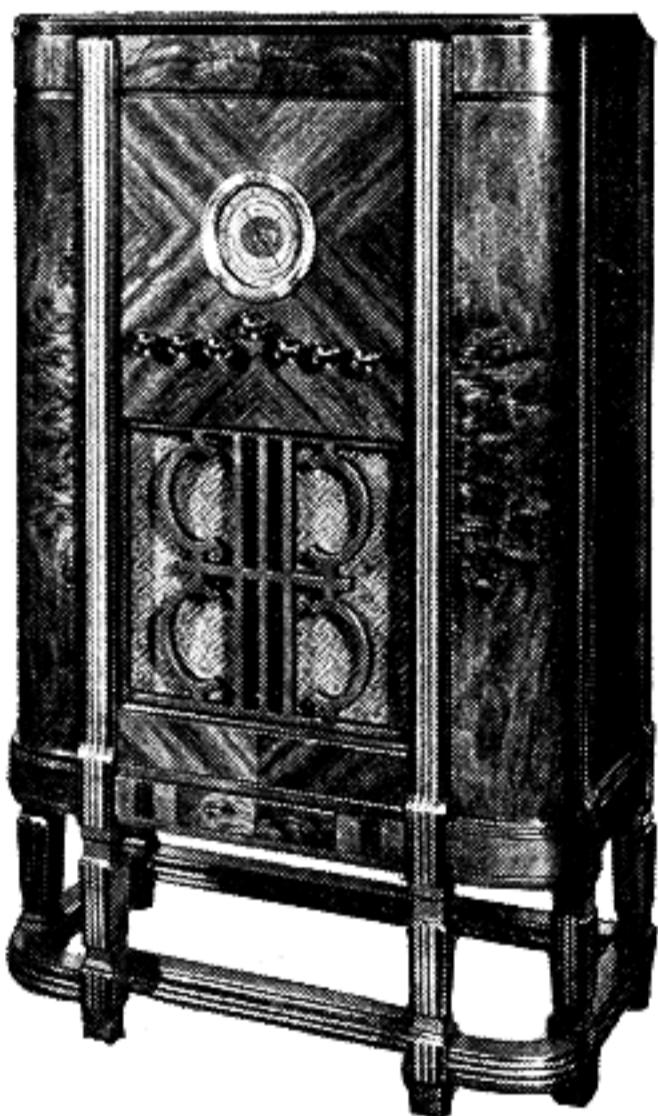


RCA Victor Model 262

Ten-Tube, Five-Band A. C. Receiver

SERVICE NOTES



SERVICE DIVISION

RCA Victor Company, Inc.

Camden, N. J., U. S. A.

A RADIO CORPORATION OF AMERICA SUBSIDIARY

REPRESENTATIVES IN PRINCIPAL CITIES

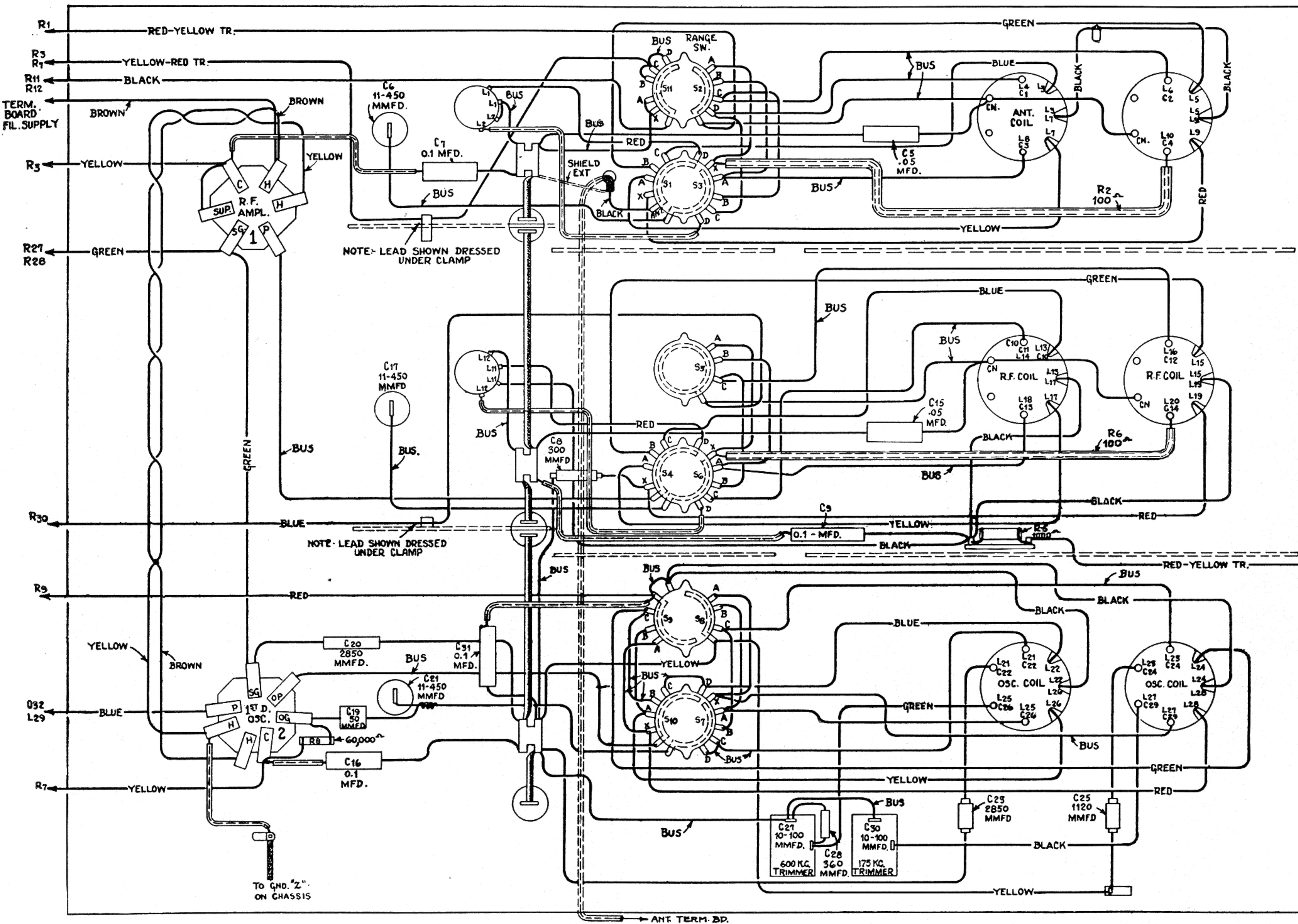


Figure 8—R. F. Unit Wiring Diagram—Models with sensitivity control change for band position

(c) The antenna and detector trimmers should now be peaked for maximum output.

Band "C"

(a) Tune the external oscillator to 18,000 KC, and set the pointer at 18 M. C. Adjust the oscillator trimmer for maximum output. The

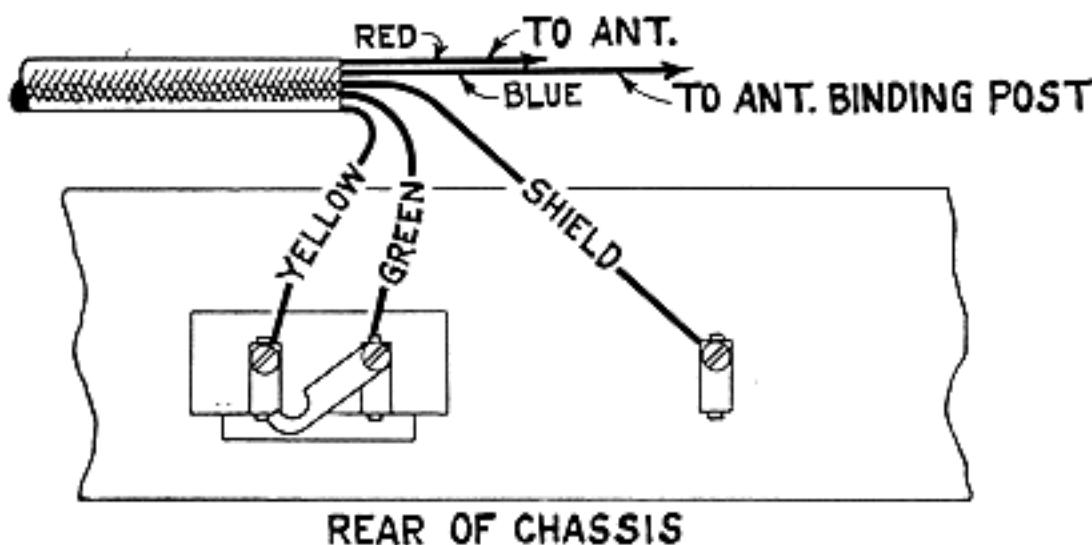


Figure 9—Junior "Duo" Connections

trimmer should be set at the first peak obtained when increasing the trimmer capacity from minimum to maximum.

(b) Check for the image signal, which should be received at approximately 17,080 on the dial. It may be necessary to increase the external oscillator output for this check.

(c) Reduce the capacity of the detector trimmer, while rocking the tuning capacitor, until the

signal disappears. The first detector circuit is then aligned with the oscillator circuit and the RCA-6A7 tube is blocked. Then increase the capacity of the detector trimmer, while rocking the tuning capacitor, until the signal is peaked for maximum output.

(d) The antenna trimmer should now be peaked for maximum output. It is not necessary to rock the main tuning capacitor while making this adjustment.

Band "D"

No adjustments are required for band "D."

(4) MAGNETIC PICKUP CONNECTIONS

A terminal board (link in series with first audio stage cathode) is provided at the rear of the chassis for adding phonograph facilities to this instrument. Figure 9 shows the connections that will be required for the Junior "Duo" turntable assembly.

(5) VOLTAGE READINGS

The following voltages are those at the various tube sockets while the receiver is in operating condition. No allowance has been made for currents drawn by the meter, and if low-resistance meters are used, such allowances must be made. Figure 11 shows a chart in which the various voltages of the tube contacts are shown.

