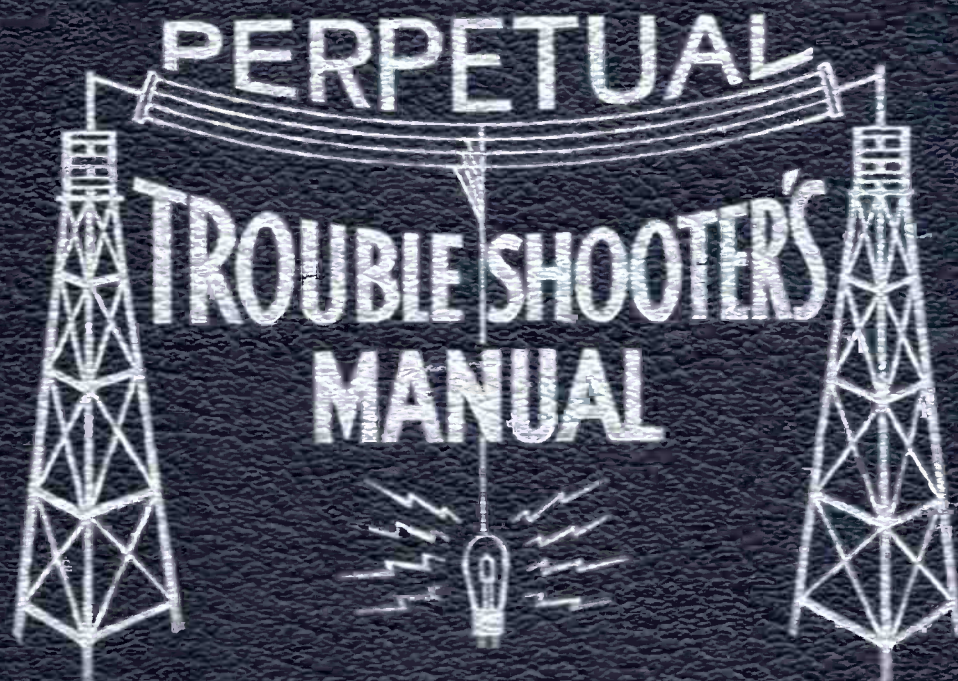


VOLUME VI



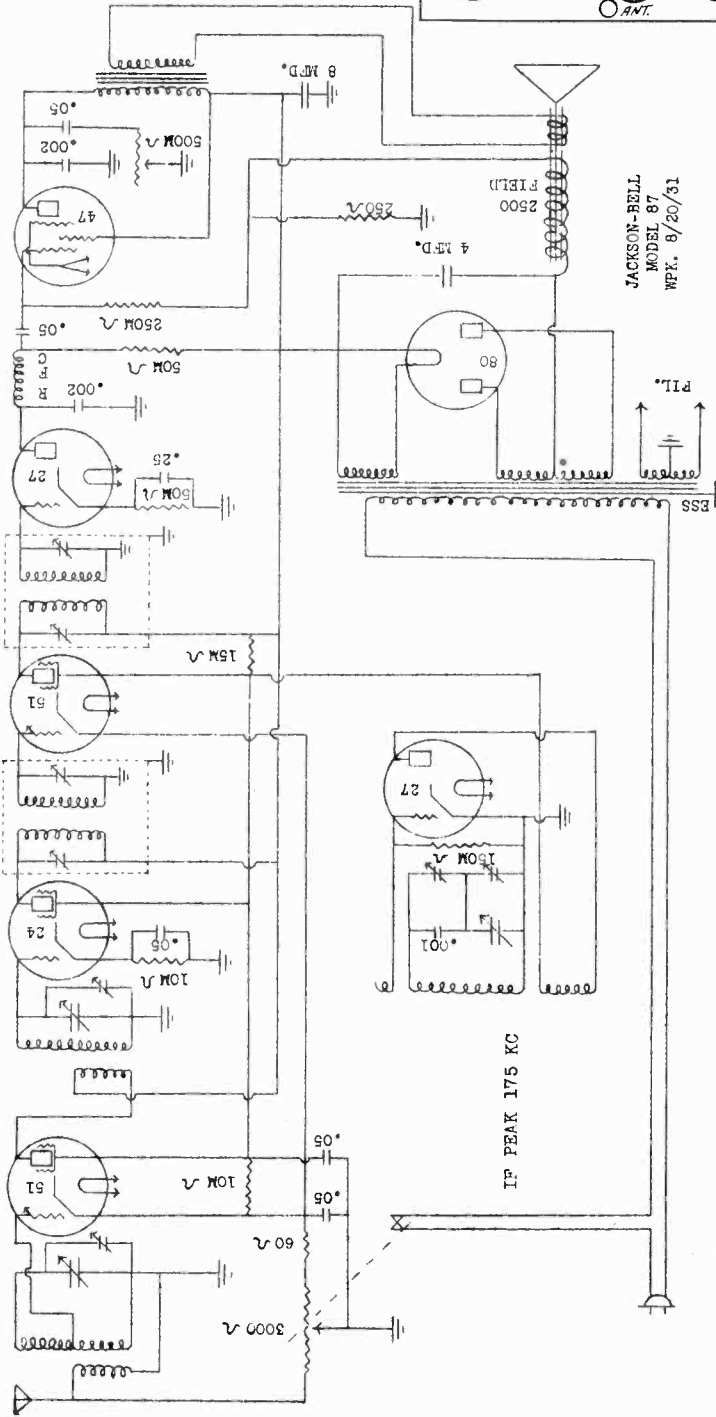
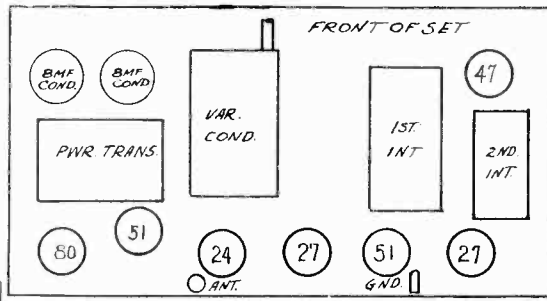
JOHN F. RIDER

MODEL 87
Schematic, Socket
Voltage, Alignment

JACKSON-BELL CO., LTD.

RESISTOR CODE

60 OHM WIRE WOUND	
250 "	100 M.A.
10M "	BROWN, ORANGE, BLACK END
15M "	" GREEN "
50M "	GREEN, " BLACK "
150M "	BROWN, GREEN, YELLOW "
350M "	RED, " "



plished by bending the split sections of the condenser plates to give the maximum alignment indicated by the output meter. If condenser plates have to be bent apparently too much at the low end of the band, it is advisable to start at the beginning and compensate the difference by bonding the plates on the high frequency end. Or, also by shifting the dial and re-aligning so as to eliminate unnecessary bending of the plates to get the proper alignment. It is not advisable to bend the plates in, especially in the oscillator section, as this may cause a microphone howl in the receiver due to the vibration of these plates if too close together.

The first step in alignment of the receiver is to align the intermediate amplifier. This must be done with a test oscillator set at exactly 175 kilocycles, and an output indicating device. Remove the oscillator tube from the receiver and connect the test oscillator to the grid of the first detector tube. The trimming condensers for the intermediate circuit are adjusted by means of the screws accessible thru the holes in the sides of the intermediate transformer shield covers. The volume control should be in the maximum or full-on position. Rotate the adjusting screws until maximum response is shown in the output meter.

AVERAGE VOLTAGES & CURRENTS.

	FILE VOLTAGE	PLATE VOLTS	SCREEN VOLTS	GRID VOLTS	CATHODE VOLTS	MAXIMUM CURRENT
R.F. Tubes	2.25	195	95	0	1.5	3.25 MILLS
First Detector Tube	2.25	195	95	0	3	.5 "
First I.F. Tube	2.25	195	95	0	1.5	3.25 "
Second Detector Tube	2.25	145	--	0	12.5	.5 "
Oscillator Tube	2.25	65	--	0	--	3 "
Output Tube	2.25	185	11	11	--	24 "
Rectifier Tube	4.5	280	--	--	--	45 "

ALIGNMENT OF THE SIGNAL FREQUENCY CIRCUIT.

For this operation, a modulated test oscillator covering the broadcast band is required, or stations of known frequency may be used. In order to properly resonate the signal frequency circuit of this receiver, turn the dial to some known frequency on the high end of the band, adjust the oscillator trimming condenser of the tuning condenser, until the greatest response is shown in the output meter. Then adjust the first detector section and next the first R.F. circuit section of the tuning condenser. Now move up to the next known frequency, preferably located at the next split section of the condenser. The alignment from here on is accom-

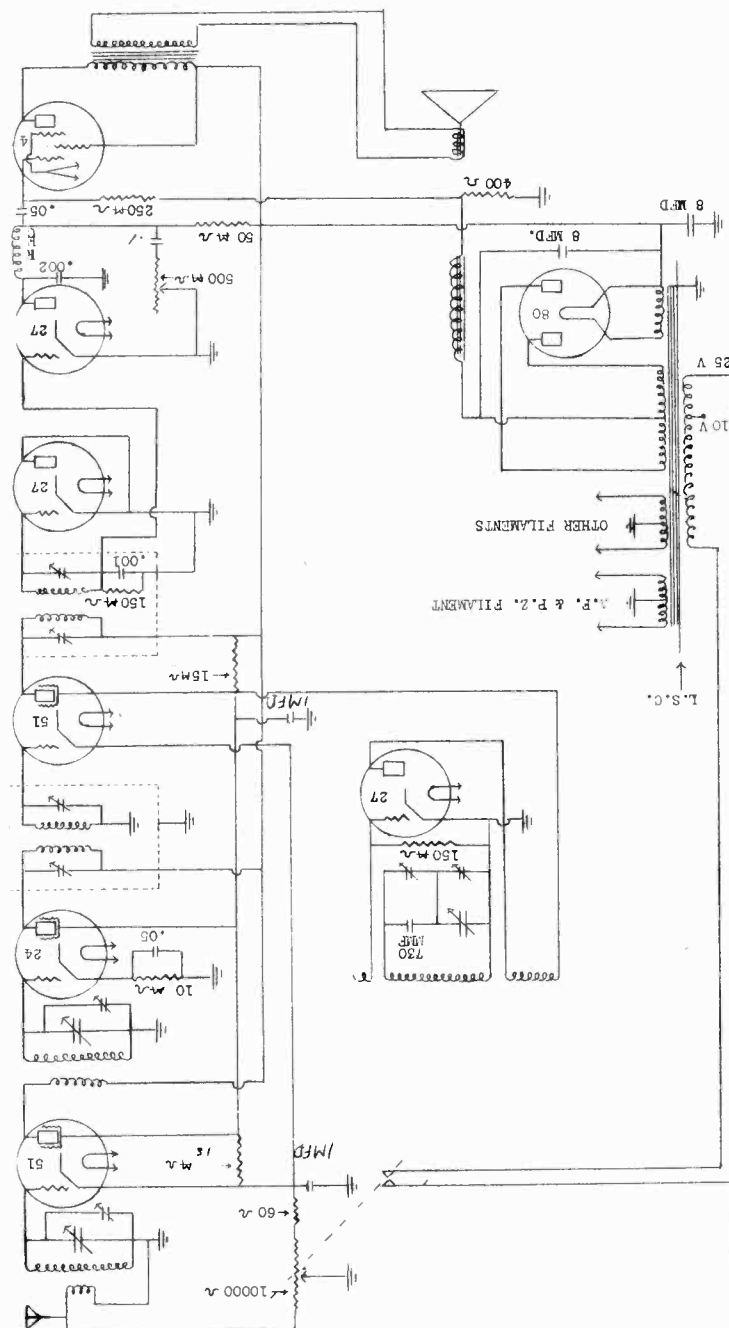
JACKSON-BELL CO., LTD.

