Condenser
78	G1-31000	10.10 Mfd. Condenser
79	G1-31000	10.10 Mfd. Condenser
80	G1-31000	10.10 Mfd. Condenser
81	G1-31000	10.10 Mfd. Condenser
82	G1-31000	10.10 Mfd. Condenser
83	G1-31000	10.10 Mfd. Condenser
84	G1-31000	10.10 Mfd. Condenser
85	G1-31000	10.10 Mfd. Condenser
86	G1-31000	10.10 Mfd. Condenser
87	G1-31000	10.10 Mfd. Condenser
88	G1-31000	10.10 Mfd. Condenser
89	G1-31000	10.10 Mfd. Condenser
90	G1-31000	10.10 Mfd. Condenser

CROSLLEY RADIO CORP.

MODEL 1014, Centurion
Chassis, Trimmers
Voltage, Data

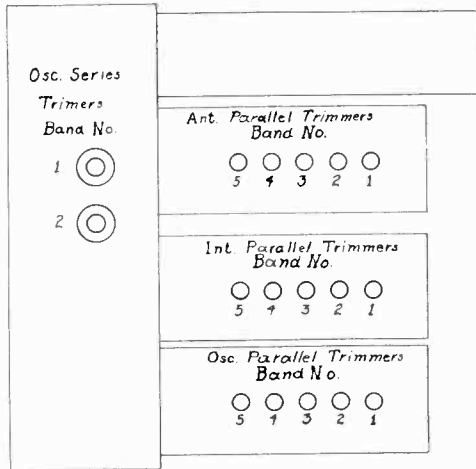


Fig. 3 End View

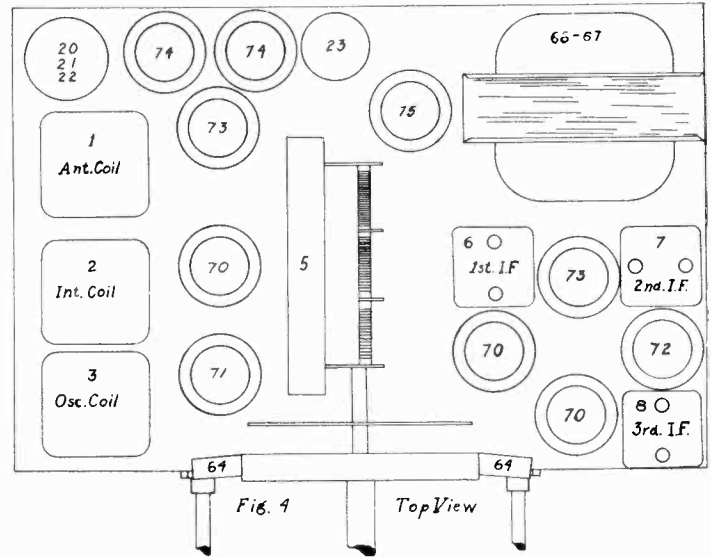


Fig. 4 Top View

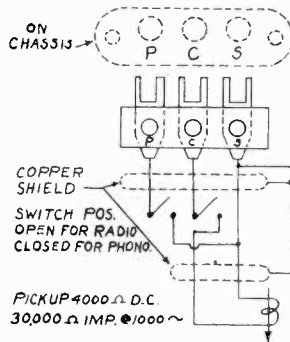


Fig. 5-5- Phone Connections

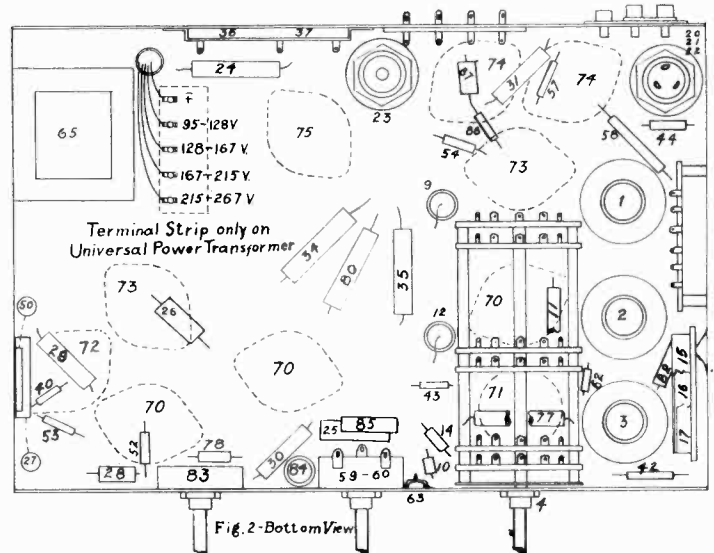


Fig. 2-Bottom View

TUBES AND VOLTAGE LIMITS

The following are the tubes and voltages measured from the tube contact to chassis with a 500,000 ohm 500-Volt voltmeter with receiver in operating condition but with no signal to the antenna, and with a line voltage of 117.5 volts 60 cycle. Voltage limits are plus or minus 10% of values given.

TUBE VOLTAGES—MODEL 1014 "CENTURION"

Type	Where Used	Ef	Ek	Eg	Esg	Esup.	Ep	Es1	Epl
			Bands 1-2	Bands 3-4-5					
6D6	R. F. Amp.	6.3	0	0	x	100	0	250	—
6A7	Osc. Mod.	6.3	11.0	0	x	100	0	250	—
6D6	1st I. F.	6.3	0	0	x	100	0	250	—
6F7	2nd I. F. & Det.	6.3	0	0	x	75	—	240	0
76	A. V. C.	6.3	0	0	x	—	—	x	—
6D6	1st A. F. Amp.	6.3	4	4	0	40	40	40	—
76	Phase Inv.	6.3	4	4	0	—	—	50	—
(2) 42	Output	6.3	16	16	0	250	—	245	—
80	Rect.	5.0	—	—	—	—	—	—	—

VOLTAGE DROP ACROSS FIELD CHOKE 20 VOLTS
VOLTAGE DROP ACROSS FIELD COIL 65 VOLTS
x IN ABOVE TABLE INDICATES HIGH RESISTANCE IN CIRCUIT WHICH PREVENTS ACCURATE MEASUREMENT.
ALL Measurements Made With A 1000 Ohms Per Volt Voltmeter From Chassis