RADIOTRON SOCKET VOLTAGES

120-Volt A. C. Input—Volume and Sensitivity Controls Maximum—Band Switch at "A"—No Signal

Radiotron No.	Cathode to Ground Volts, D. C.	Screen Grid to Ground Volts, D. C.	Plate to Ground Volts, D. C.	Cathode Current, M. A.	Heater Volts, A. C.
RCA-6D6—R. F.	2.5	101	242	9.2	6.3
RCA-6A7	Detector	2.8	101	244	6.3
	Oscillator	—	—	244	
RCA-6D6—I. F.	2.5	101	242	9.2	6.3
RCA-76—2nd Det. AVC	0	—	—	0	6.3
RCA-76—A. F.	6.2	—	196*	1.2	6.3
RCA-76—Driver	11.4	—	247	5.6	6.3
RCA-76—Driver	11.4	—	247	5.6	6.3
RCA-42—Power	0	247	376	21.0	6.3
RCA-42—Power	0	247	376	21.0	6.3
RCA-5Z3—Rectifier	—	—	768/384 R. M. S.	112	5.0

*Cannot be measured with ordinary voltmeter.

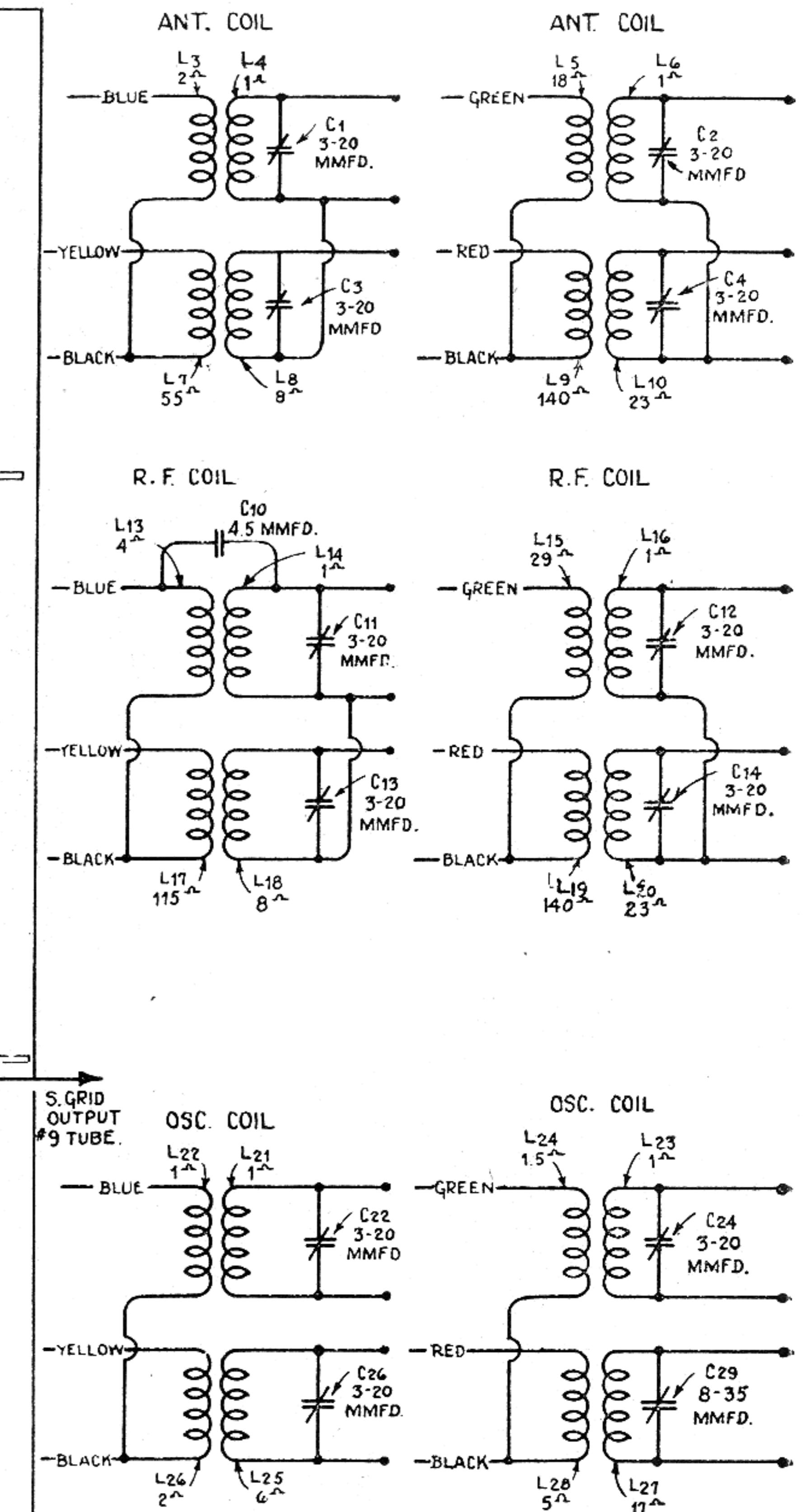
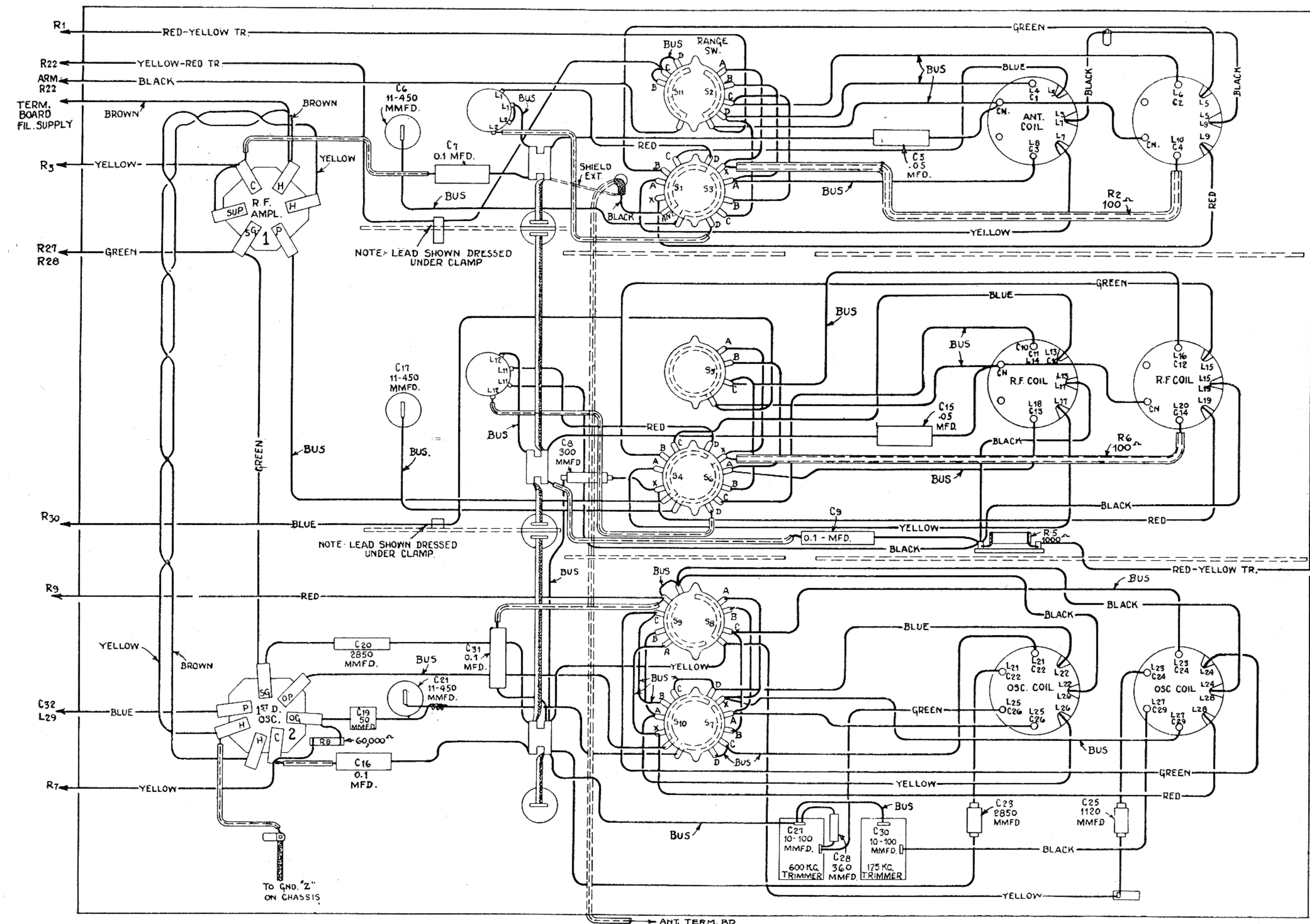


Figure 10—R. F. Unit Wiring Diagram—Models with fidelity change for band position