MODEL 88
Schematic, Voltage Alignment

JACKSON-BELL SUPERHETERODYNE
MODEL 88 IMPROVED
V.P.R. 6/9/31

CHECK VOLTAGES WITH VOLUME CONTROL
AT MAXIMUM

R-f. Plate	200 v.
R-f. Screen	75 v.
R-f. Cathode	1.5 v.
R-f. Filament	2 v.
I-f. Plate	200 v.
I-f. Screen	75 v.
I-f. Cathode	1.5 v.
I-f. Filament	2 v.
Detector Plate	0 v.
Detector Grid	.5 v.
Detector Cathode to Gnd.	0 v.
Detector Filament	2.25v.
Trans. Plate	200 v.
Trans. Cathode	75 v.
Trans. Filament	5.25 v.
Osc. Plate	2 v.
Osc. Grid	75 v.
Osc. Cathode to Gnd.	.25 v.
1st A-f. Plate	40 v.
1st A-f. Grid	.5 v.
1st A-f. Cathode to Gnd.	0 v.
P.Z. or 47 Space Chg. Grid	200 v.
P.Z. or 47 Plate	195 v.
P.Z. or 47 Filament	16 v.
80 Filament	2.25 v.
80 Plate Drain per plate	.5 v.
	25 m.a.



RADIO FREQUENCY CIRCUIT ADJUSTMENT.

The first operation in aligning the radio frequency circuit should be the tuning of the intermediate frequency transformers. First, remove the oscillator tube and connect a modulated oscillator tuned exactly to 175 kilocycles between the grid of the first detector and the chassis. Remove the first audio tube and insert an adapter in this socket with leads long enough so that the two may be placed in a position to make accessible the two holes in the I.F. transformer shield so that the adjusting screws may be turned. This adapter need contain simply a five prong socket at one end, and a five prong plug at the other end with about six or eight inches of flexible wire connecting the two. The top condenser of the second I.F. transformer, which is the one behind the '27 first audio tube, will be broad and unvertical in its adjustment. The bottom condenser which is the primary, should be sharp. Both coils will peak, but a little juggling may be necessary as the coupling is so close that one condenser will tend to tune both coils, so it may be necessary to back up on one to make the other balance and then rebalance the other.

Repeat this operation with the other transformer located behind the Pentode tube and adjust all screws for maximum reading on an output meter, which should be connected when these adjustments are being made.

When the I.F. circuit has been accurately adjusted to 175 kilocycles, the oscillator tube should be replaced and a test modulated oscillator connected to the antenna terminal of the receiver. Factory alignment of these receivers is started at 1720 kilocycles, in order to be able to cover the bands used by police broadcast stations. Should the test oscillator reach this frequency, then the dial should be adjusted to about 3 when alignment is made at this point.

If unable to test at 1720 kilocycles, the first alignment operation may be made at 1500 kilocycles, with the dial set so that the 1500 kilocycle mark is directly above the center of the condenser shaft. With the dial set in the position corresponding to the highest frequency which is used in the preliminary alignment, rotate the compensator screw on the center section of the variable condenser until maximum response is noted in the output meter. This center section tunes the oscillator circuit. Without changing the adjustment of either the oscillator or the receiver dial, adjust the antenna compensator, (the one nearest the front of the chassis) for maximum response. This should then be followed by the first detector, and when resonance is approached with the first detector compensator, the main tuning dial of the receiver should be rocked back and forth slightly at the same time that the compensator is rotated slowly until the highest output indication is obtained.

Best results will be obtained when a dummy antenna is used between the oscillator and the receiver when the three gang condenser is being aligned. This can consist of a .00025 condenser, a 20 ohm resistor, and about 25 turns of small magnetic wire wound on a one inch form, carried in series between the antenna terminal of the receiver and the output terminal of the oscillator. The alignment operation may then be completed at the lower frequencies by the customary bending of the split rotor plates.

For aligning the oscillator circuit, at 550 kilocycles, the variable padding condenser located under the chassis and accessible thru a hole to the left of the center section of the tuning condenser should be used in preference to bending plates. This may be done immediately after the 1500 kilocycle alignment, and then the set should be re-checked at 1500 kilocycles, and alignment continued from that point back to 550.

MODEL 89-A
Schematic, Socket
Voltage, Alignment

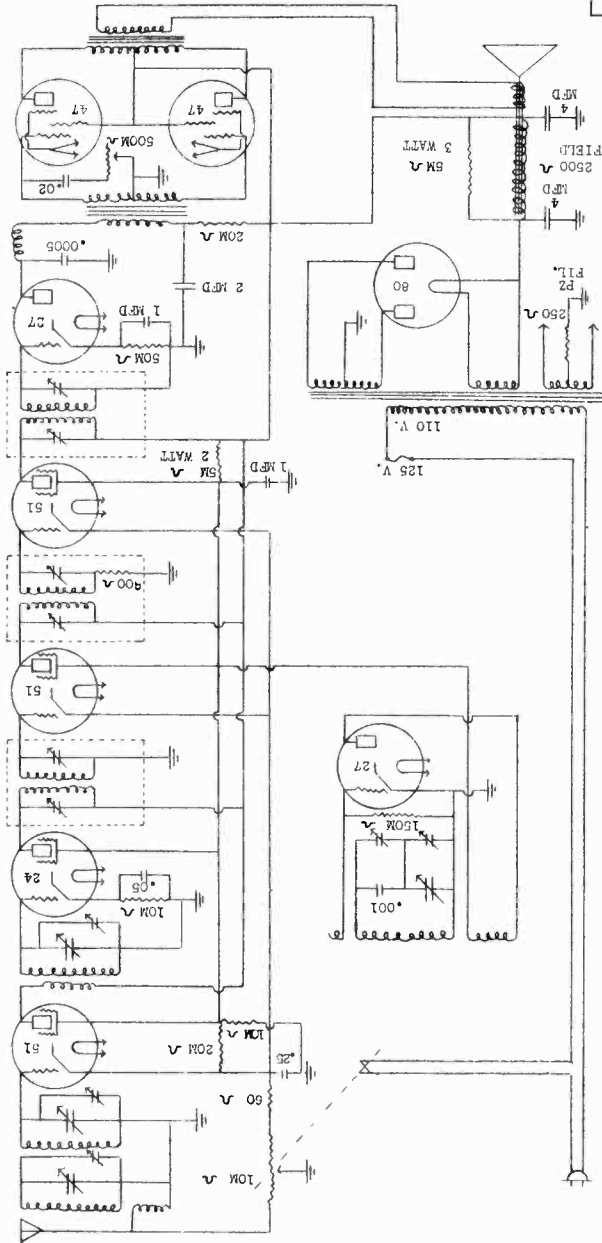
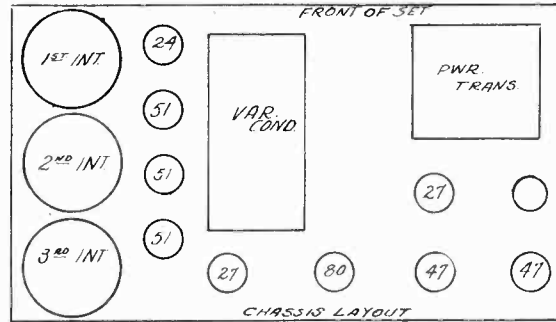
JACKSON-BELL CO., LTD.

JACKSON-BELL SUPER
MODEL 89A
W. P. K. 6-15-31

IF PEAK 175 KC

RESISTOR CODE

- 60 OHM WIRE WOUND
- 250 " GREEN, BLACK, RED DOT
- 5000 " BROWN, " ORANGE DOT
- 100000 " RED, " "
- 500000 " GREEN, " "
- 1500000 " BROWN, GREEN, YELLOW "



CIRCUIT ALIGNMENT

The first step in alignment of the receiver is to align the intermediate amplifier. This must be done with a modulated test oscillator set at exactly 175 Kilocycles, and an output indicating device. Remove the oscillator tube from the receiver (see chassis drawing No. 1) and connect the test oscillator to the grid of the first detector tube. The six tuning condensers for the intermediate circuit are adjusted by means of the screws accessible thru the holes in the sides of the intermediate transformer shield covers. The valve control should be in the maximum or full-on position. Rotate the adjusting screws until maximum response is shown in the output meter.

Oscillation in the intermediate amplifier may be caused by:-

- 1) Open by-pass condenser.
- 2) Improper alignment.
- 3) Shorted suppressor resistor in the second intermediate transformer.
- 4) Defective tube.

ALIGNMENT OF THE SIGNAL FREQUENCY CIRCUIT

For this operation, a modulated test oscillator covering the broadest band is required. In order to properly resonate the signal frequency circuit of this receiver, the pro-selector and radio frequency amplifier circuits must be eliminated from the preliminary alignment operation, and a difference of 175 Kilocycles must be established between the first detector and oscillator tuning condensers.

- a) Short circuit that section of the main tuning condenser which is connected to the grid of the radio frequency amplifier tube. Couple the test oscillator to the first detector tube by placing the lead from the test oscillator near (but not touching) the grid terminal. Set the main tuning dial at 1500 kilocycles, and adjust the test oscillator to 1500 kilocycles.

- b) Rotate the adjusting screws of the oscillator and first detector sections of the tuning condenser until maximum response is obtained in the output meter.
- c) Remove the short from the radio frequency amplifier section of the tuning condenser and connect the test oscillator to the antenna terminal of the receiver. Now adjust the compensating condenser for the band selector and radio frequency section to give maximum response.

From this point on the alignment is the same as with a T.R.F. circuit, except the oscillator section. After bending the plates, where necessary, of the three signal frequency section of the tuning condenser for maximum response, bend the oscillator plate in and out while "rocking" the condenser shaft, and note for maximum response. It is recommended that a check of alignment be made at each split section of the rotor plates of the tuning condenser.

AVERAGE VOLTAGES & CURRENTS:

	FIL. VOLTS	PLATE VOLTS	SCREEN VOLTS	GRID VOLTS	CATHODE VOLTS	PLATE CURRENT
R.F. Amplifier Tube	2.5	200	100	0	2.0	3.5
First Detector Tube	2.5	200	100	0	4.0	4.5 MA
First I. F. Tube	2.5	200	100	0	2.0	3.5
Second I. F. Tube	2.5	200	100	0	2.0	3.5
Second Detector Tube	2.3	180	---	---	8	2 MA
Oscillator Tube	2.3	100	---	0	6 MA	---
Output Tube (1)	2.3	185	200	16	---	20 MA
Output Tube (2)	2.3	185	200	16	---	20 MA
Rectifier Tube	5.0	375	---	---	---	55 PER PLATE

MODEL 10C10

Condenser Data, Notes LAFAYETTE RADIO MFG. CO.
Parts (Early Model)

Bypass Condenser Block

The key number, capacity, and lead colors of the sections of the original bypass condenser block used in the early models are shown in the following list. The key numbers refer to Fig. 3.

Key No.	Capacity	Lead Color	Lead Color
C22	.5 mfd.	Yellow	Yellow
C16	.5 mfd.	Red	Common Black
C4	.5 mfd.	Blue	Common Black
C8	.5 mfd.	Brown	Common Black
C5	.1 mfd.	White, Green Tr.	Common Black
C2	.1 mfd.	White, Green Tr.	Common Black
C7	.1 mfd.	White, Red Tr.	Common Black
C6	.1 mfd.	Black, White Tr.	Black, White Tr.
C13	.1 mfd.	White	White

Referring to sections C6 and C13 in the above list, it will be noted that these have two leads each with the same color code. This was changed in a later model to one lead each, the other lead of each section being connected to the common black lead.

At a later date, two further changes in this condenser block were made. Section C6 which bypassed the grid return of the first I.F. tube to ground was discontinued and section C4 was changed to .25 mfd. These changes bring the block up to date.