(The power consumption at 117.5 volts is approximately 95 watts.)

**MODEL 1014, Centurion
Alignment, Data**
CROSLLEY RADIO CORP.
MODEL 1014 "CENTURION"
SPECIFICATIONS

The Crosley Model 1014 is a ten tube superheterodyne all wave receiver designed for A.C. operation. It may be obtained for 110 volts, 60 cycles, or with a universal transformer for other voltages and frequencies. (See Universal Power Transformer). It is designed for five band operation covering the following frequencies:

- Band 1. 150-350 Kilocycles.
- Band 2. 540-1500 Kilocycles.
- Band 3. 1500-4000 Kilocycles.
- Band 4. 4000-10000 Kilocycles.
- Band 5. 10000-22000 Kilocycles.

Bands 1 and 2 are calibrated on the dial in Myriacycles (10 Kc.). Bands 3, 4 and 5 are calibrated in Megacycles (1000 Kc.). It employs a retroactive automatic volume control together with level control, continuously variable tone control, class "A" audio amplification and band spread dial pointer, 36 to 1 ratio.

CIRCUIT DESCRIPTION

The circuit consists of one stage of R.F. amplification, an oscillator-detector, two stages of I.F. amplification, automatic volume control, second detector, two stages of A.F. amplification and power supply. The R.F. stage employs a Type 6D6 tube. A Type 6A7 tube is used as an oscillator-detector. The first I.F. stage employs a Type 6D6 tube and the second stage uses a Type 6F7 tube which also serves as a second detector. A Type 76 tube is used in the A.V.C. circuit and is actuated by the output of the first I.F. stage. The first A.F. stage uses a Type 6D6 tube, connected as a variable mu triode, which is used in conjunction with a Type 76 tube in a phase inverter circuit to drive a pair of Type 42 tubes in push-pull. A Type 80 Tube is used in the power supply.