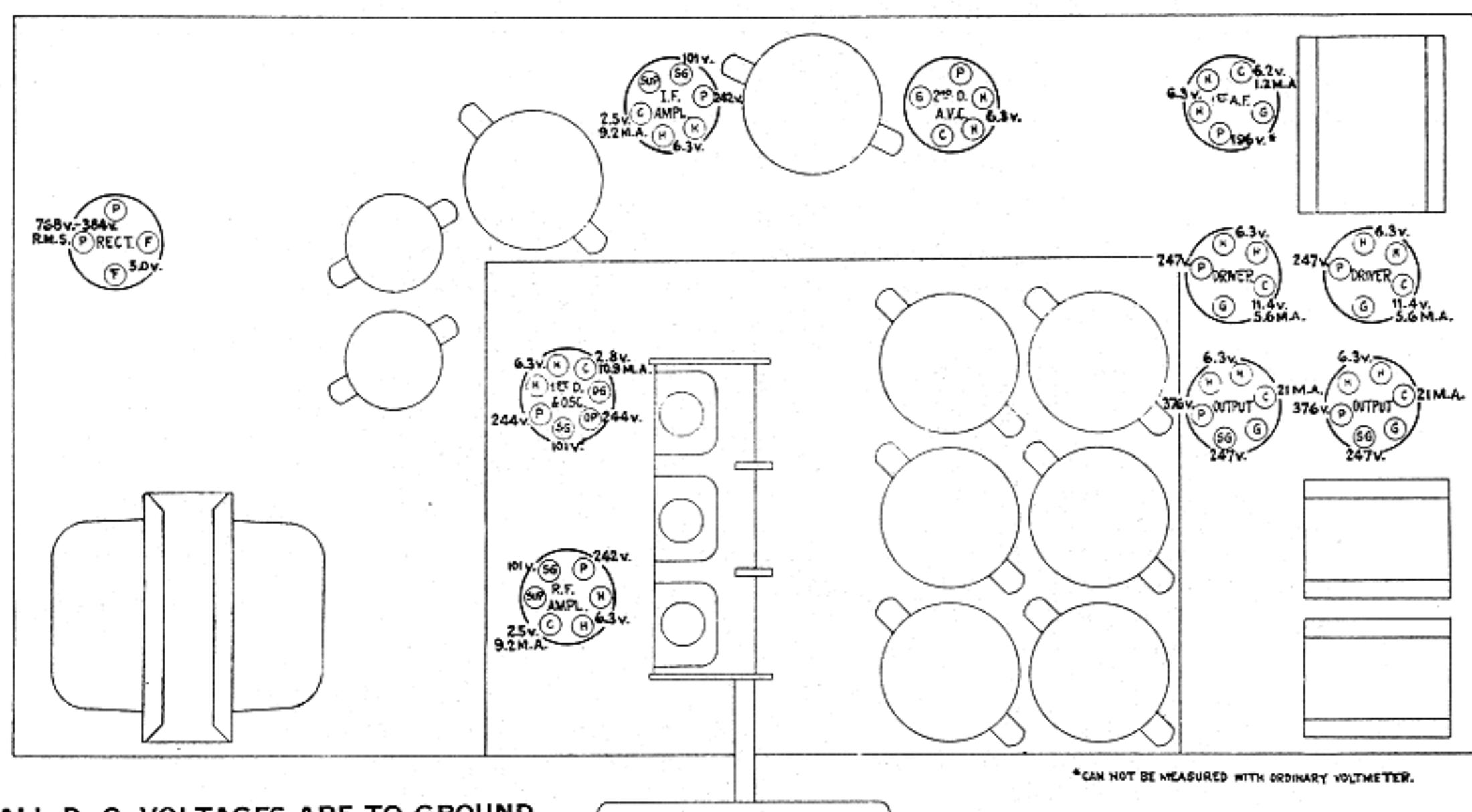


Figure 11—Radiotron Socket Voltages

REPLACEMENT PARTS

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

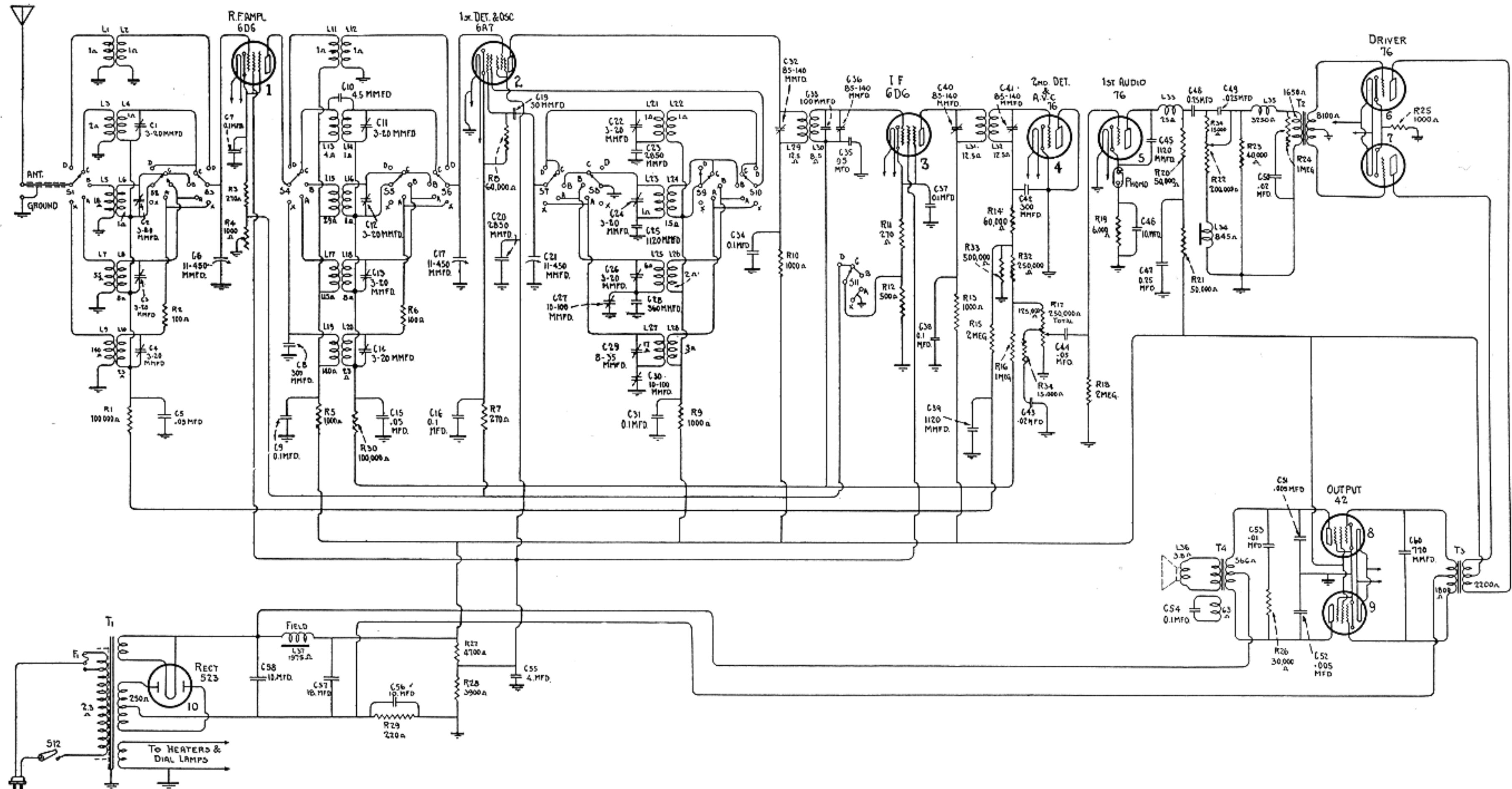
Stock No.	Description	List Price	Stock No.	Description	List Price
	RECEIVER ASSEMBLIES				
4372	Bracket—Bass tone control mounting bracket.	\$0.20	4604	Mount—Fuse mount for 200-250 volt operation.....	\$0.35
4683	Bracket—Treble tone control mounting bracket.....	.25	7784	Reactor—Tone control reactor (L34).....	1.30
4406	Bracket—Volume control mounting bracket.....	.25	6135	Resistor—270 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R3, R7, R11).....	1.00
3794	Capacitor—100 mmfd.—Located on first I. F. transformer (C33).....	.30	4622	Resistor—500 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 10 (R12)*.....	2.00
3981	Capacitor—300 mmfd.—Located on second I. F. transformer (C42).....	.30	4370	Resistor—1,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 10 (R9, R10, R13, R25).....	2.00
4668	Capacitor—770 mmfd. (C60).....	.30	6243	Resistor—6,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R19).....	1.00
4409	Capacitor—1120 mmfd. (C39, C45).....	.35	3998	Resistor—15,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R34).....	1.00
3643	Capacitor—0.005 mfd. (C51, C52).....	.25	6143	Resistor—40,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R23).....	1.00
3787	Capacitor—0.01 mfd. (C53).....	.30	3602	Resistor—60,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R14).....	1.00
3639	Capacitor—0.02 mfd. (C43).....	.25	3118	Resistor—100,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R1, R30).....	1.00
4652	Capacitor—0.02 mfd. (C50).....	.60	3744	Resistor—250,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R32).....	1.00
3888	Capacitor—0.05 mfd. (C35).....	.25	6186	Resistor—500,000 ohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R33).....	1.00
4694	Capacitor—0.05 mfd. (C44).....	.30	3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R16).....	1.00
3765	Capacitor—0.025 mfd. (C49).....	.34	6242	Resistor—2 megohms—Carbon type— $\frac{1}{4}$ watt—Package of 5 (R15, R18).....	1.00
3877	Capacitor—0.1 mfd. (C37).....	.32	3594	Resistor—50,000 ohms—Carbon type— $\frac{1}{2}$ watt—Package of 5 (R20, R21).....	1.00
4645	Capacitor—0.1 mfd. (C34, C38).....	.25	2240	Resistor—30,000 ohms—Carbon type—1 watt (R26).....	.22
3597	Capacitor—0.25 mfd. (C47).....	.40			
3702	Capacitor—0.25 mfd. (C48).....	.42			
7790	Capacitor—10. mfd. (C58).....	1.05			
7788	Capacitor—18. mfd. (C57).....	1.10			
7833	Capacitor pack—Comprising two 10. mfd. and one 4. mfd. capacitor (C46, C55, C56).....	2.00			
4420	Clamp—Antenna lead clamp and screw—Package of 10.....	.40			
4358	Clamp—Mounting clamp for capacitor—Stock No. 7788 or No. 7790.....	.15			
7806	Coil—First audio plate choke (L33).....	.30	4649	Resistor—Flat type—Total resistance 8820 ohms—Divided as follows: one 220 ohms, one 3,900 ohms and one 4,700 ohms section (R27, R28, R29).....	1.05
4371	Cover—Fuse mount cover.....	.15			
10907	Fuse—3 amperes—Package of 5.....	.40			
3376	Mount—Fuse mount—105-125 volt operation.....	.40	7804	Rheostat—Sensitivity control rheostat (R4).....	1.30

* R12 Resistor—500 ohms—Some Models

REPLACEMENT PARTS (Continued)