The key numbers (C5, etc.) in the above description of the condenser block refer to the key numbers as shown in the schematic circuit diagram of the early chassis, Fig. 3. The key numbers of the condenser block as shown in the parts list in the foregoing service manual conform with the key numbers as shown in the schematic of the present chassis, Fig. 1. As explained at the beginning of this supplement, the two sets of key numbers do not coincide.

Resonance Meter

In the early model receivers, the resonance meter was in the plate lead of the R.F., first detector, and first I.F. tubes. In the present receivers the resonance meter is in the plate lead of the R.F. tube only. The meter is not the same in both cases.

Voltage Divider Resistor

In the early models a "Candohm" armored wire wound voltage divider resistor was used. This was replaced in the later models by a vitreous enamel voltage divider. It will be noted that there are ten lugs on the "Candohm" resistor while there are only six resistor sections, which would ordinarily call for seven lugs. The extra three lugs are blank lugs not connected with the resistance element and used for wiring purposes only. Starting with the high potential end of the resistor, the blank lugs are the second, fourth and ninth. In ordering a new voltage divider resistor for the ten tube chassis be sure to order the correct type.

Speaker

The early models in this series of receivers used a single speaker and not the dual speakers as mentioned in the foregoing manual. The single speaker field resistance is 450 ohms.

Supplementary Parts List for Early Models

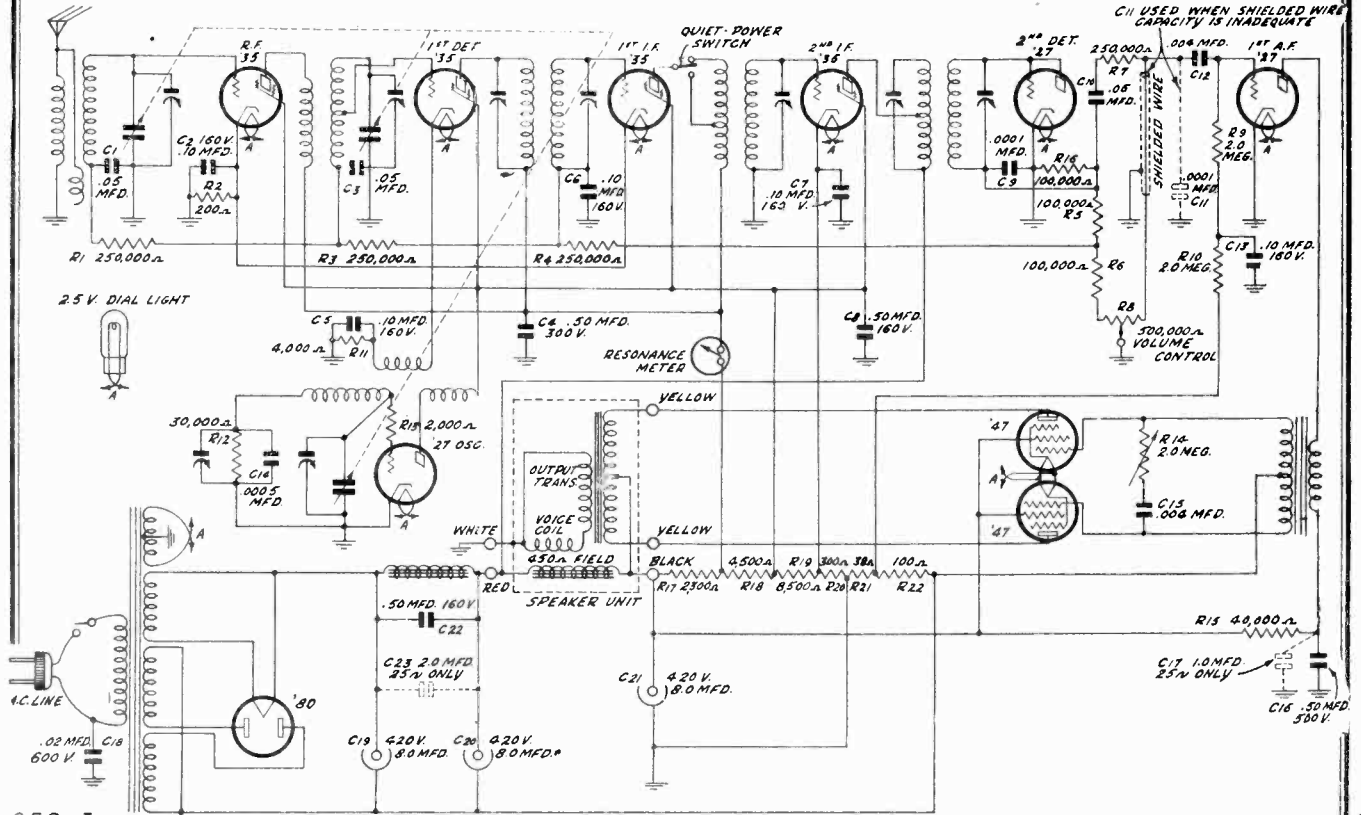
The parts in this list replace the corresponding parts as shown in the parts list in the foregoing service manual.

Stock No.	Name
P-1363	Interstage Transformer Assembly
P-90954-B	250,000 ohm Resistor (R3, R4)
P-90956-A	30,000 ohm Resistor (R12)
P-90977-B	Tone Control and On-Off Switch (R14)
P-80867	.0005 mfd. Condenser (C14)
P-80861-B	Bypass Condenser Block
P-1367	Shielded 1st I.F. Transformer Assembly
P-1364	Shielded 2nd I.F. Transformer Assembly
P-1365	Shielded 3rd I.F. Transformer Assembly
P-1349	Resonance Meter
P-1366	Shielded Oscillator Unit Assembly
P-90974-C	"Candohm" Voltage Divider Resistor
*P-1351	Drive Bracket and Bearing Assembly
*P-1197	Friction Drive Shaft Assembly
*P-1356	Dial Strip and Disc Assembly
*P-1177	Dial Light Bracket Assembly, less socket and bulb.

*Asterisk refers to friction drive parts used on early models.

LAFAYETTE RADIO MFG. CO.

MODEL 10C10 (Early)
Schematic, Data



259-7

Fig. 3. Schematic Circuit Diagram of Early Model

Data on Earlier Models in This Series

The foregoing service manual describes the chassis of this series as it is manufactured at the present time. However, when the model was first brought out it was slightly different mechanically and electrically than the present model.

In this supplement, the changes of importance from a servicing standpoint from the first models to the present are discussed. This section should be gone over carefully by the service technician, as it is of importance both in servicing the set and when ordering replacement parts. The changes described were not all made at the same time. Investigation of the chassis will show which of the changes are incorporated. One way of eliminating error in replacing parts is to return the old part when ordering a new one.

Key Numbers

In Fig. 3 is shown the schematic circuit diagram of the original model. In the changes as described below, reference will be made both to this diagram and to the schematic circuit diagram of the present model Fig. 1. Note that the key numbers of the resistors and condensers in Figs. 1 and 3 do not coincide.

Interstage Transformer

The interstage R.F. transformer of the original sets contained a 250,000 ohm isolating resistor shown in Fig. 3 as R3. This is replaced by the present type of interstage R.F. transformer with no resistor.

Isolating Resistors

Isolating resistor R3, as shown in Fig. 3 is omitted and isolating resistor R4, 250,000 ohms, is changed in the later models to 500,000 ohms.

Tone Control and On-Off Switch

The early models in this series used a combination tone control and On-Off switch. In the later models these units are separate.

I.F. Transformer Assemblies

The old I.F. assemblies were in square cans and the condenser adjusting screws were reached from the top of the chassis. The new assemblies as used on the present models are in round cans and the adjusting screws are reached from the bottom of the chassis through holes in the sub-panel.

Oscillator Assembly

The oscillator assembly as used in the early models had the 600 K.C. tracking condenser in the same can as the balance of the assembly. In the new assembly as used in the present models, the 600 K.C. trimmer is mounted separately under the sub-panel. The adjusting screw for this condenser is reached from the top of the chassis. It is just in back of and to the side of the oscillator coil can.

Condenser C14, Fig. 3, .0005 mfd., is not used in the later models in which the afore-mentioned change in the oscillator assembly is made.

Resistor R12, 30,000 ohms, is changed to 40,000 ohms in the models in which the afore-mentioned oscillator assembly change is made.

MODEL 10C10

Alignment, Parts
Data

LAFAYETTE RADIO MFG. CO.

Condenser Alignment

Misalignment or mistracking of condensers generally manifests itself in broad tuning and lack of volume at portions or all of the broadcast band. The receivers are all properly aligned at the factory with precision instruments and realignment should not be attempted unless all other possible causes of the faulty operation have first been investigated and unless the service technician has the proper equipment. A signal generator that will provide an accurately calibrated signal of 175 K.C. and accurately calibrated signals over the broadcast band, and an output indicating meter are necessary. The procedure is as follows:

Set the signal generator for 175 K.C. Disconnect the grid cap from the first detector tube. Connect the antenna lead from the signal generator to the grid terminal of this tube. The ground lead goes to the ground connection. Then adjust the five intermediate frequency condensers for maximum output. The adjusting screws for these condensers are reached from the bottom of the chassis.

Next, set the signal generator for a signal of 1400 K.C. The input in this instance is made to the antenna lead of the receiver. Replace the grid cap on the first detector tube. Set the dial pointer on the 1400 K.C. mark on the dial scale and adjust the three trimmer condensers on the gang tuning condenser for maximum output, adjusting the oscillator trimmer first.

Then, set the signal generator for a signal of 600 K.C. The oscillator 600 K. C. trimmer condenser is underneath the chassis but the adjusting screw is reached from the top of the chassis and is adjacent to the oscillator coil can. Adjust this oscillator 600 K.C. trimmer condenser for maximum output, turning the rotor slowly back and forth over the 600 K.C. setting until highest output is obtained. A recheck may then be made of the alignment at 1400 K.C.

Replacing Rubber Drive

You will note that the Vernier tuning drive on this chassis uses a rubber pinion. Under normal operating conditions this rubber will last for a number of years. Should it become worn it can be readily replaced by loosening the set screw of the brass bushing located next to the rubber pinion and pulling out the station selector shaft. Place a new bushing in position, slip the station selector shaft in place and tighten the set screw.

Replacing R. F. Transformers and Oscillator Unit

The first and second R.F. transformers and oscillator assembly are matched. If one of these units is replaced, it is essential that the new one be of the correct value. At the bottom of the unit assembly a spot of paint will be seen. Be sure when ordering one of these assemblies to indicate in your order the color of the spot of paint.

Dual Speaker Connections

Two speakers are used in this model, one designed to give best response on the higher audio frequencies and the other designed to give best response on the lower frequencies. The fields of the two speakers are connected in series, and the voice coils in parallel. The resistance of the two fields in series is 450 ohms.