UNIVERSAL POWER TRANSFORMER

The Model 1014 chassis for use on other than 110 volts, 60 cycles, is supplied with a universal power transformer designed to operate on 25 cycles and up. When leaving the factory it is wired for the voltage indicated on the name plate. It is possible however by a slight wiring change in power transformer circuit to adapt the set to a different voltage anywhere from 95 to 265 volts. To adapt the set to a different line voltage it is necessary to remove the chassis from the cabinet, remove bottom from chassis and locate the terminal strip on the bottom of the power transformer. Fig. 2. After careful measurement of the maximum and minimum values of line voltage and determining the average value, unsolder the wire of the A.C. line cord and solder it to the terminal which most nearly represents the line voltage at which the set is to be operated.

PHONOGRAPH PICKUP

Chassis equipped with a universal power transformer also have three terminals on the back for connecting a phonograph pickup. These terminals are marked P.C.S. and the pickup is connected through a double pole-single throw switch to these terminals as shown in Fig. 5.

PEAKING PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and will not need readjustment unless some coil or condenser has been replaced. Do not change the setting of any trimmer condenser unless it is definitely known that the adjustment is necessary. If re-alignment is found necessary, the circuits can be properly adjusted only with the use of a modulated test oscillator and output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate of one of the Type 42 tubes and the other terminal to the plate of the other Type 42 tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first to the left of the filament prongs. Be sure 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.

PEAKING I. F. STAGES AT 456 Kc.

- I. Connect the ground lead of the test oscillator to the chassis frame. Connect a .1 mfd., or larger, condenser in series with the other lead and connect this lead to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. The .1 mfd. condenser is necessary to prevent a short circuit which would remove the bias voltage.
- II. Set the test oscillator at 456 kilocycles.
- III. Turn the volume control of the receiver on full. Turn the station selector until the tuning condenser plates are completely meshed and set the band switch to band No. 5.

- IV. (a) Peak both tuning condensers located on top of the first I.F. transformer shown on Fig. 4. NOTE: Be sure to use the lowest oscillator output that will give a reasonable scale deflection on the output meter. 30 to 90 volts output is satisfactory.

(b) Peak both tuning condensers located on top of the 2nd I. F. transformer shown on Fig. 4.

(c) Peak both tuning condensers located on top of the 3rd. I.F. transformer shown on Fig. 4.

- V. Repeat IV to insure accurate adjustment of the I.F. tuning condensers.

PEAKING R. F. CIRCUITS

- I. Connecting test oscillator to receiver: It is necessary to connect a dummy antenna in series with the test oscillator and the antenna terminal of the receiver. On bands 1 and 2 this consists of a .0002 mfd. mica condenser. On bands 3, 4 and 5 it consists of a carbon resistor of approximately 400 ohms. With the tuning condenser plates completely meshed make certain that the dial pointer is exactly horizontal. If not, loosen nut and set pointer horizontal and tighten nut again. The setting of the band spread pointer is not important.
- II. To Peak Band No. 1. NOTE: Be sure to use the lowest oscillator output that will give a reasonable scale deflection on the output meter. 30 to 90 volts output is satisfactory.

(a) Set test oscillator at 350 Kc. Tune station selector to 350 Kc. (35 on dial). Then adjust oscillator parallel trimmer condenser, Fig. 3, for maximum output.

(b) With same dial settings peak the interstage and antenna parallel trimmer condenser for Band No. 1.

(c) (1) Set test oscillator at 150 Kc.

(2) Tune station selector in the region of 15—Band No. 1—on dial for maximum reading on the output meter.