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers

Stock No.	Description	List Price	Stock No.	Description	List Price
4656	Screw—Volume control mounting assembly—Comprising one bushing, one washer, one shakewood washer and one nut.....	\$0.18	4656	Screw—Chassis mounting screw assembly—Comprising one bushing, one washer, one shakewood washer, and one nut (four sets required to mount chassis).....	\$0.18
4452	Shield—First audio, second detector A.V.C. or driver Radiotron shield.....	.35	7800	Shield—Antenna, detector or oscillator coil shield.....	.45
3683	Shield—Second detector—A.V.C. Radiotron shield top.....	.20	4452	Shield—First detector-oscillator Radiotron shield.....	.35
4453	Shield—I. F. Radiotron shield.....	.32	3683	Shield—Radiotron shield top.....	.20
7800	Shield—Intermediate frequency transformer shield.....	.45	4454	Shield—R. F. amplifier Radiotron shield.....	.44
3859	Socket—4-contact rectifier Radiotron socket.....	.30	3529	Socket—Dial lamp socket.....	.32
7484	Socket—5-contact first audio, second detector A.V.C. or driver Radiotron socket.....	.35	7485	Socket—6-contact R. F. amplifier Radiotron socket.....	.40
7485	Socket—6-contact I. F. Radiotron socket.....	.40	3572	Socket—7-contact first detector-oscillator Radiotron socket.....	.38
6676	Socket—6-contact output Radiotron socket.....	.40	7836	Switch—Range switch (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11).....	3.05
4686	Strip—"ANT-GND" terminal strip—Two terminals and link.....	.20			
7796	Switch—Operating switch (S12).....	.62			
7795	Tone control—Bass tone control (R22).....	1.30			
4648	Tone control—Treble tone control (R24).....	1.25	4362	DRIVE ASSEMBLIES	
7841	Transformer—Audio transformer pack comprising interstage transformer and reactor (T2, L35).....	4.05	10194	Arm—Band indicator operating arm.....	.28
4431	Transformer—First intermediate frequency transformer (L29, L30, C32, C33, C36).....	2.28		Ball—Steel ball for variable condenser drive assembly—Package of 20.....	.25
4433	Transformer—Second intermediate frequency transformer (L31, L32, C40, C41, C42).....	2.15	4422	Clutch—Tuning condenser drive clutch assembly—Comprising drive shafts, balls, ring, spring and washers—Assembled.....	.88
7832	Transformer—Driver transformer (T3).....	2.85	4455	Dial—Station selector dial.....	.60
9505	Transformer—Power transformer—105-125 volts—50-60 cycles (T1).....	6.35	7799	Drive—Variable tuning condenser drive assembly complete.....	2.45
9506	Transformer—Power transformer—105-125 volts—25-40 cycles.....	8.90	4364	Gear—Spring gear assembly complete with hub, pinion, gear cover and spring.....	.96
9507	Transformer—Power transformer—105-250 volts—40-60 cycles.....	6.40	4361	Indicator—Band indicator—Celluloid lettered—D. C. B. A. X.....	.12
4650	Volume control (R17).....	1.38	4363	Pointer—Station selector main (large) pointer.....	.18
			4367	Pointer—Station selector vernier (small) pointer.....	.15
			3943	Screen—Celluloid screen for dial light—Package of 2.....	.18
			3993	Screw—No. 6-32-5/32" square head set screw for band indicator operating arm or variable condenser drive—Package of 10.....	.25
2747	Cap—Contact cap—Package of 5.....	.50		Spring—Band indicator and arm tension spring—Package of 5.....	.25
4646	Capacitor—4.5 mmfd. (C10).....	.20	4377	Stud—Band indicator operating arm stud—Package of 5.....	.25
4633	Capacitor—50 mmfd. (C19).....	.25			
3981	Capacitor—300 mmfd. (C8).....	.30			
4413	Capacitor—360 mmfd. (C28).....	.22	4378		
4412	Capacitor—1,120 mmfd. (C25).....	.25			
4524	Capacitor—2,850 mmfd. (C23).....	.35			
4615	Capacitor—2,850 mmfd. (C20).....	.34			
4417	Capacitor—0.05 mfd. (C5, C15).....	.25	4653	CABLE ASSEMBLIES	
4415	Capacitor—0.1 mfd. (C7, C16).....	.30	4654	Cable—Main cable.....	1.90
4645	Capacitor—0.1 mfd. (C9, C31).....	.25	4655	Cable—4-conductor—Reproducer cable.....	.58
3861	Capacitor—Adjustable capacitor (C27, C30).....	.78		Cable—Shielded cable—From low-frequency tone control to resistor boards.....	.58
4420	Clamp—Antenna lead clamp and screw—Package of 10.....	.40			
4410	Coil—Antenna coil—Band "D" (L1, L2).....	.70	4645	REPRODUCER ASSEMBLY	
7803	Coil—Antenna coil—B.-S.W. (L3, L4, L7, L8, C1, C3).....	1.82	7835	Capacitor—0.1 mfd.—Located on output transformer (C54).....	.25
7810	Coil—Antenna coil—P.B.—L.W. (L5, L6, L9, L10, C2, C4).....	2.10	8969	Coil—Field coil, magnet and cone support (L37).....	4.55
7805	Coil—Detector coil—B.-S.W. (L13, L14, L17, L18, C11, C13).....	2.15	9543	Cone—Reproducer cone (L36)—Package of 5.....	6.35
7808	Coil—Detector coil—P.B.—L.W. (L15, L16, L19, L20, C12, C14).....	2.05	6999	Reproducer—Reproducer complete.....	10.36
4421	Coil—Detector coil—Band "D" (L11, L12).....	.70	7834	Screen—Dust (cloth) screen—Package of 6.....	.12
7807	Coil—Oscillator coil—B.-S.W. (L21, L22, L25, L26, C22, C26).....	1.62		Transformer—Output transformer and capacitor (T4, C54).....	3.75
7809	Coil—Oscillator coil—P.B.—L.W. (L23, L24, L27, L28, C24, C29).....	1.70	4677		
7801	Condenser—3-gang variable tuning condenser (C6, C17, C21).....	4.42	6614	MISCELLANEOUS PARTS	
4340	Lamp—Dial lamp—Package of 5.....	.60	3829	Bezel—Metal bezel (escutcheon) for station selector dial glass.....	.56
4370	Resistor—1,000 ohms—Carbon type—1/4 watt—Package of 10 (R5).....	2.00	4657	Glass—Station dial glass.....	.30
3602	Resistor—60,000 ohms—Carbon type—1/4 watt—Package of 5 (R8).....	1.00	4678	Knob—Bass or treble tone control, volume or sensitivity control range switch or operating switch knob—Package of 5.....	1.10
4418	Resistor—100 ohms—Flexible type—Package of 10 (R2, R6).....	1.50	4119	Knob—Knob station selector knob—Package of 5.....	.65
			4393	Ring—Retaining ring for dial glass—Pkg. of 5.....	.34
				Screw—8-32-1/4" headless set screw for knob—Stock No. 4657—Package of 20.....	.38
				Screw—8-32-5/16" headless set screw for knob—Stock No. 3829—Package of 10.....	.25



RCA VICTOR MODEL 262

Ten-Tube, Five-Band A. C. Superheterodyne SERVICE NOTES

ELECTRICAL SPECIFICATIONS

Voltage Rating.....	105-125 Volts										
Frequency Rating.....	25-60 and 50-60 Cycles										
Power Consumption.....	130 Watts (All Frequencies)										
Type and Number of Radiotrons...2 RCA-6D6, 1 RCA-6A7, 4 RCA-76, 2 RCA-42, 1 RCA-5Z3—Total, 10											
Tuning Frequency Range.....	<table><tr><td>Band X—</td><td>140 KC - 410 KC</td></tr><tr><td>Band A—</td><td>540 KC - 1720 KC</td></tr><tr><td>Band B—</td><td>1720 KC - 5400 KC</td></tr><tr><td>Band C—</td><td>5400 KC - 18,000 KC</td></tr><tr><td>Band D—</td><td>18,000 KC - 36,000 KC</td></tr></table>	Band X—	140 KC - 410 KC	Band A—	540 KC - 1720 KC	Band B—	1720 KC - 5400 KC	Band C—	5400 KC - 18,000 KC	Band D—	18,000 KC - 36,000 KC
Band X—	140 KC - 410 KC										
Band A—	540 KC - 1720 KC										
Band B—	1720 KC - 5400 KC										
Band C—	5400 KC - 18,000 KC										
Band D—	18,000 KC - 36,000 KC										
Line-up Frequencies.....	175 KC, 410 KC, 460 KC, 600 KC, 1720 KC, 5160 KC, 18,000 KC										
Maximum Undistorted Output.....	7 Watts										
Maximum Output.....	14 Watts										

PHYSICAL SPECIFICATIONS

Height.....	42½ Inches
Width.....	26½ Inches
Depth.....	13½ Inches

This ten-tube, five-band all-wave superheterodyne radio receiver is an instrument in which most of the important modern radio developments have been incorporated. Wide tuning range, excellent sensitivity and selectivity and a large undistorted output contribute to the realization of outstanding performance in all major requirements. The extremely wide tuning range (140 KC to 36,000 KC except for a break between 410 KC and 540 KC) covers every broadcasting, police, aviation and amateur band used throughout the world.

Important new operating features include an "airplane" type dial with band indicator, a "second" hand for vernier tuning and "band spread," a double-

ratio vernier drive and the usual sensitivity and volume control. A circuit feature is the automatic sensitivity control change that occurs when switching from the long-wave to the short-wave bands. This enables the sensitivity control to maintain its same smooth action in all bands.

A high degree of tonal fidelity is obtained through the use of a high gain, high output, low distortion audio amplifier and a large 10-inch electro-dynamic loudspeaker. The high and low frequency tone controls provide a method whereby the frequency characteristic may be altered for adverse operating conditions such as static, station hum, etc.

DESCRIPTION OF ELECTRICAL CIRCUIT

The general circuit arrangement consists of an R. F. stage, a combined oscillator and first detector, and I. F. stage, a combined second detector and automatic volume control, an audio stage, a push-pull driver stage and a push-pull Pentode output stage. Plate and grid voltages are supplied by the RCA-5Z3 heavy duty rectifier combined with a suitable filtering stage, of which the loudspeaker field is a part. Figures 1 and 2 show the schematic circuit diagrams.

The signal enters the receiver through a shielded antenna lead and is applied to the grid of the R. F. tube through the antenna coupling transformer. The secondary of this transformer is tuned to the signal

frequency by means of one unit of the gang-capacitor. The output of this stage is transformer coupled to the grid circuit of the first detector, which is also tuned to the signal frequency by a unit of the gang-capacitor.

Combined with the signal in the first detector is the local oscillator signal, which is always at a 460 KC frequency difference (higher) from the signal frequency. A separate coil system and the third unit of the gang-capacitor are used in the oscillator circuit.