Part No.	Name
P-1464	'35 Tube Socket
P-1468	'47 Tube Socket
P-1474	'80 Tube Socket
P-1462	'27 Tube Socket
P-1422	Antenna Transformer Assembly (No Shield)
P-1423-A	Interstage Transformer Assembly (No Shield)
P-1400-A	Oscillator Unit Assembly (No Shield)
P-1433	Shielded 1st I. F. Transformer Assembly
P-1425	Shielded 2nd I. F. Transformer Assembly
P-1426	Shielded 3rd I. F. Transformer Assembly
P-50533	Pushpull Audio Input Transformer

Part No.	Name
P-20408	Tube Shield Base
P-1193	Laminated Phono Jack
P-50532	Power Transformer, 60 Cycle
P-50536	Power Transformer, 25 Cycle
P-5053	Power Transformer, 220 V., 40-60 Cycle
P-20461	Condenser Shield
P-1326	Aluminum Antenna Coil Shield with Bracket, (Rectangular)
P-1327	Aluminum Interstage Coil Shield with bracket (Rectangular)
P-70702	Attachment Cord and Plug
P-1355	Speaker Cable Terminal Strip
P-70716	Speaker Cable
P-1385-B	Oscillator 600 K. C. Trimmer Condenser
P-20406	Tube Shield
P-1273	Dial Light Bulb, 2.5 volts
P-1011	S. P. D. T. Switch (Quiet-Power or Phono)
P-1384	Resonance Meter
P-50534	Power Supply Choke
P-10180	Rubber Chassis Support (Large)
P-10181	Rubber Chassis Support (Small)
P-1146	Terminal Strip (Large)
P-1173	Terminal Strip (Small)
P-20422	Chassis Mounting Stud
P-20286	Resistor Spring Mtg. Bracket
P-1054	On-Off Toggle Switch
P-80889	3 Gang Condenser less drive for rubber pinion drive only
P-1383-B	Drive Bracket & Bearing Assembly
P-30365	Bushing for rubber pinion
P-10182	Rubber pinion
P-20473	Drive Shaft
P-1394	Dial Strip & Bracket Assembly
P-1382	Drive Disc Hub & Fulcrum Assembly
P-1393	Indicator Assembly
P-80866	3 Gang Condenser less drive for friction drive models
*P-1128	Drive Bracket & Bearing Assembly
*P-1197-B	Friction Drive Shaft Assembly
*P-1340	Dial Strip
*P-20283	Dial Drum

*Asterisk refers to parts used on drum dial models.

RESISTORS

Part No.	Key No.	Resistance	Type
P-90954-B	R1	250,000	Carbon
P-90935-A	R2	200	Carbon
P-90938	R3	500,000	Carbon
P-90912-A	R4	100,000	Carbon
P-90912-A	R5	100,000	Carbon
P-90954-B	R6	250,000	Carbon
P-90980	R7	0-500,000	Volume Control
P-90923-A	R8	2 meg.	Carbon
P-90923-A	R9	2 meg.	Carbon
P-90947	R10	4,000	Carbon
P-90916	R11	40,000	Carbon
P-90986-B	R12	0-2 meg.	Tone Control
P-90945	R13	40,000	Carbon
P-90912-A	R14	100,000	Carbon
P-91000	R15	2,300	Vitreous Enamel Resistor
	R16	4,500	
	R17	8,500	
	R18	300	
	R19	38	
	R20	100	

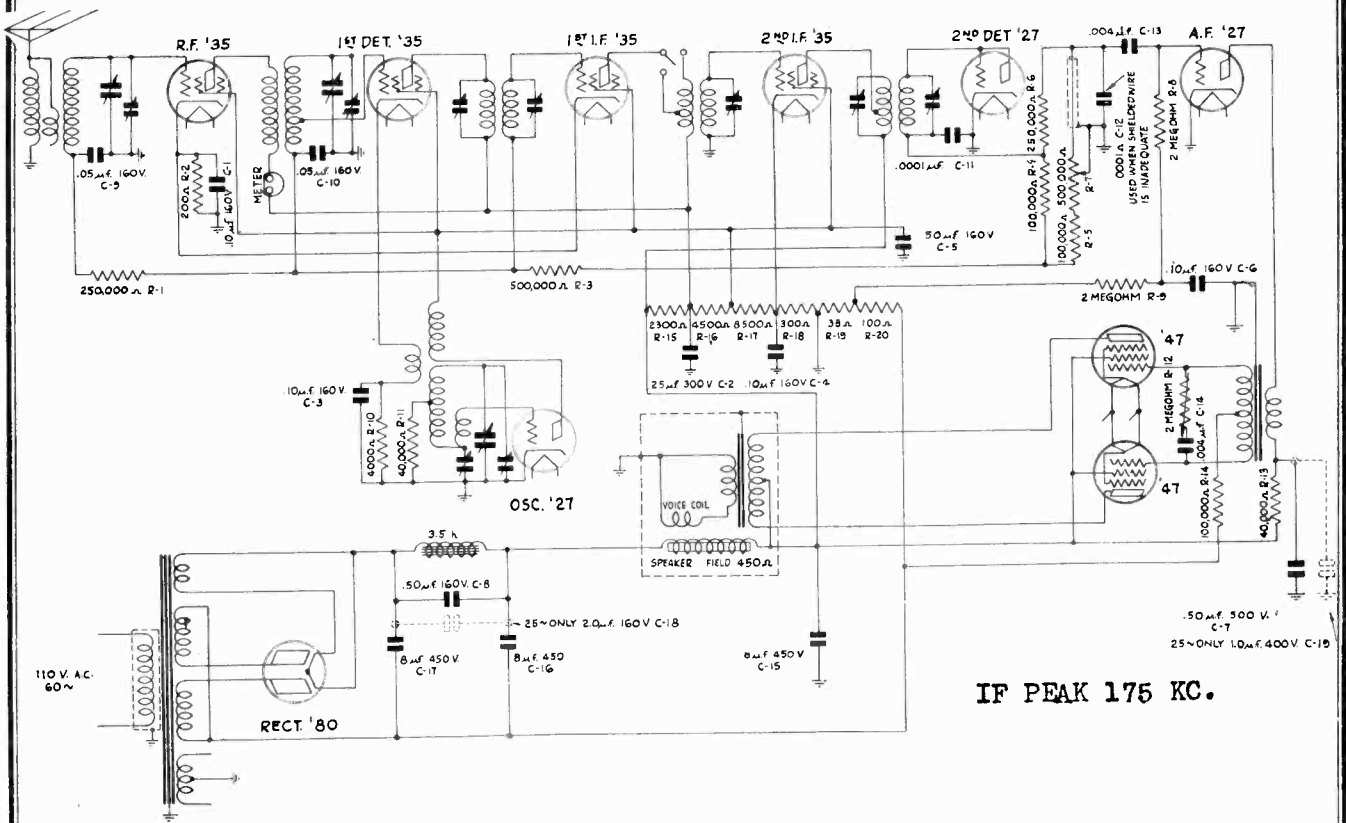
CONDENSERS

Part No.	Key No.	Capacity	Type	Voltage Rating	
P-80862	C9	.05	Tubular	160 V.	
P-80862	C10	.05	Tubular	160 V.	
P-80865	C11	.0001	Molded		
P-80865	C12	.0001	Molded		
P-80863	C13	.004	Tubular		
P-80863	C14	.004	Tubular		
P-80901	C15	8.0	Electrolytic	450 V.	
P-80900	C16	8.0	Electrolytic	450 V.	
P-80900	C17	8.0	Electrolytic	450 V.	
P-80861-F (Block)	C1	.1	Block	160 V.	White, Green Tr.
	C2	.25			Blue
	C3	.1			White, Green Tr.
	C4	.1			White, Red Tr.
	C5	.5			Brown
	C6	.1			White
	C7	.5			500 V. Red
	C8	.5			160 V. Yellow (2 Leads)
P-80879	C18	2.0	Block	160 V.	{ 25 cv. only }
	C19	1.0			400 V.

Common Black Lead

LAFAYETTE RADIO MFG. CO.

MODEL 10C10 (Late)
Schematic, Socket
Voltage

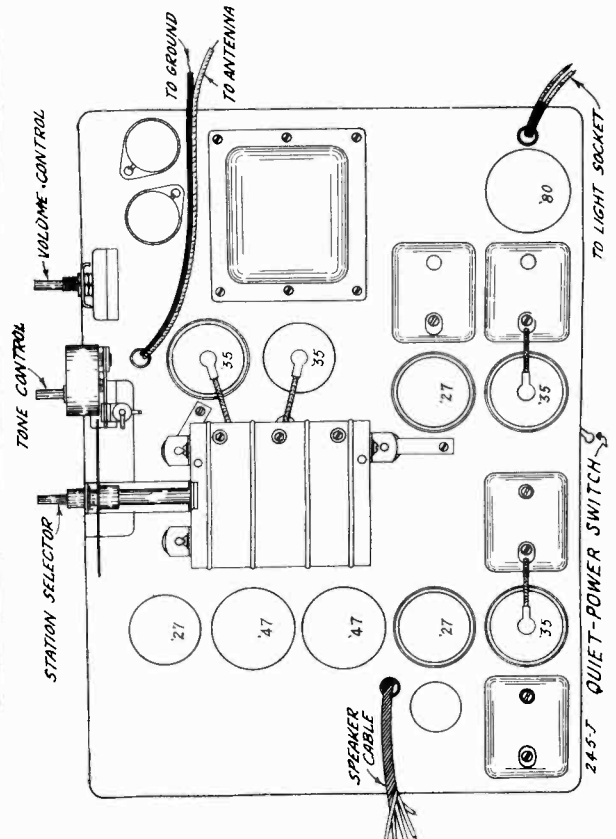


Voltages at Sockets

LINE VOLTAGE 115—VOLUME CONTROL AT
MAXIMUM—SECOND DETECTOR TUBE
REMOVED FROM SOCKET

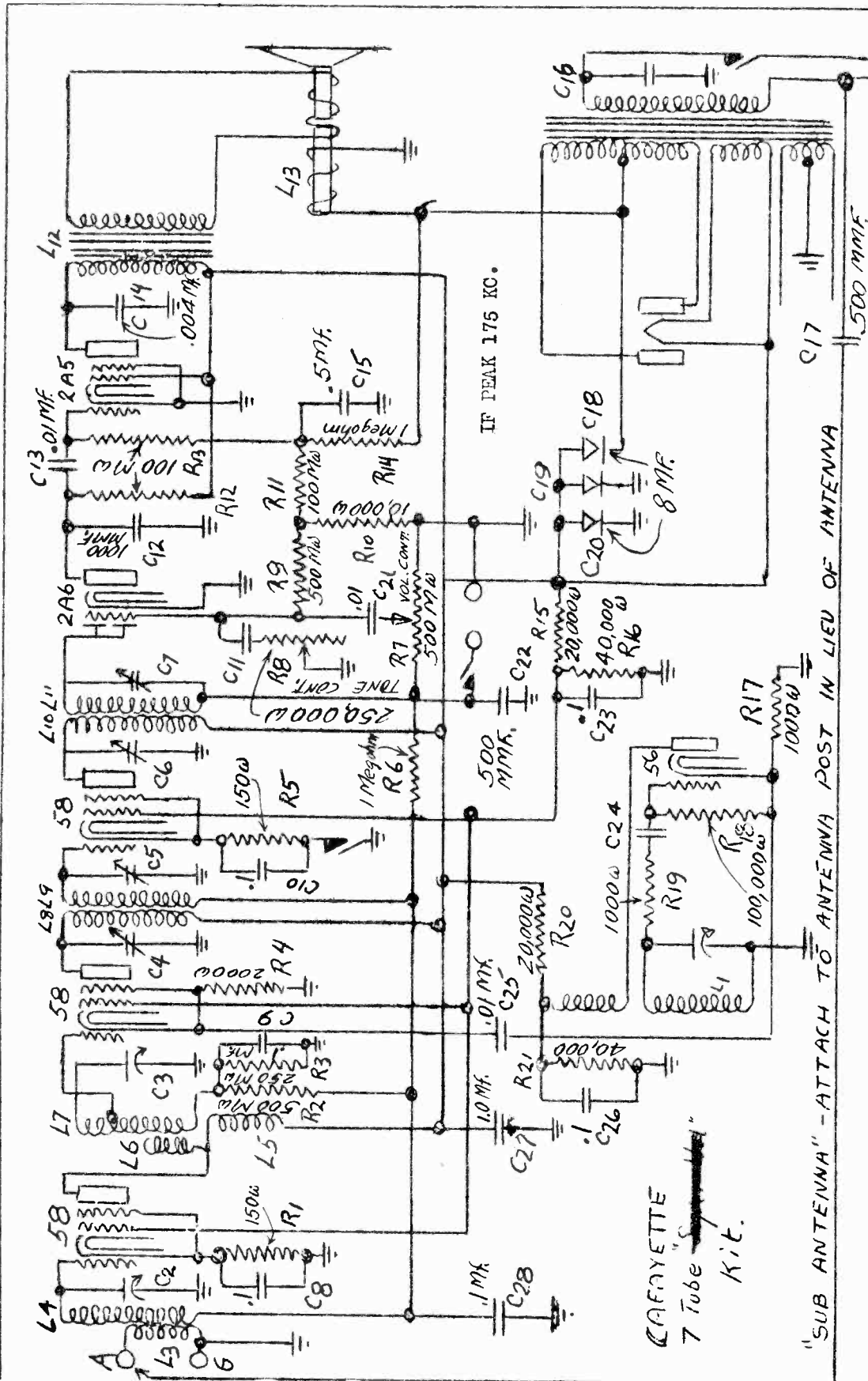
Type of Tube	Function	Across Filament or Heater	Plate to Cathode	Screen to Cathode	Grid to Cathode	Normal Plate MA
'35	R.F.	2.2	180	92	3 ⁽¹⁾	6.2
'35	1st. Det.	2.2	178	85	10 ⁽¹⁾	2.2
'27	Oscil.	2.2	94		6 ⁽²⁾	4.0 ⁽²⁾
'35	1st. I.F.	2.2	180	92	3 ⁽¹⁾	6.0
'35	2nd. I.F.	2.2	260 ⁽⁵⁾	90	6	5.5
'27	1st. Audio	2.2	105		5 ⁽³⁾	4.2
'47	2nd. Audio	2.2	245	260	17 ⁽⁴⁾	31.
'80	Rect.	4.8	725 volts plate to plate			66 per plate