(3) Close the oscillator series trimmer condenser for Band No. 1, Fig. 3, ¼ turn and re-tune station selector to 150 Kc. signal for maximum output, noting reading on output meter.

(4) If meter reads higher after operation (3) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If meter reads lower after operation (3) open the oscillator series trimmer condenser ¼ turn and re-tune station selector to 150 Kc. signal, noting reading on output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.

(d) Repeat operations (a) and (b) for more accurate adjustments.

- III. To Peak Band No. 2.

(a) Set test oscillator at 1400 Kc. Tune station selector to 1400 Kc. (140 on dial). Then adjust oscillator parallel trimmer condenser for Band No. 2 for maximum output.

(b) With same dial settings peak the interstage and antenna parallel trimmer condensers for Band No. 2.

(c) (1) Set test oscillator at 600 Kc.

(2) Tune station selector in the region of 60—Band No. 2—on dial for maximum reading on the output meter.

(3) Close the oscillator series trimmer condenser for Band No. 2, Fig. 3, ¼ turn and re-tune station selector to 600 Kc. signal for maximum output, noting reading on output meter.

(4) If meter reads higher after operation (3) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If meter reads lower after operation (3) open the oscillator series trimmer condenser ¼ turn and re-tune station selector to 600 Kc. signal, noting reading on output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.

(d) Repeat operations (a) and (b) for more accurate adjustments.

- IV. To Peak Band No. 3.

(a) Be sure to change dummy antenna as described in I under Peaking R.F. Circuits.

(b) Set test oscillator at 4 megacycles. Tune the station selector to 4 megacycles (4.0—Band No. 3 on dial). Then adjust oscillator parallel trimmer condenser for Band No. 3 for maximum output.

(c) With the same dial settings peak the interstage and antenna parallel trimmer condensers for Band No. 3.

- V. To Peak Band No. 4.

(a) Set test oscillator at 10 megacycles.

(b) Tune station selector to 10 megacycles (10—Band No. 4 on dial).

(c) Open oscillator parallel trimmer condenser for Band No. 4 about 3 turns from closed.

(d) Close the interstage parallel trimmer condenser for Band No. 4 and open ¼ turn.

(e) Close the antenna parallel trimmer condenser for Band No. 4 and then open ¼ turn.

(f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser. As a check on the adjustment set the station selector to approximately 9 on the dial and try to tune in the 10 megacycle signal from the test oscillator. If a signal is heard the oscillator has been aligned on the correct frequency.

(g) Re-tune to 10 megacycles and peak the antenna parallel trimmer condenser for maximum output.

(h) Open the interstage parallel trimmer condenser another ¼ turn and re-tune the station selector to the 10 megacycle signal.

(i) Repeat operation (h) as many times as necessary to obtain the highest reading on the output meter on first peak obtained when opening trimmer condenser from closed position.

(j) Repeat operation (g) above.

- VI. To Peak Band No. 5.

(a) Set test oscillator at 21 megacycles.

(b) Tune station selector to 21 megacycles (21—Band No. 5 on dial).

(c) Open oscillator parallel trimmer condenser for Band No. 5 about 3 turns from closed.

(d) Close the interstage parallel trimmer condenser for Band No. 5 and open ¼ turn.

(e) Close the antenna parallel trimmer condenser for Band No. 5 and then open ¼ turn.

(f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser. As a check on the adjustment set the station selector to approximately 20 on the dial and try to tune in the 21 megacycle signal from the test oscillator. If a signal is heard the oscillator has been aligned on the correct frequency.

(g) Re-tune to 21 megacycles and Peak the antenna parallel trimmer condenser for maximum output.

(h) Open the interstage parallel trimmer condenser another ¼ turn and re-tune the station selector to the 21 megacycle signal.

(i) Repeat operation (h) as many times as necessary to obtain the highest reading on the output meter on first peak obtained when opening trimmer condenser from closed position.

(j) Repeat operation (g) above.