In conjunction with these three tuned circuits it is well to point out that five different groups of tuned circuits are used, one group for each tuning band. A

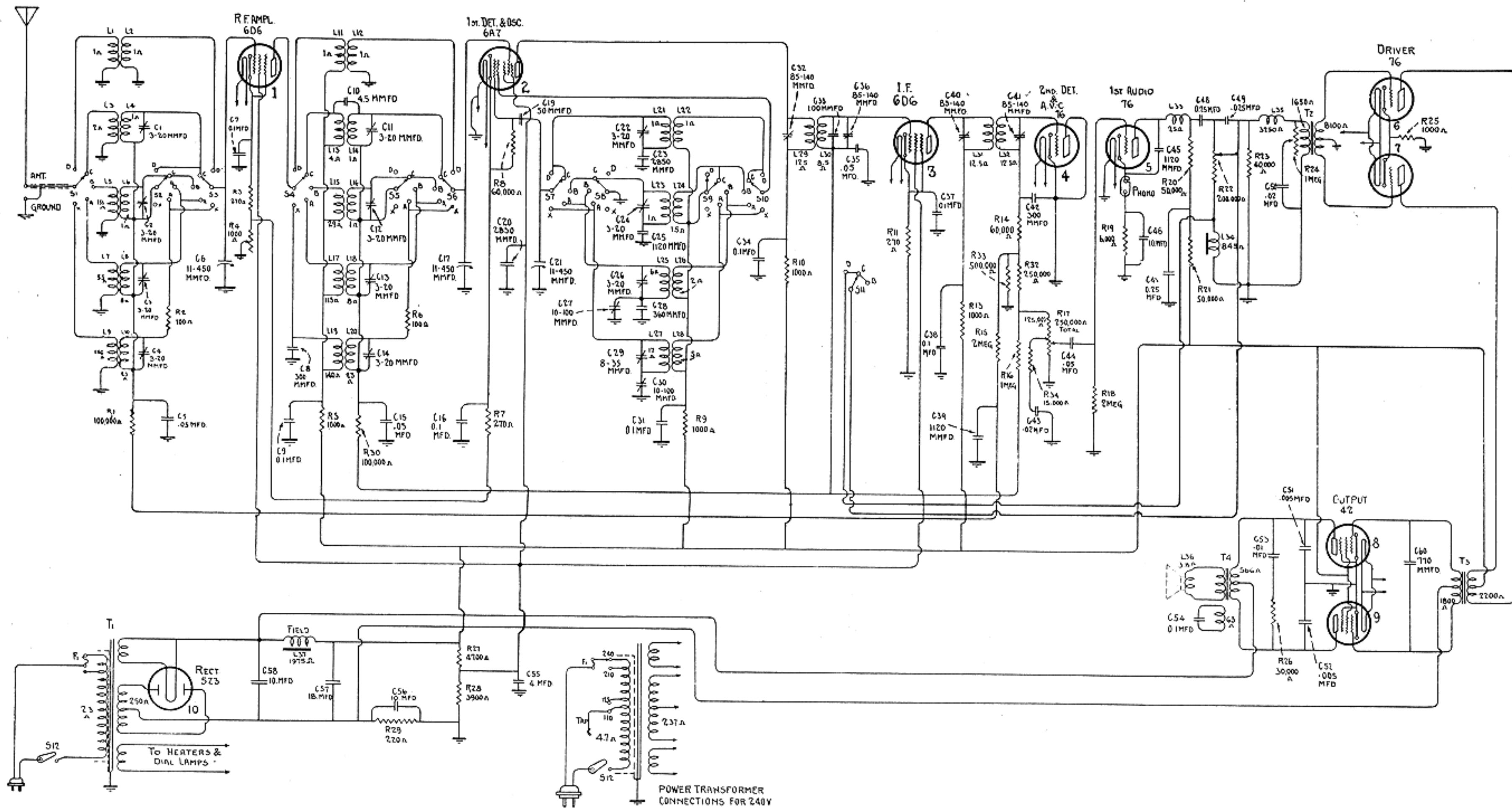


Figure 2—Schematic Circuit Diagram—Models with fidelity change for band position

five-position selector switch is provided for selecting the band in which the desired signal is located. In addition to selecting the desired coil system, additional groups of contacts are provided for short-circuiting the preceding lower frequency R. F. and detector coils and the two preceding oscillator coils. This is to prevent "dead" spots due to absorption effects caused by the coils, the natural period of which without the gang-capacitor connected falls in the next higher frequency band. This gang-switch also has additional contacts for changing the sensitivity in the various bands.

The sensitivity control in bands X and A controls the R. F. and first detector while in bands B, C and D it controls the R. F., first detector and I. F. stage. This is caused by the action of the selector switch. It should also be noted that the sensitivity control is paralleled with a 500-ohm resistor (R-12, Figure 1) in bands B, C and D.

The output of the first detector, which is the I. F. signal (460 KC), is fed directly through two tuned circuits to the grid of the I. F. amplifier stage. The I. F. stage, which utilizes Radiotron RCA-6D6, uses two transformers, which consist of four tuned circuits, all of which are tuned to 460 KC.

The output of the I. F. amplifier is then applied to the grid of the RCA-76 second detector. The plate of this tube is connected to its cathode and the tube operated as a diode detector and automatic volume control. The direct current component of the rectified signal produces a voltage drop across resistors R-32 and R-17. The voltage drop across both resistors constitutes the automatic bias voltage for the R. F. stage, while the drop across R-17 alone constitutes the bias voltage for the first detector and I. F. stage. These automatic bias voltages for the R. F., first detector and I. F. stages give the automatic volume control action of the receiver. It should be noted that resistor R-33 is connected in parallel across resistors R-32 and R-17. This reduces the total amount of resistance in the circuit to a proper value. Resistor R-34 and capacitor C-43, which are connected in series and from a tap on the volume control to ground, provide low frequency, low volume compensation.

The volume control selects the amount of audio voltage that is applied to the grid of the RCA-76 A. F. stage and thereby regulates the volume of the entire receiver. The first audio stage is coupled through a high and low frequency tone control system and transformer to the grid circuit of the push-pull drive stage. It should be noted that a link has been provided in series with the cathode of this stage, so that phonograph connections may be easily made if required.

The driver stage is transformer coupled to the output stage, which consists of two Radiotrons, RCA-42, connected in push-pull. A feature of the output stage is the use of fixed bias, which reduces distortion and

increases the available output. This is accomplished by the use of the drop across R-29, which carries the entire DC output from the rectifier. Naturally the output stage uses but a portion of the total rectified current and current variations in it have but little effect on the drop across the resistor.

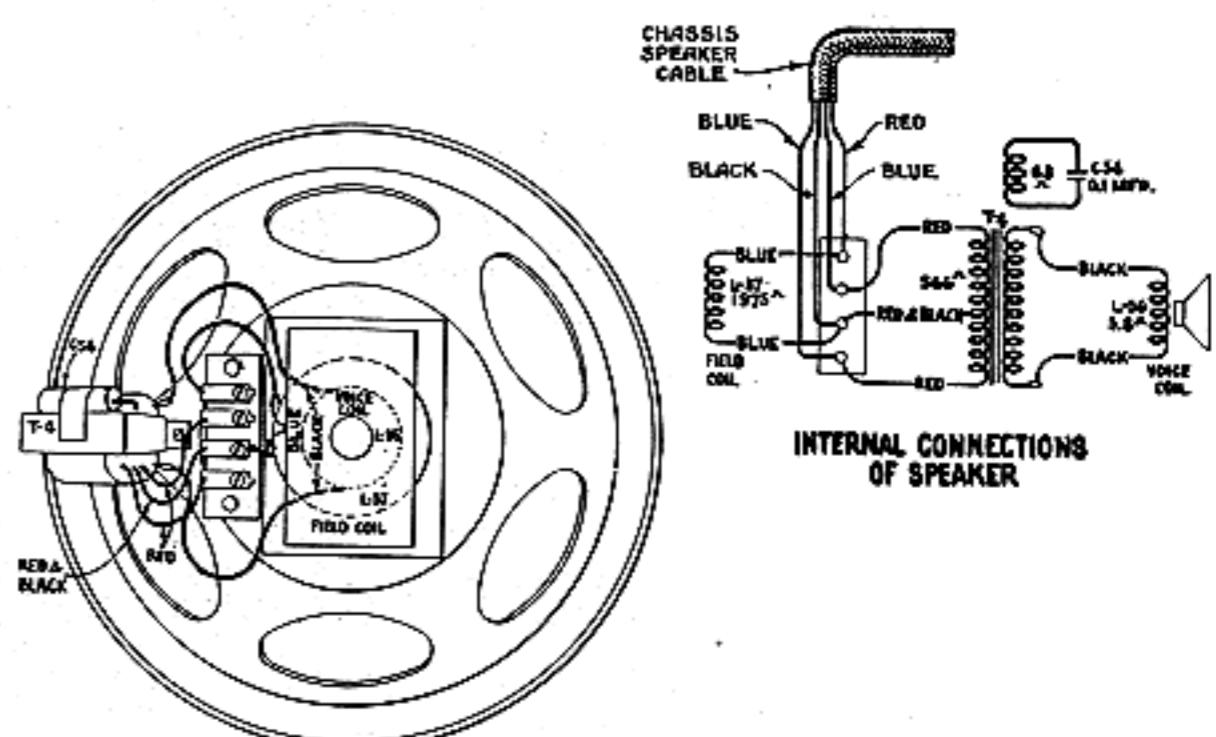


Figure 3—Loudspeaker Wiring

The output of the power stage is coupled through a step-down transformer to the voice coil of the loudspeaker. A separate winding, which is shunted by a capacitor, has been provided in this transformer which gives a very sharp, high-frequency cut-off for the entire audio system. This greatly reduces the reproduction of any high-frequency interchannel interference or other disturbance of a high-frequency character which is outside of the useful musical range.