(1) Read from cathode to ground.
 (2) Subject to variation with dial setting.
 (3) Read across 38 ohm section of voltage divider resistor.
 (4) Read across 38 and 100 ohm sections of voltage divider.
 (5) Changes to 178 volts in latest models.
 NOTE:—All readings, except heater, for second detector tube are zero.



LAFAYETTE RADIO MFG. CO.

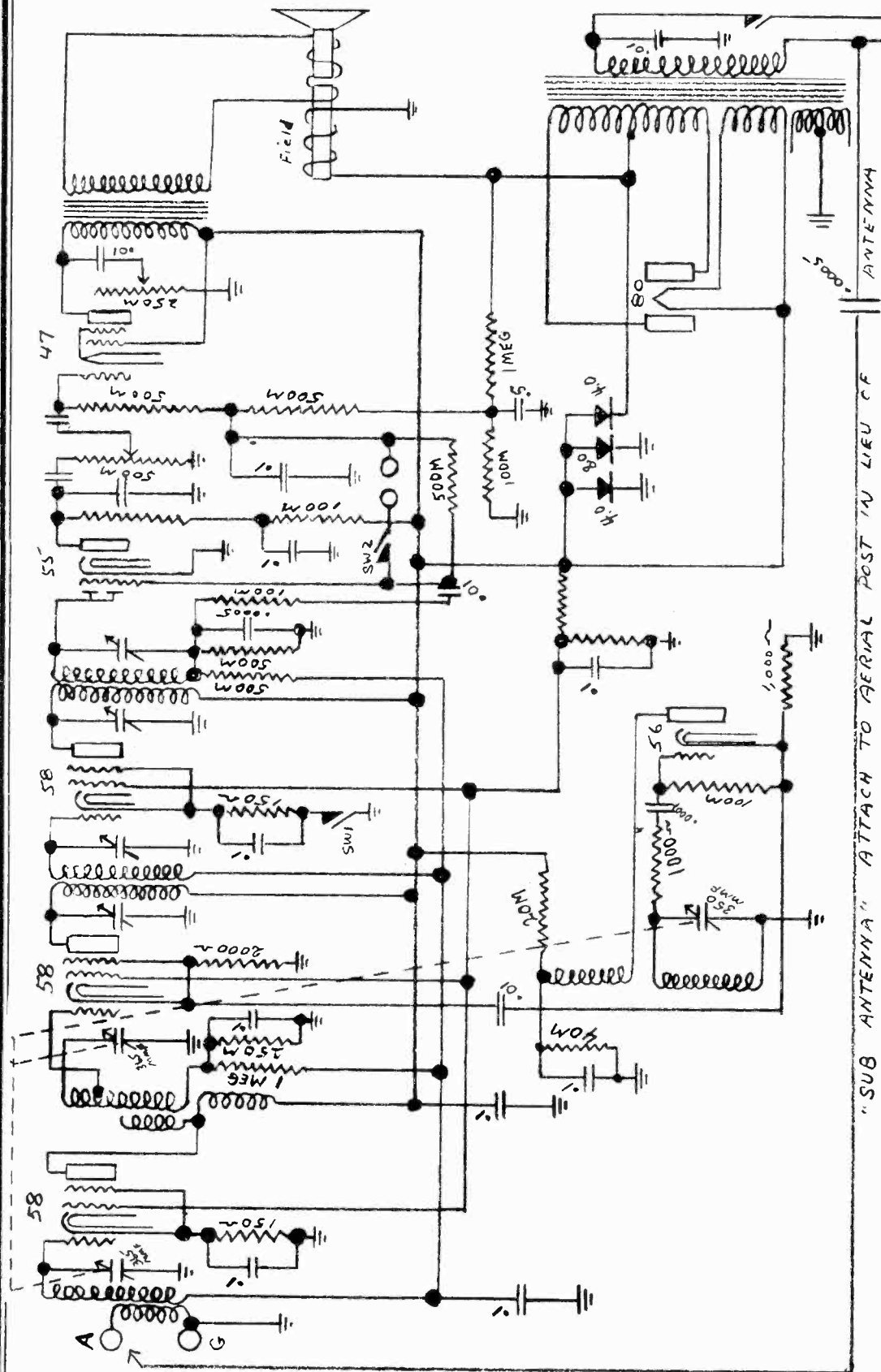
MODEL A-20
Schematic



"SUB ANTENNA" - ATTACH TO ANTENNA POST IN LIEU OF ANTENNA
LAFAYETTE RADIO & TELEVISION CORP. 100 SIXTH AV. N.Y.C. DRAWN BY F. SKIRNICKY CHECKED BY H. SHORR

LAFAYETTE RADIO MFG. CO.

MODELS M-35, 37, 53
Schematic



IF PEAK 175 KC.

SW1 "ON" (CLOSED) For Radio
 "OFF" (OPEN) For Phonograph
 SW2 (CLOSED) For Phonograph
 (OPEN) For Radio

"SUB ANTENNA" ATTACH TO AERIAL POST IN LIEU OF ANTENNA

Models M35-37-53

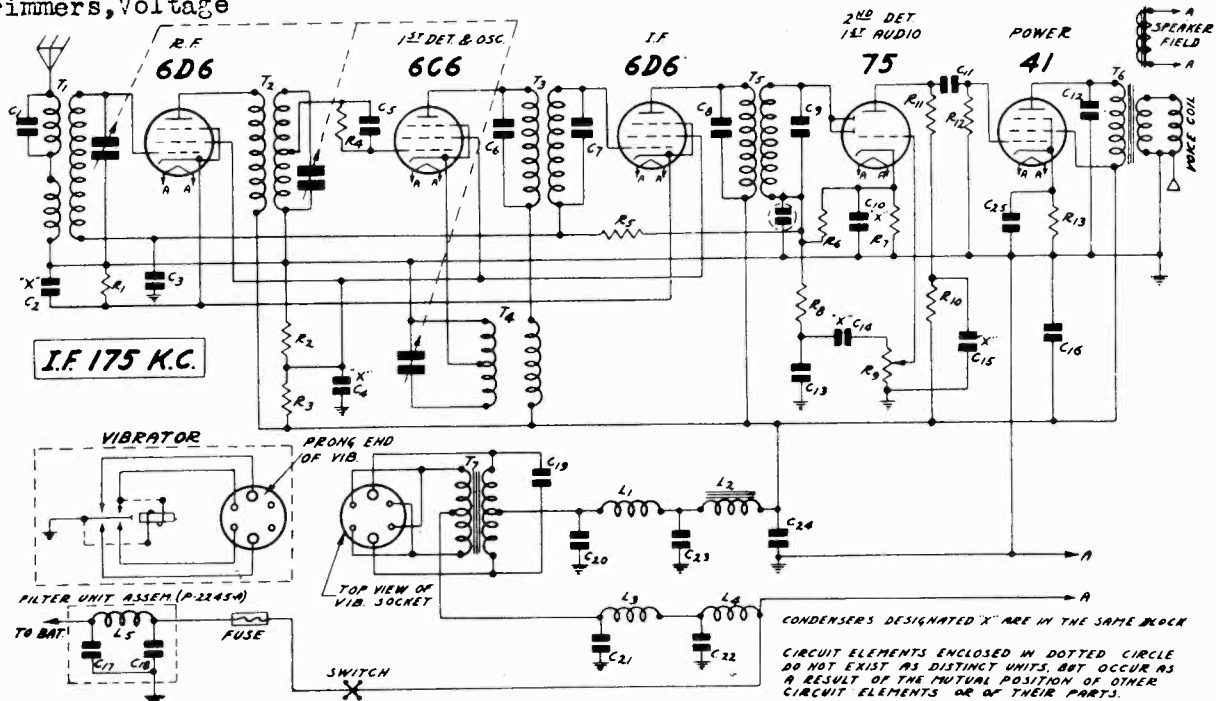
LAFAYETTE RADIO & TELEVISION Corp. (F.H.S.) 100 SIXTH AV N.Y.C.

MODEL B-62

Schematic, Socket Trimmers, Voltage

LAFAYETTE RADIO & TELEVISION CORP.

Resistance Test



D. C. Resistance of Windings

Following are the D. C. resistances of the various windings in the chassis. The values given below will vary slightly in different sets.

Part No.	Item	Code	D.C. Resistance in Ohms
P-5247	Antenna Trans. Pri. in Series	T1	17.50
	Antenna Trans. Sec.	T1	5.25
P-5248	R. F. Interstage Trans. Pri.	T2	2.31
	R. F. Interstage Trans. Sec. (Center Tap to Inside)		3.23
	(Center Tap to Outside)		3.98
P-5249	1st I. F. Trans. Primary	T3	100.00
	1st I. F. Trans. Secondary	T3	100.00
	Oscillator Cathode Coil (Total)	T4	4.50
	Oscillator Plate Coil	T4	9.00
P-5250	2nd I. F. Trans. Pri.	T5	100.00
	2nd I. F. Trans. Sec.	T5	100.00
P-50656	Power Trans. Pri.	T7	0.36
	Power Trans. Sec.	T7	860.00
P-5174	"1st" R. F. Choke	L1	1.65
P-50657	Power Choke	L2	390.00
P-5251	"A" Choke	L3	Small
P-5253	Line Choke	L4	Small
P-5252	Choke Coil	L5	Small
P-2228	Output Trans. Pri.	T6	690.00
	Output Trans. Sec. and Voice Coil in Par. Speaker Field		0.80 6.00

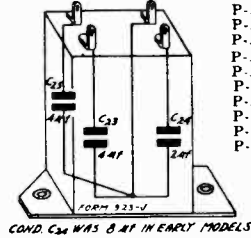
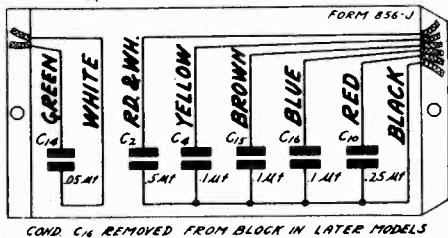
CONDENSERS DESIGNATED 'X' ARE IN THE SAME BLOCK

CIRCUIT ELEMENTS ENCLOSED IN DOTTED CIRCLE DO NOT EXIST AS DISTINCT UNITS, BUT OCCUR AS A RESULT OF THE MUTUAL POSITION OF OTHER CIRCUIT ELEMENTS OR OF THEIR PARTS.