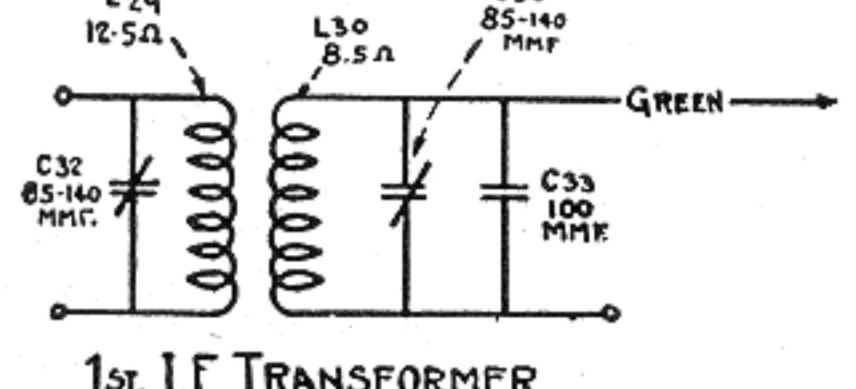
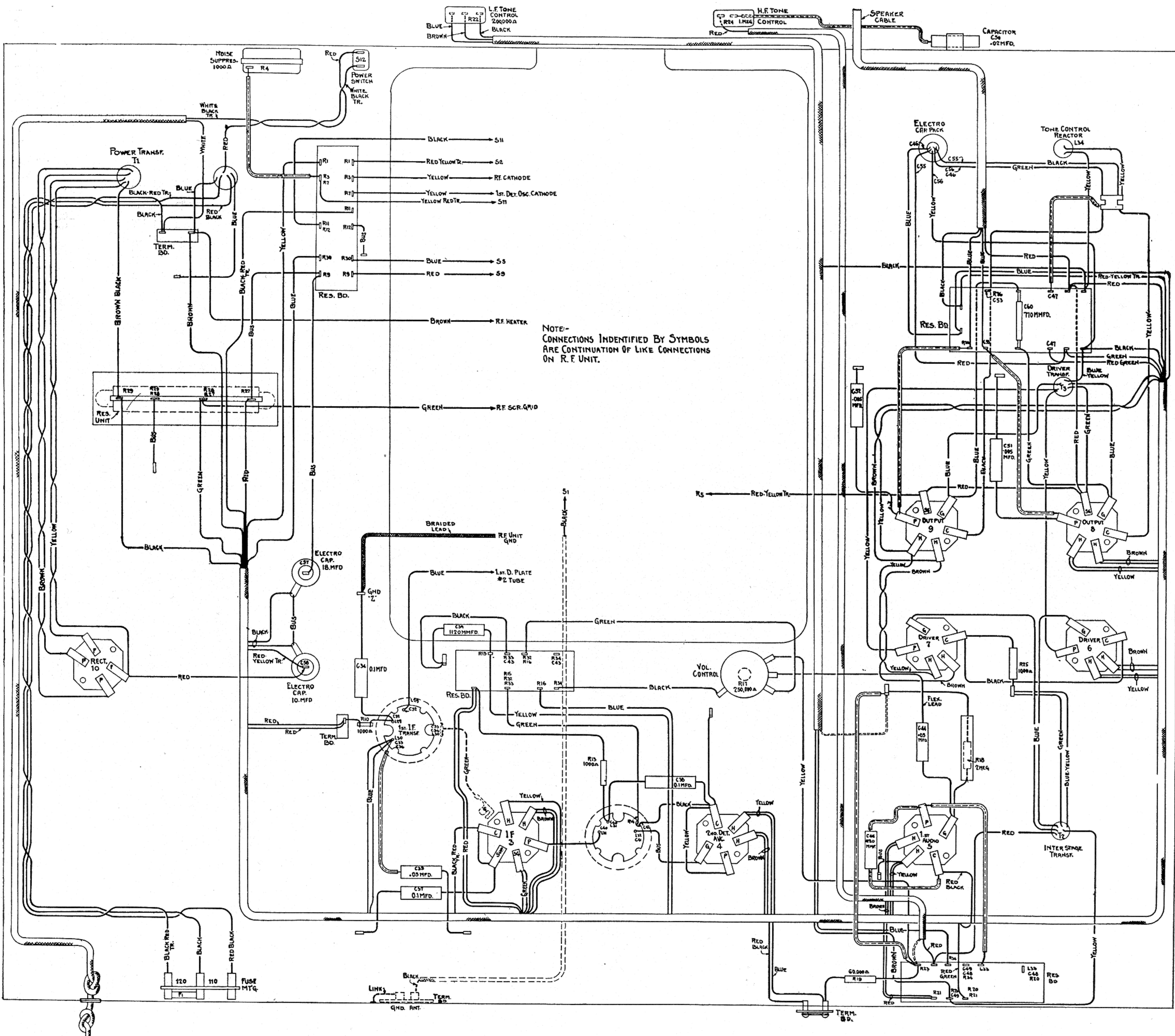
The loudspeaker used is of the ten-inch type. It is fully capable of handling the high-power, high-quality output of the receiver and converting it into faithful sound reproduction.

Figure 3 shows the loudspeaker wiring, Figures 4 and 6 the chassis wiring and Figures 8 and 10 the R. F. unit wiring.

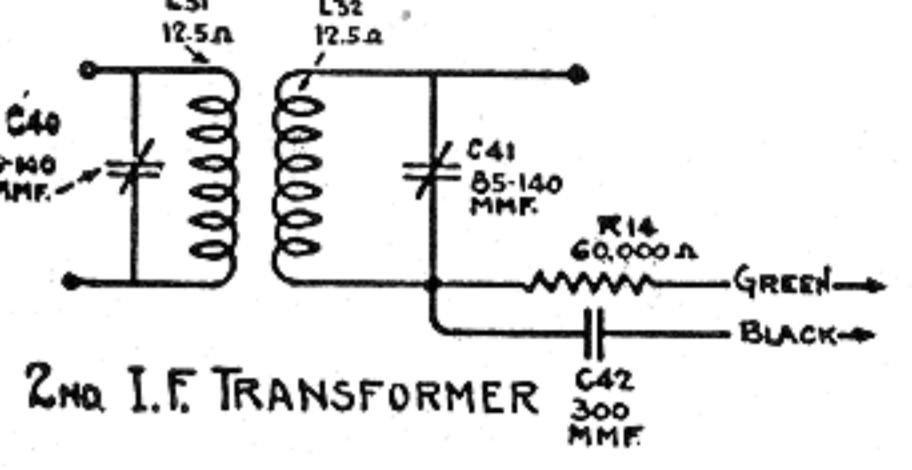
VARIATIONS IN MODELS

The preceding description of the electrical circuit applies to numerous models of this receiver. However, there are other models in which a change from the foregoing has been made. This change consists of using the section of the band selector switch that formerly changed the sensitivity control, for changing the fidelity in various bands, the sensitivity remaining the same in all bands. This permits the receiver to maintain the utmost fidelity in bands X and A while reducing the low frequency output in bands B, C and D. Such a change results in improved performance.

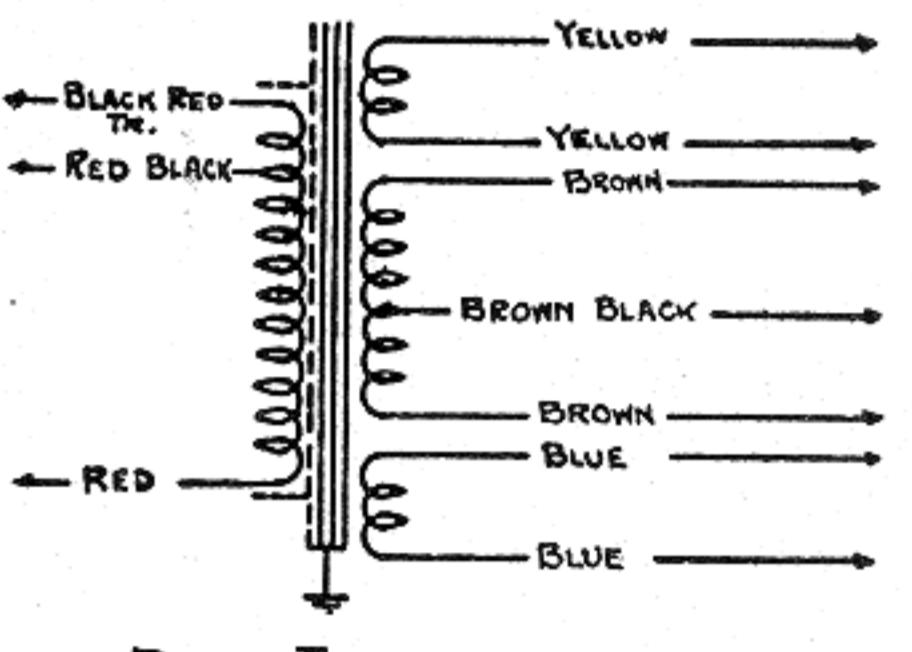
The sensitivity control in these models operates as formerly in bands X and A. That is, the sensitivity control adjusts the residual bias for the R. F. and first detector stages.



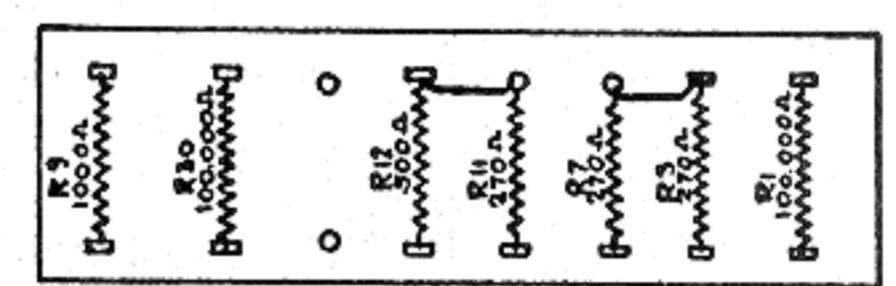
1st. I.F TRANSFORMER



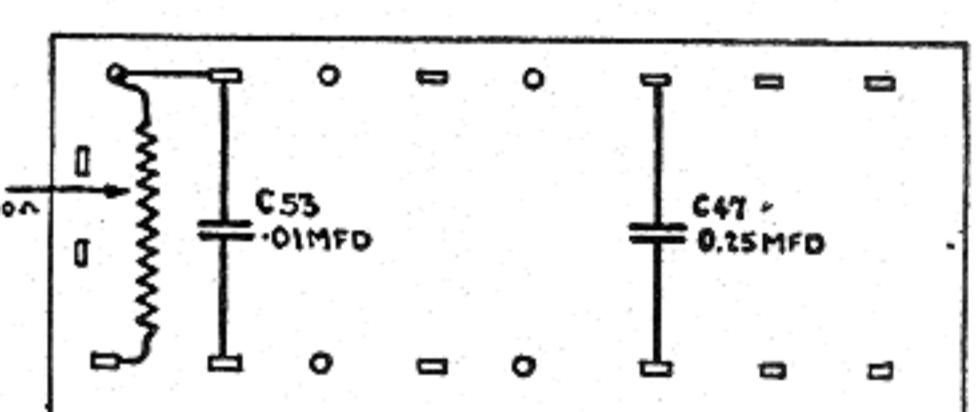
6NO. 1.F. TRANSFORMER



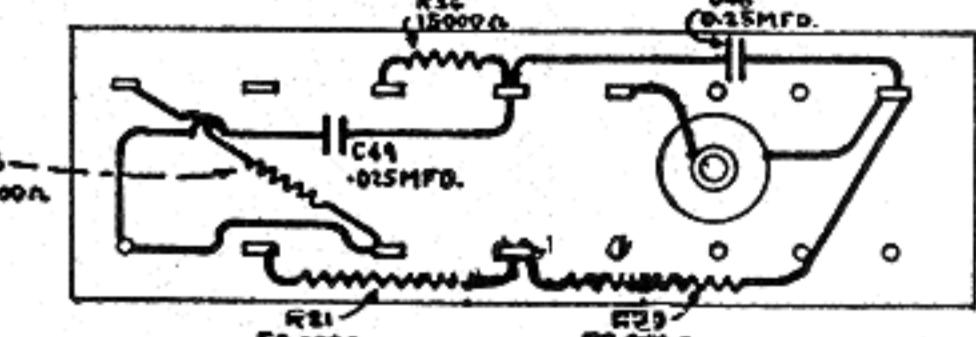
POWER TRANSFORMER



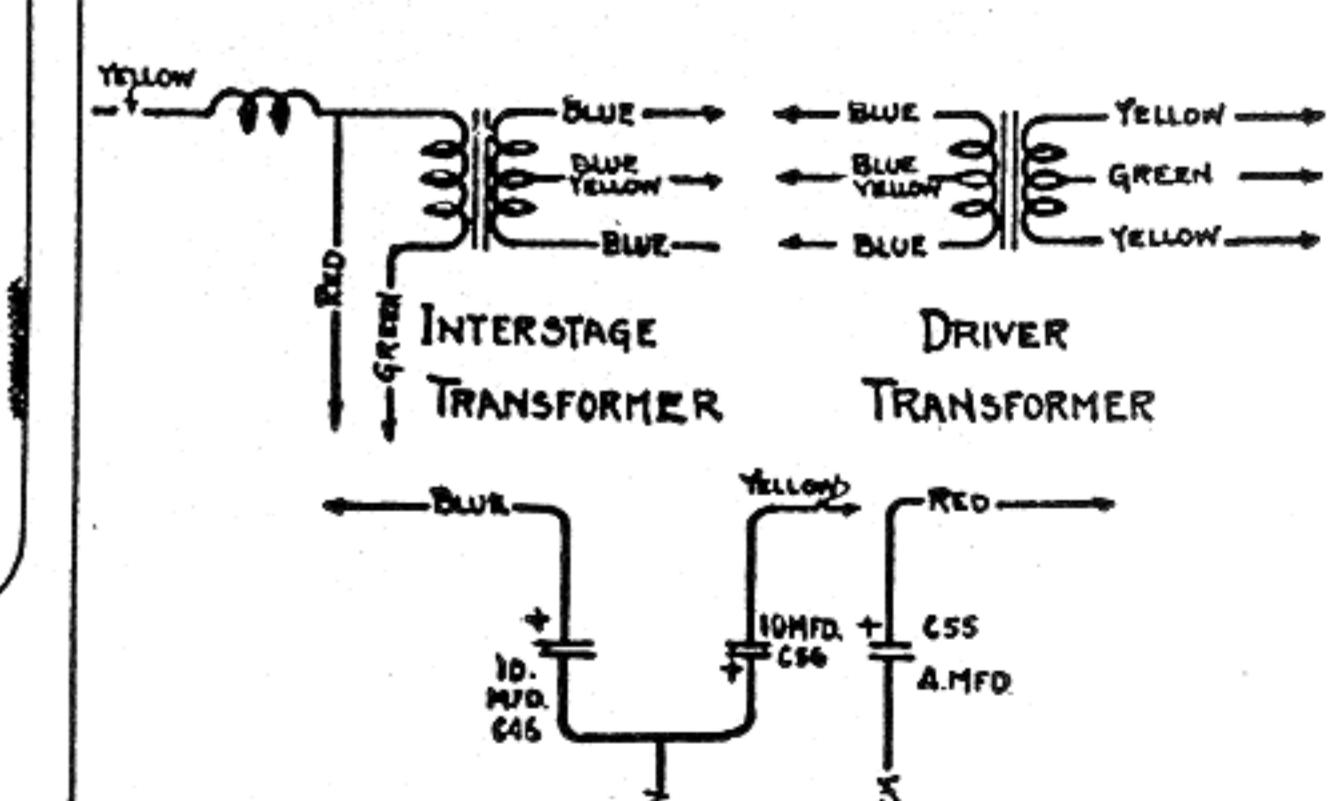
RESISTOR BOARD CONNECTIONS



RESISTOR BOARD CONNECTIONS



RESISTOR BOARD CONNECTIONS



ELECTROLYTIC CAPACITOR PACK

Figure 4—Chassis Wiring Diagram—Models with sensitivity control change for band position

SERVICE DATA

(1) LINE-UP PROCEDURE

The line-up procedure of this receiver is somewhat involved and it is important that these instructions be carefully followed when making adjustments. Properly aligned, this receiver has outstanding performance; improperly aligned, it may be impossible to receive signals on all bands.

Equipment

To align this receiver, proper test equipment must be used. This consists of a modulated R. F. oscillator having proper frequency range, an output indicator, an alignment tool and a tuning wand. These parts, have been developed by the manufacturer of this receiver for use by service men to duplicate the original factory adjustments.

Checking with Tuning Wand

Before making any R. F., oscillator or first detector adjustments, the accuracy of the present adjustments may be checked by means of the tuning wand (Stock No. 6679). The tuning wand consists of a bakelite rod having a brass cylinder at one end and a special finely divided iron insert at the other end. Inserting the cylinder into the center of a coil lowers its inductance, while inserting the iron end increases its inductance. From this, it is seen that unless the trimmer adjustment for a particular coil is perfect at alignment frequencies, inserting one end of the wand may increase the output of a particular signal. A perfect adjustment is evidenced by a lowering of output when either end of the wand is inserted into a coil.

The shields over the R. F. coil assembly have a hole at their top for entrance of the tuning wand. The location of the various coils inside of the shield is shown in Figure 5. An example of the proper manner of using the tuning wand would be to assume the external oscillator were set at 1720 KC and the signal tuned in. The output indicator should be connected across the voice coil of the loudspeaker. Then insert the tuning wand, first one end and then the other end, into the top of the three transformers at the left of the R. F. assembly, facing the front of the chassis. A perfect adjustment of the trimmer would be evidenced by a reduction in output when each end of the wand is inserted in each of the three transformers. If one end—for example, the iron end—when inserted in one coil caused an increase in output, then that circuit is low. An increase in the trimmer capacitance would be the proper remedy.

(2) I. F. TUNING CAPACITOR ADJUSTMENTS

This receiver has one I. F. stage, and two transformers having four adjustable capacitors which may require adjustment. The transformers are all peaked at 460 KC.

A detailed procedure for making this adjustment follows:

- (a) Connect the output of an external oscillator tuned to 460 KC between the first detector grid and ground. Connect the output indicator across the voice coil of the loudspeaker.
- (b) Place the oscillator in operation at 460 KC. Place the receiver in operation and adjust the station selector until a point is reached (Band A) where no signals are heard and turn the volume control to its maximum position. Reduce the oscillator input until a slight indication is obtained in the output indicator.

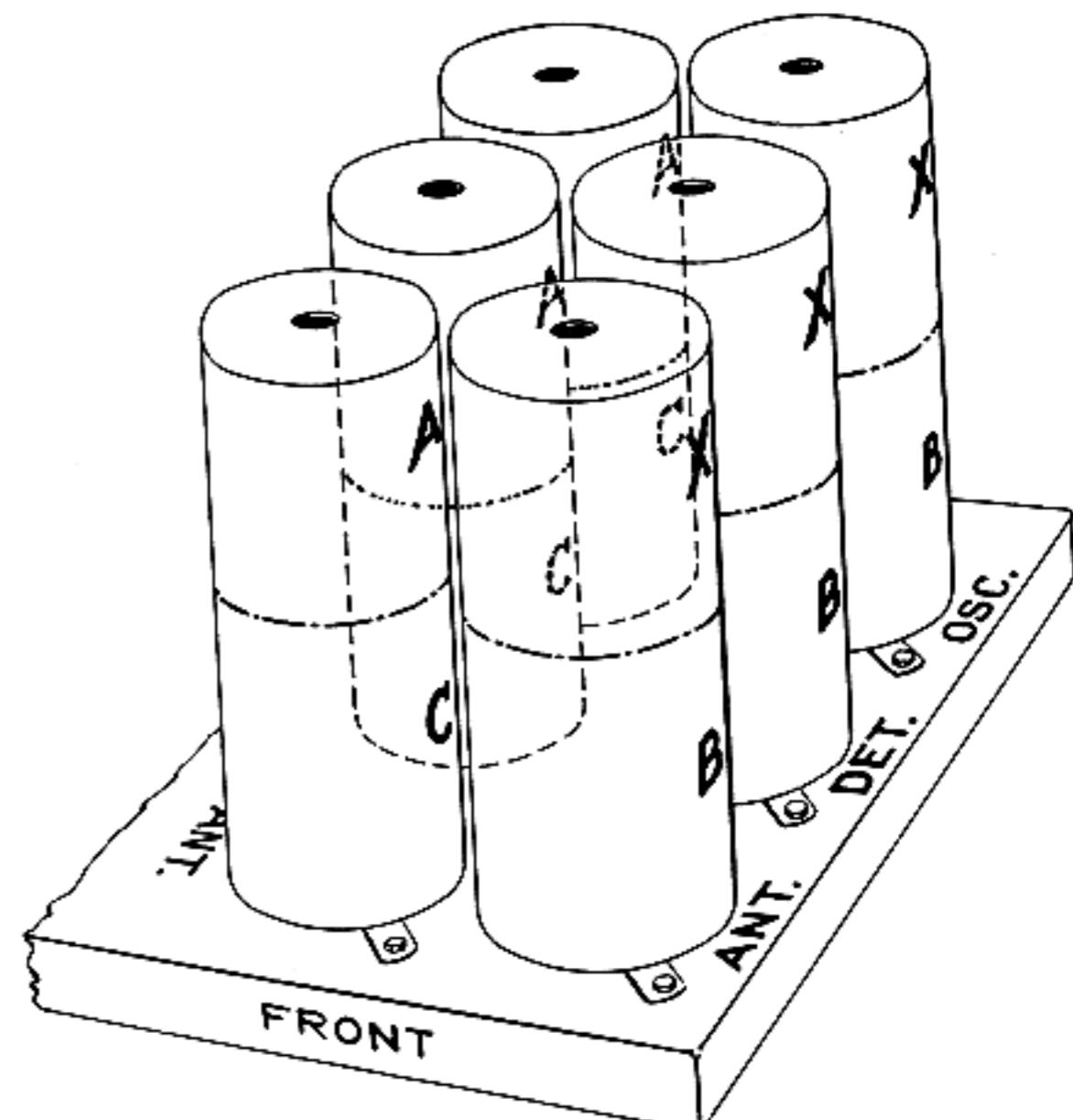


Figure 5—Location of Coils in Shields

- (c) Refer to Figure 7. Adjust each trimmer of the I. F. transformers until a maximum output is obtained. Go over the adjustments a second time.