Part No.	Code	Capacity	Voltage	Type
P-81814	C1	250 mmf.		Part of Antenna (Coil Assembly)
	C2	50 mf.	200V.	Bypass Block
	C4	10 mf.	140V.	
P-82600D	C10	25 mf.	140V.	
	C14	05 mf.	300V.	
	C15	10 mf.	200V.	
P-81116	C3	05 mf.	200V.	Tubular
P-81815	C5	35 mmf.		Part of Grid Leak Assembly
P-81806	C6	70 mmf.		Part of 1st I. F. & Osc. Coil Assembly
P-81806	C7	70 mmf.		
P-81115	C11	05 mf.	300V.	Tubular
P-81114	C12	006 mf.	600V.	
P-81814	C13	250 mmf.		Moulded
P-81132	C16	10 mf.	300V.	Tubular
	C17	01 mf.	120V.	[In Choke Condenser Unit]
	C18	01 mf.	120V.	
P-81120	C19	007 mf.	1600V.	Tubular
P-81122	C20	10 mf.	300V.	Tubular
P-81121	C21	50 mf.	140V.	Tubular
P-81816	C22	002 mf.		Moulded
	C23	4.0 mf.	250V.	Dry Electrolytic Block
P-82002	C24	2.0 mf.	250V.	
	C25	4.0 mf.	25V.	
P-82500				Gang Condenser

RESISTORS

Part No.	Code	Resistance	Wattage	Type
P-B94351ww	R1	350 Ohm	.5	Flexible Wire Wound
P-B95253	R2	25,000 Ohm	.5	Carbon
P-B95103	R3	10,000 Ohm	.5	Carbon
P-A95105	R4	1 Megohm	.2	Carbon
P-A95105	R5	1 Megohm	.2	Carbon
P-A95504	R6	500,000 Ohm	.2	Carbon
P-A94752	R7	7,500 Ohm	.2	Carbon
P-A95104	R8	100,000 Ohm	.2	Carbon
P-96017	R9	2 Megohm		Volume Control and Switch
P-A95503	R10	50,000 Ohm	.2	Carbon
P-A95204	R11	200,000 Ohm	.2	Carbon
P-A95504	R12	500,000 Ohm	.2	Carbon
P-B94801ww	R13	800 Ohm	.5	Flexible Wire Wound

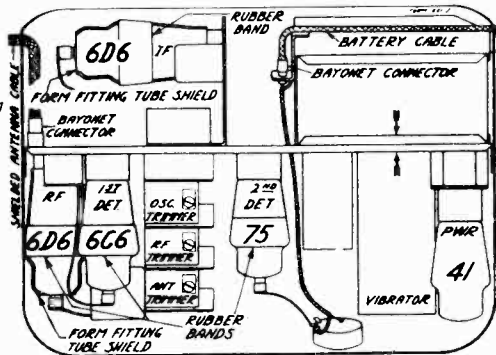


Condenser Block Internal Wiring

Electrolytic Block Internal Wiring

Type of Tube	Function	Volts at Heater	Plate to Cathode	Screen to Cathode	Grid to Cathode	Normal Plate M.A.
6D6	R. F.	6.2	154	95	3.0	5.2
6C6	1st Det. & Osc.	6.2	160	97	0	3.0
6D6	I. F.	6.2	154	95	3.0	5.2
75	2nd Det. & 1st A. F.	6.2	110	—	1.	.25
41	Power	6.2	143	146	14.	13.0

VOLTAGES AT SOCKETS
Input 6.3 volts
Antenna disconnected at connector.



Location of Tubes and Vibrator

LAFAYETTE RADIO MFG. CO.

MODEL 80-M
2 Types
Schematics

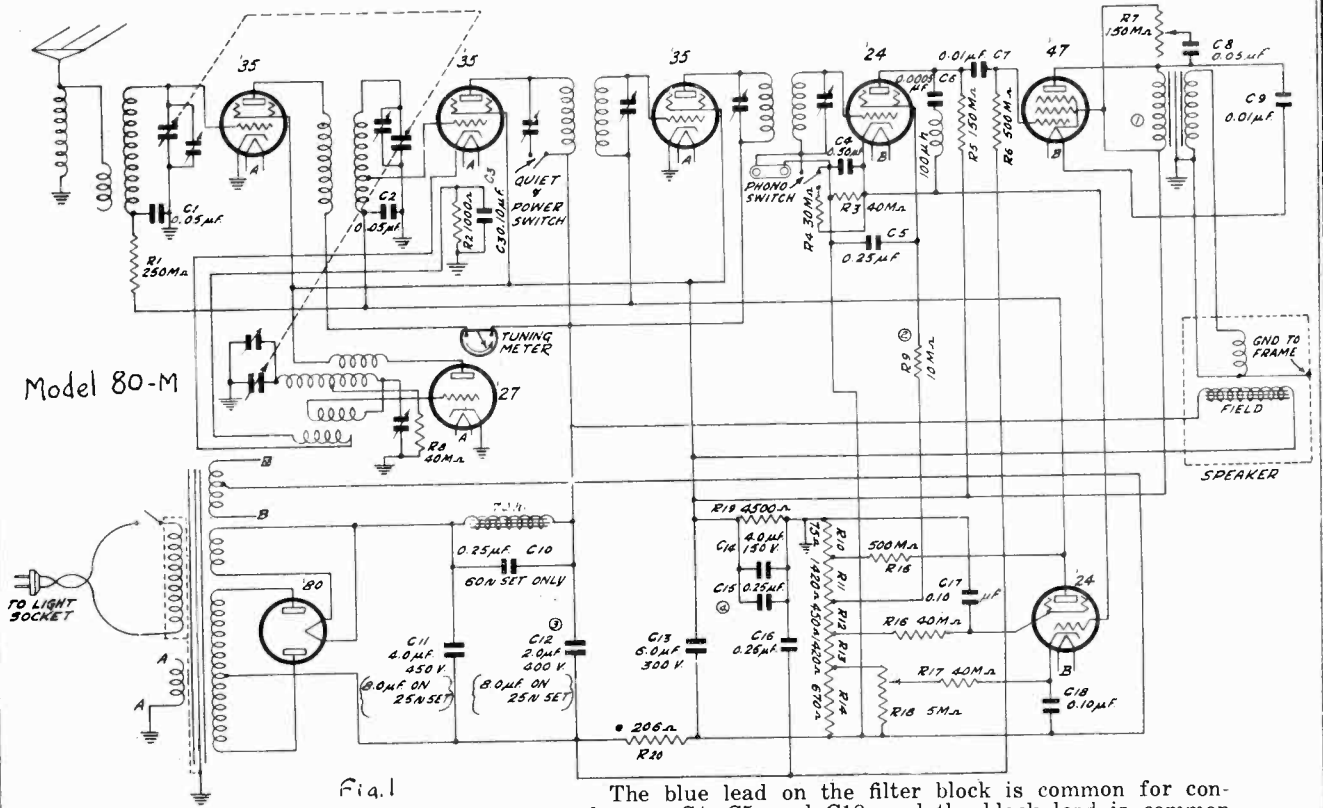


Fig. 1

IF PEAK 175 KC.

The blue lead on the filter block is common for condensers C4, C5, and C18, and the black lead is common for condensers C3, C15, C16, and C17. The second detector plate filter choke is also contained in the block and is connected by two yellow leads, C8, (white-red leads) and C10 (red leads) are connected as shown in Fig. 1 schematic

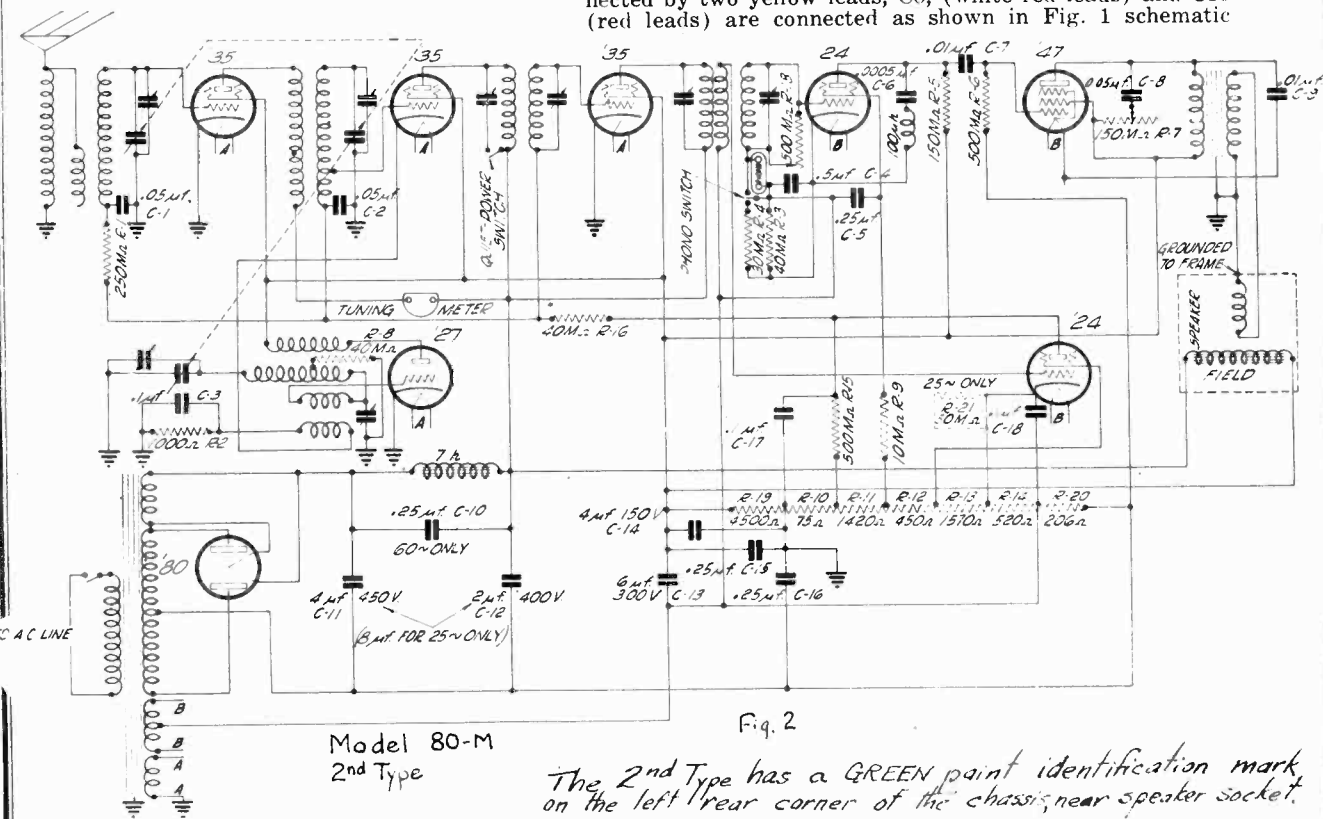


Fig. 2

Model 80-M
2nd Type

The 2nd Type has a GREEN paint identification mark on the left rear corner of the chassis, near speaker socket.

MODEL 80-1
Alignment, Parts

LAFAYETTE RADIO MFG. CO.

INTERMEDIATE CIRCUITS.—Tune the test oscillator to exactly 175 K.C., and connect its output to the grid of the first detector tube after removing the clip on the tip of the tube. Connect the output meter across the secondary of the speaker coupling transformer and then adjust all four condensers which tune the intermediate transformers, for the greatest deflection on the output meter. Check the settings of all four condensers to make certain the maximum output has been obtained.