This completes the I. F. adjustments. However, it is good practice to follow the I. F. adjustments with the R. F. and oscillator adjustments due to interlocking which always occurs.

(3) R. F. OSCILLATOR AND FIRST DETECTOR ADJUSTMENTS

Four R. F., oscillator and first detector adjustments are required in bands "A" and "X." Three are required in bands "B" and "C." None are required in band "D."

To properly align the various bands, each band must be aligned individually. The preliminary set-up

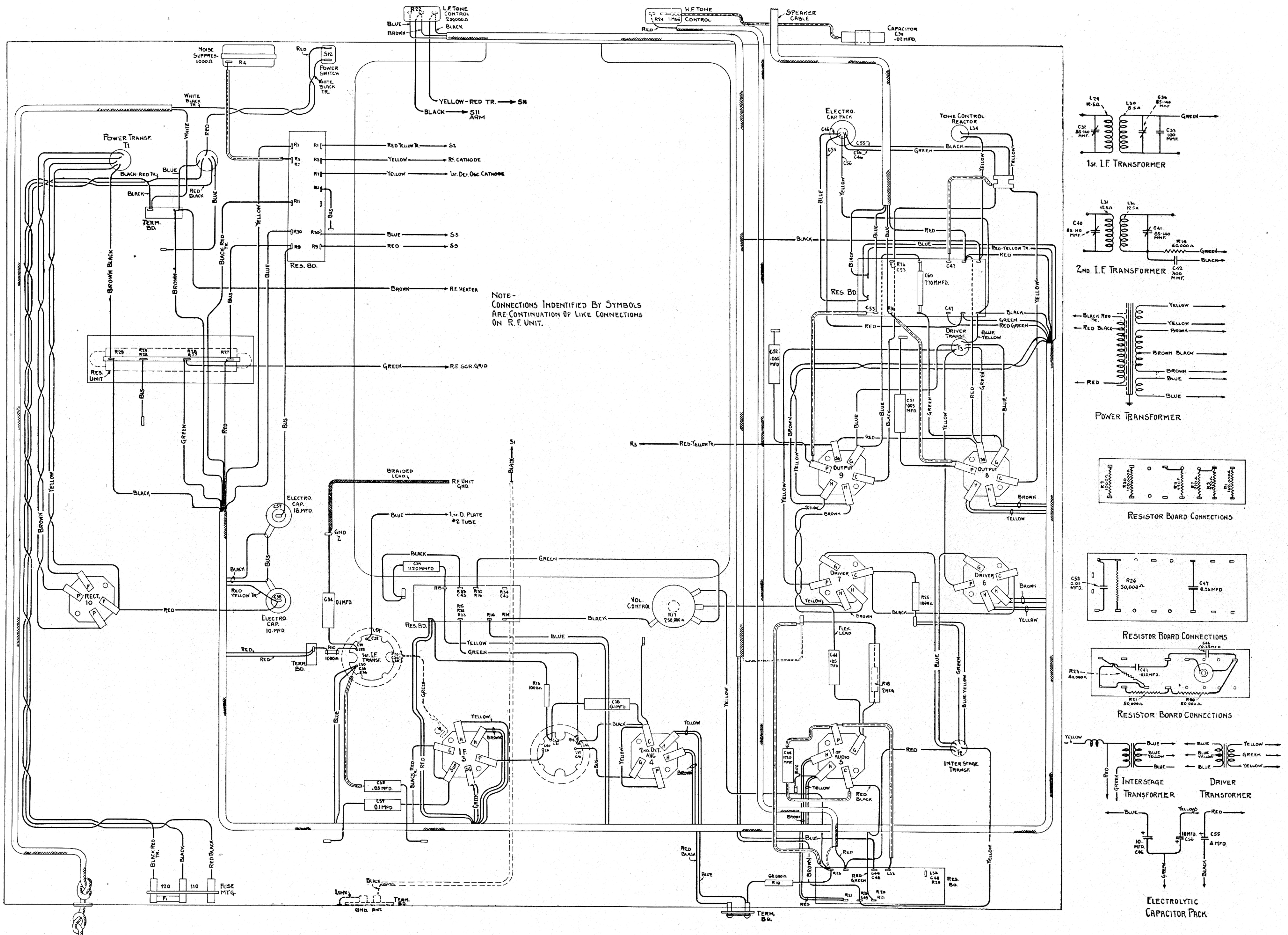


Figure 6—Chassis Wiring Diagram—Models with fidelity change for band position

requires the external oscillator to be connected between the antenna and ground terminals of the receiver and the output indicator must be connected across the voice coil of the loudspeakers. The volume control must be at its maximum position and the input from the oscillator must be at the minimum value possible to get an output indication under these conditions. In the high-frequency bands, it may be necessary to disconnect the oscillator from the receiver and place it at a distance in order to get a sufficiently low input to the receiver.

The dial pointer must be properly set before starting any actual adjustments. This is done by turning the variable capacitor until it is at its maximum capacity position. One end of the pointer should point exactly at the horizontal line at the lowest frequency end of band "A," while the other end should point to within $1/64$ inch of the horizontal line at the highest frequency end of band "A."

Figure 7 shows the location of the trimmers for each band. Care must be exercised to only adjust the trimmers in the band under test.

Band "X"

- (a) Tune the external oscillator to 410 KC, set the pointer at 410 KC and adjust the oscillator, detector and R. F. trimmers for maximum output.
- (b) Shift the external oscillator to 175 KC. Tune in the 175 KC signal irrespective of scale cali-

bration and adjust the series trimmer marked 175 KC on Figure 7, for maximum output, at the same time rocking the variable tuning capacitor. Then readjust at 410 KC as described in (a).

Band "A"

- (a) Tune the external oscillator to 1720 KC, set the pointer at 1720 KC and adjust the oscillator, detector and R. F. trimmers for maximum output.
- (b) Shift the external oscillator to 600 KC. Tune in the 600 KC signal irrespective of scale calibration and adjust the series trimmer, marked 600 KC on Figure 7, for maximum output, at the same time rocking the variable tuning capacitor. Then readjust at 1720 KC as described in (a).

Band "B"

- (a) Tune the external oscillator to 5160 KC, and set the pointer at 5160 KC. Adjust the oscillator trimmer for maximum output. The trimmer should be set at the first peak obtained when increasing the trimmer capacitor from minimum to maximum.
- (b) Check for the image signal, which should be received at approximately 4240 on the dial. It will be necessary to increase the external oscillator output for this check.

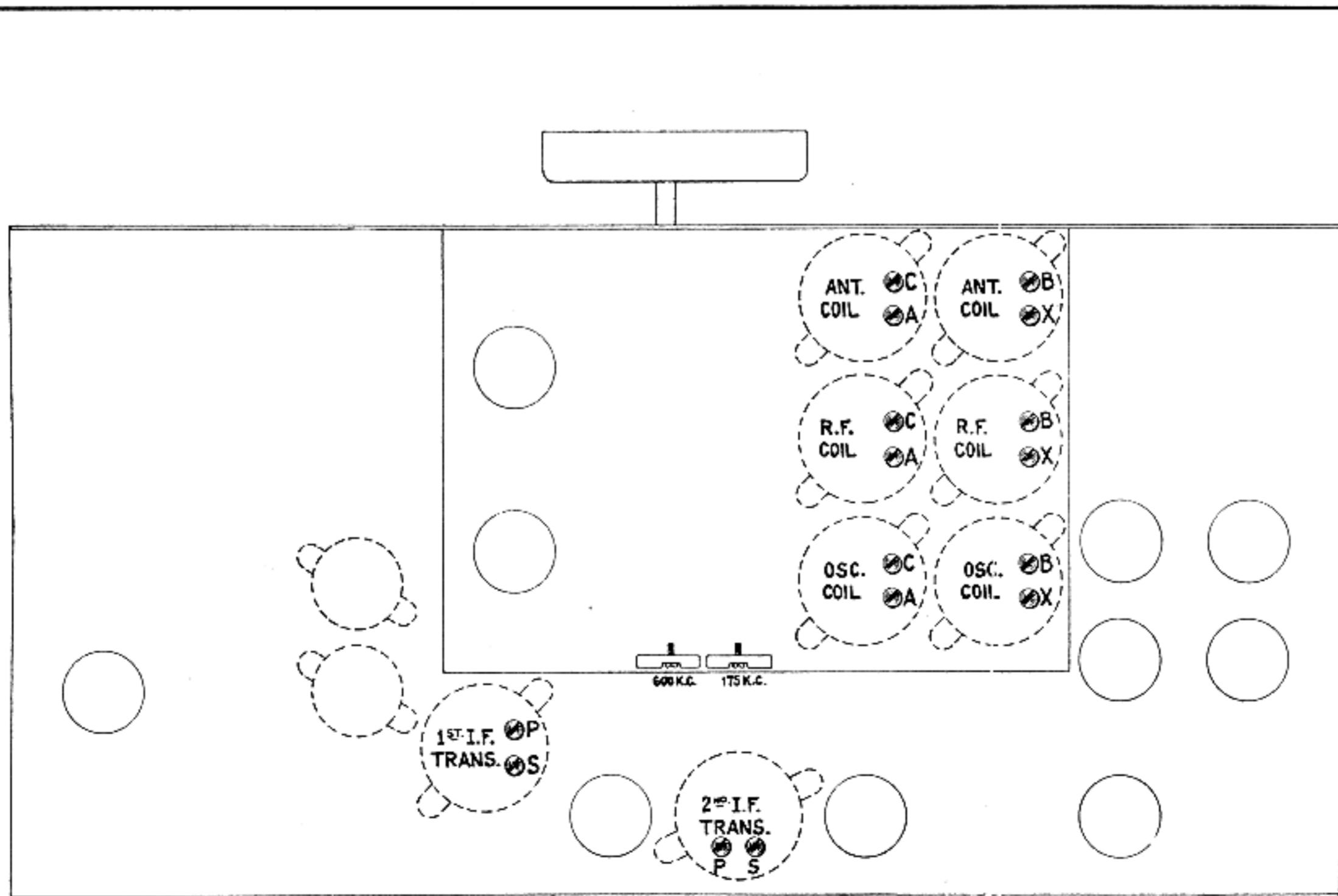


Figure 7—Location of Trimmer Capacitors