When the above instructions have been followed remove the test oscillator coupling and replace the grid clip on the tip of the first detector tube.

GANG CONDENSERS.—Turn the gang condenser plates all the way in and see that the dial pointer is on the first dial division point below 550 K.C.

Tune the test oscillator to 1,400 K.C., turn the dial to read 1,400 K.C., and then adjust each gang condenser trimmer for maximum output.

OSCILLATOR.—Tune the test oscillator to 600 K.C., and tune the receiver to the signal. Disconnect the output meter and then, rotate the adjusting screw on the oscillator 600 K.C. tracking condenser. Rock the gang condenser back and forth across the signal at the same time, and listen closely until the maximum volume is obtained. The tracking condenser is then properly adjusted and remains fixed thereafter.

The gang condenser trimmers only must then be adjusted again at 1,400 K.C. for maximum output.

The receiver should be accurately aligned if the above instructions have been followed and no further adjustments need be made.

REPAIR PARTS LIST

^{1st} "only" precedes the names of the parts used only on the Series ⁸⁰⁻¹⁴ Chassis. ^{2nd} "only" precedes the names of the parts used only on the Series ^{80-14 Type 2} Chassis. When ordering repair parts, the number of the parts and the serial number of the chassis **MUST** be given.

Part No.	Name
1318	'35 Tube Socket
1316	'27 Tube Socket
1315	'24 Tube Socket
1322	'47 Tube Socket
1312	'80 Tube Socket
1387	Speaker Socket
1396	Antenna Transformer Assembly (no shield)
1397	Interstate R.F. Trans. Assembly (no shield)
1391	1st I.F. Transformer Assembly (with shield)
1400	Oscillator Coil Assembly (no shield)
1392 ^{1st}	ONLY, 2nd I.F. Transformer Assembly (with shield)
1446 ^{2nd}	ONLY, 2nd I.F. Transformer Assembly (with shield)
50539	Power Transformer, 60-cycle
50540	Power Transformer, 25-cycle
50537	Speaker Coupling Transformer
50538	Power Supply Choke
1092	Grid Clip Assembly
1402	"QUIET POWER" (S.P.S.T.) Switch
1054	"ON-OFF" Toggle Switch
20406	Tube Shield
1273	2 1/2-volt Dial Lamp
1336	Control Knob
1388	Escutcheon Plate
40412	Shield for R.F. and Oscillator Coils

1011	"PHONO" Switch, S.P.D.T.
1193	Phono Jacks Assembly
70719	Shielded Volume Control Wire Assembly
10142	1/2" Rubber Washer (for gang condenser mounting)
10143	1/4" Rubber Washer (for gang condenser mounting)
20252	3/4" Flat Metal Washer (for gang condenser mounting) 10 for
20388	Gang Condenser Cover
30365	Bushing for Rubber Pinion
10182	Rubber Pinion
20438	Drive Shaft
1384-C	Resonance Meter
1394	Dial Strip and Bracket Assembly
1363	Drive Bracket and Bearing Assembly
1382	Drive Disc, Hub and Fulcrum Assembly
1393	Indicator Assembly
70702	A.C. Cord and Plug
1407	Dial Lamp Clip Assembly (no lamp)

RESISTORS

Part No.	Key No.	Resistance	Type	Identification Base End Dot
90954-B	R-1	250,000 ohm	Carbon	Red Green Yellow
90940	R-2	1,000 ohm	Carbon	Brown Black Red
90916	R-3	40,000 ohm	Carbon	Yellow Black Orange
90956	R-4	30,000 ohm	Carbon	Orange Black Orange
90963	R-5	150,000 ohm	Carbon	Brown Green Yellow
90938-B	R-6	500,000 ohm	Carbon	Green Black Yellow
90984	R-7	500,000 ohm	Tone Control	
90916	R-8	40,000 ohm	Carbon	Yellow Black Orange
90930	R-9	10,000 ohm	Carbon	Brown Black Orange
90938	R-15	500,000 ohm	Carbon	Green Black Yellow
90916	R-16	40,000 ohm	Carbon	Yellow Black Orange
90916	R-17	40,000 ohm ^{1st}	ONLY CARBON	Yellow Black Orange
90983	R-18	5,000 ohm ^{1st}	Only Vol. Control	
90988	R-18	500,000 ohm ^{2nd}	Only Vol. Control	
	R-10	75 ohm		
	R-11	1,420 ohm		
	R-12	450 ohm		
90985	R-13	1,420 ohm	^{1st} ONLY CANDOHM	
	R-14	670 ohm		
	R-19	4,500 ohm		
	R-20	206 ohm		
	R-10	75 ohm		
	R-11	1,420 ohm		
	R-12	450 ohm		
90989-A	R-13	1,570 ohm	^{2nd} ONLY CANDOHM	
	R-14	520 ohm		
	R-19	4,500 ohm		
	R-20	206 ohm		

CONDENSERS

Part No.	Key No.	Capacity	Type	Voltage Rating
80862	C-1	.05 mfd.	Tubular	400 V.
80862	C-2	.05 mfd.	Tubular	400 V.
80855	C-6	.0005 mfd.	Molded	
80872	C-7	.01 mfd.	Tubular	500 V.
80872	C-9	.01 mfd.	Tubular	500 V.
80873-B	C-11	4.0 mfd.	Dry Electrolytic	450 V.
80874	C-12	2.0 mfd.	Dry Electrolytic	450 V.
80875	C-13	6.0 mfd.	Dry Electrolytic	450 V.
80878	C-14	4.0 mfd.	Dry Electrolytic	150 V.
	C-3	.1 mfd.		160 V. White-Green
	C-4	.5 mfd.		160 V. White
	C-5	.25 mfd.		160 V. White-Brown
	C-8	.1 mfd.		600 V. White-Red
	C-10	.25 mfd.		160 V. Red (2)
80876-G	C-15	.25 mfd.	Block	160 V. Brown
	C-16	.25 mfd.		200 V. Green
	C-17	.1 mfd.		160 V. White Green
	C-18	.1 mfd.		160 V. Black-White-Yellow
			Detector plate filter choke	
80871			Gang cond. only, no cover, dial assem. or drive assem.	
1385			Oscillator 600 K.C. adjustable tracking condenser	

LAFAYETTE RADIO MFG. CO.

MODEL 80-M

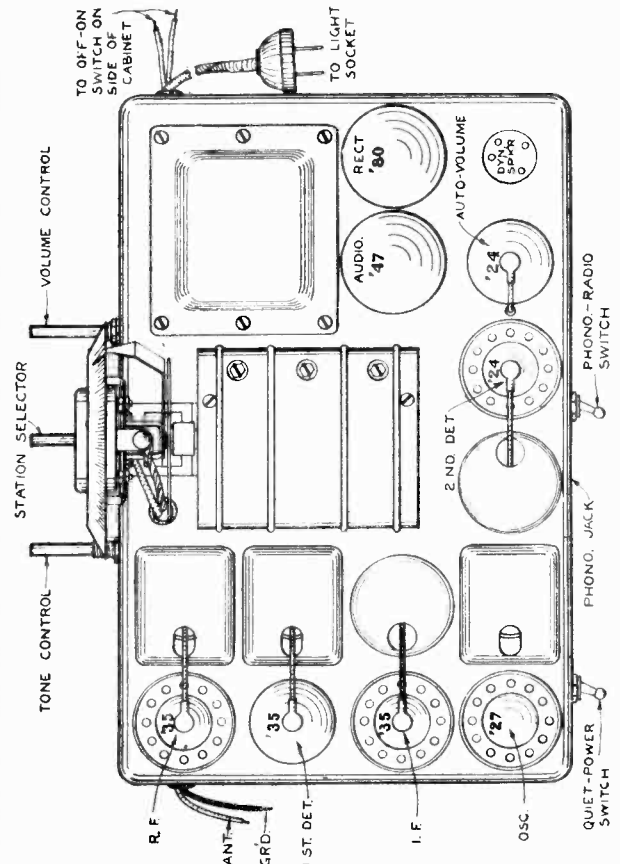
Socket, Voltage
Alignment, Pickup Data

Voltages at Sockets

The voltages shown in the chart were taken with a 1,000 ohm per volt voltmeter; voltage measurements taken with a voltmeter having a different resistance will, of course, differ from those shown.

Turn the volume control all the way on, connect the antenna and ground leads together and turn the gang condenser plates all the way out. Check the line voltage.

Tube	Circuit	LINE VOLTAGE				
		90 V.	100 V.	110 V.	120 V.	130 V.
R. F. '35	Screen-Grid Plate	70	78	85	92	100
		143	159	175	191	207
1st Det. '35	Screen-Grid Plate	70	78	85	92	100
		143	159	175	191	207
I. F. '35	Screen-Grid Plate	70	78	85	92	100
		143	159	175 <td 191	207	
Oscillator '27	Plate	70	78	85	92	100
2nd Det. '24	Screen-Grid Plate	66	73	80	87	94
		127	134	141	148	155
A. V. C. '24	Grid Screen-Grid	14	15.5	17	18.5	20
		24	26	28	30	32
Audio '47	Accelerating-Grid Plate	199	221	244	267	289
		171	190	210	230	250
Rectifier '80	Current (both plates) Plate to Plate Volt.	67	75	82	89	96
		MA	MA	MA	MA	MA
		512	569	625	682	739



Condenser Alignment

A thorough check of the receiver should be made before any attempt is made to re-align any circuits. Examine the antenna and ground connections. Test all the tubes and check all voltages to determine if the failure of the receiver to operate properly is not due to some fault other than misalignment. A superheterodyne receiver must be accurately aligned to be selective and sensitive. This receiver has been accurately aligned at the factory, and due to the mechanical design of the gang and adjustable condensers, will not lose its alignment unless damaged by abuse or accident.

A modulated test oscillator and an output meter **MUST** be used when aligning this receiver to insure accurate alignment. It is important that the oscillator deliver a signal at exactly 175 K.C. in addition to frequencies in the broadcast band.

The adjustable condensers which tune the primaries and secondaries of the I.F. transformers are adjusted by inserting a screw driver through the holes in the chassis base directly below the I.F. transformer assemblies.

A trimmer condenser is mounted over each section in the gang and is adjusted by turning the screw located under the hole in the top of the gang shield.

The oscillator 600 K.C. tracking condenser is on the back of the chassis near the "QUIET-POWER" switch.

Make each adjustment in the order given below or the receiver may be thrown further out of alignment and it will then be a difficult task to align it properly.

The receiver and test oscillator must be well grounded and the output kept within the range of the output meter at all times.

All shields must be in place when making the adjustments.

Phonograph Pickup

A high impedance pickup is recommended for use with this receiver, as that type gives greatest volume when a transformer is not available. A transformer should be used with a low impedance pickup, as that type of pickup generally does not otherwise provide sufficient volume. A transformer having a ratio of 4 to 1 will prove satisfactory in most instances.

A pickup with a self-contained volume control is required as the volume control on the chassis cannot be used to adjust the volume.

To connect the pickup, remove the wire between the two jacks, mounted on bakelite on the rear of the chassis, and plug in the tips of the pickup cord. The word "PHONO" is stamped on the bakelite. Turn the receiver on and then throw the switch, near the center, on the back of the chassis, to the right. The pickup will then be connected and records may be played.

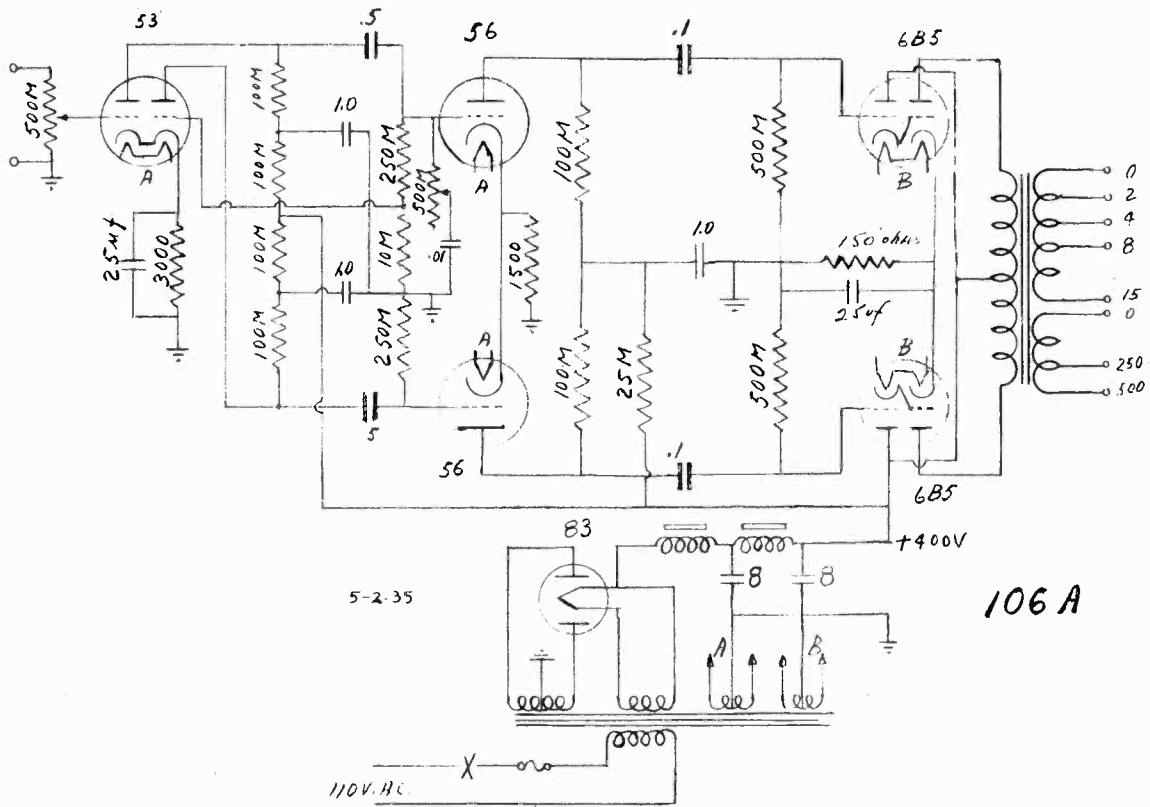
The switch connects the pickup in the grid circuit of the second detector tube and connects the 30,000 ohm cathode bias resistor (R4) so that a proper bias is obtained for record reproduction.

When a transformer is used, connect the pickup cord tips to the primary of the transformer and connect the secondary to the phono jacks on the chassis.

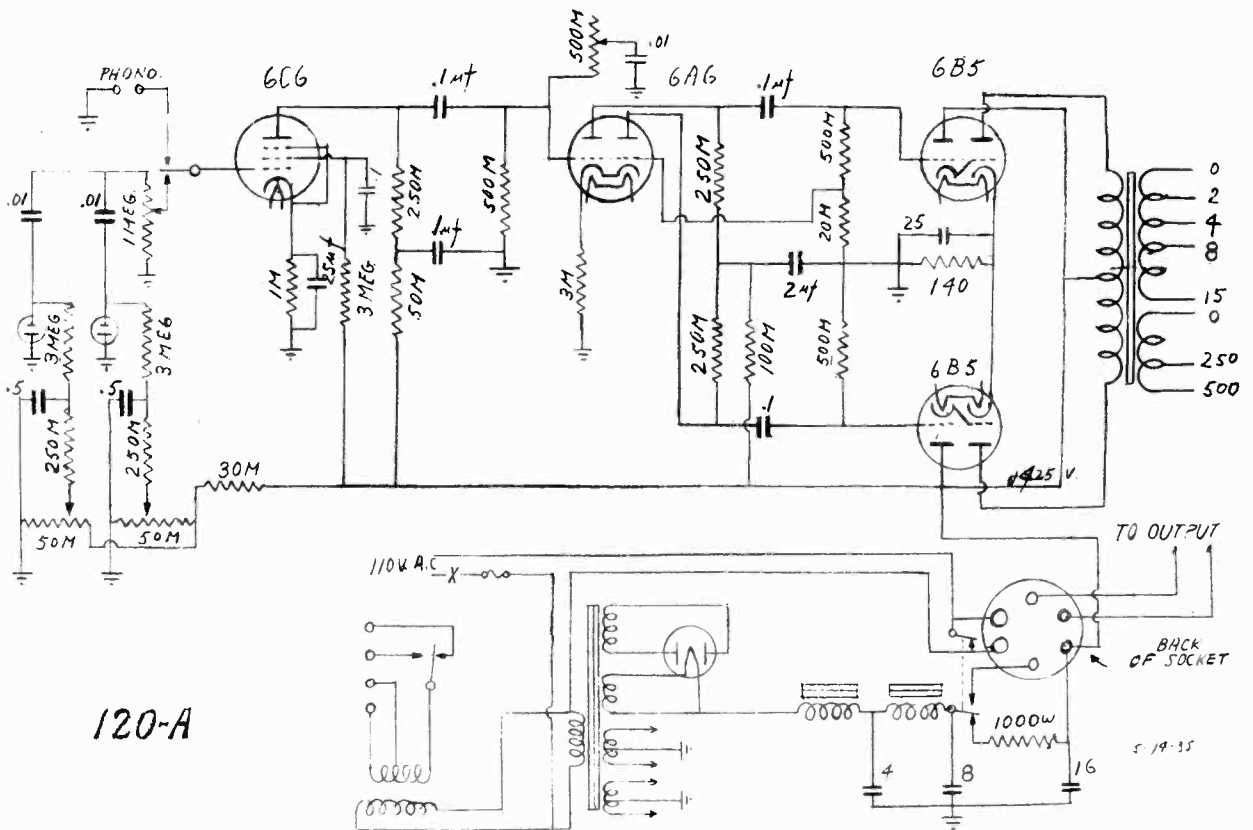
When it is desired to tune in broadcast signals it is only necessary to throw the switch to the left. The pickup cords must not be removed. If, for any reason, they are removed, the wire which originally connected the phono jacks **must** be replaced before the receiver is used for broadcast reception.

LAFAYETTE RADIO MFG. CO.

MODEL 106-A
MODEL 120-A
Schematics



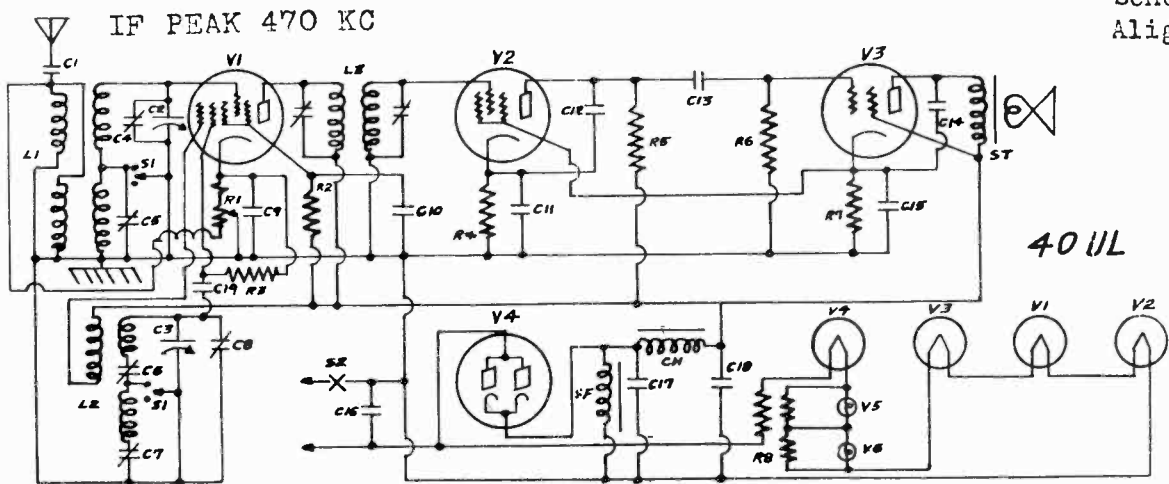
106 A



120-A

LANG RADIO CORP. (New Co.)

MODEL 40-UL
MODEL 50-US
Schematics
Alignment

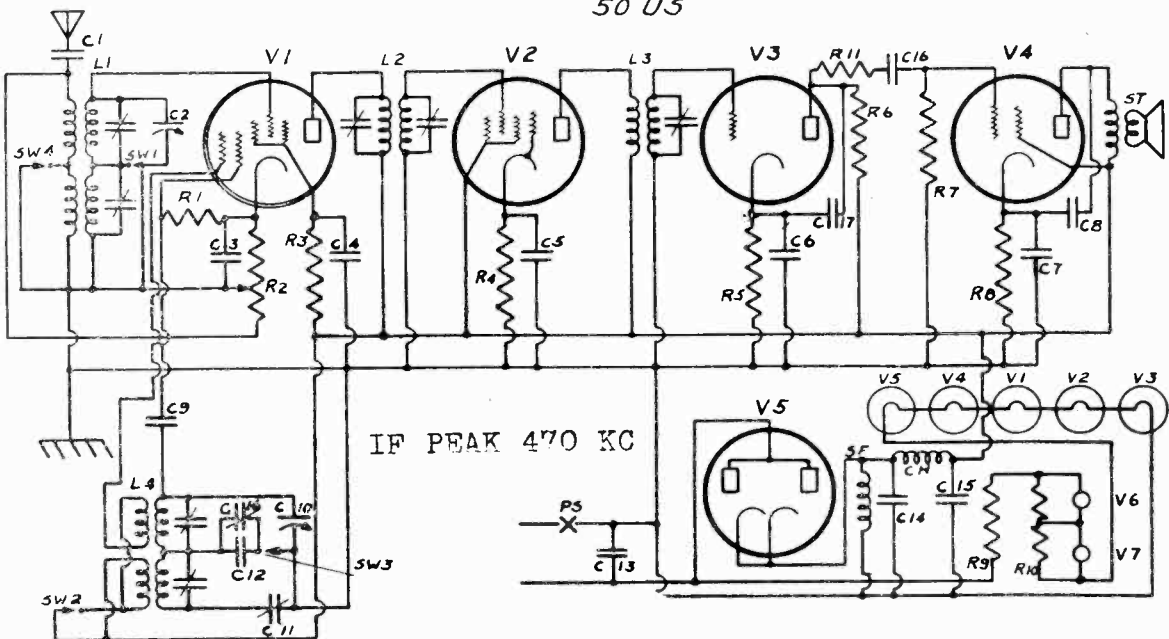


40 UL

- | | | |
|----------------------|---------------------------------|------------------------|
| V1—6A7 Tube | C9—10-16—.05 Mf. Cond. | R7—700w Resistor |
| V2—6C6 Tube | C11—15—10 Mf. Cond. | R8—150-25-25 Resistor |
| V3—43 Tube | C12—19—.0025 Mf. Cond. | L1—Antenna Coil |
| V4—25Z5 Tube | C13—14—.01 Mf. Cond. | L2—Oscillator Coil |
| V5—6—6-8V Pilot Bulb | C17—12 Mf. Cond. | L3—DT IF Trans—470 KC |
| C1—.002 Mf. Cond. | C18—8 Mf. Cond. | S1—Band Switch |
| C2-3—365 Mmf. Cond. | R1—10,000w Vol. Cont. 120w Min. | S2—Power Switch |
| C4-5-8—40 Mmf. Cond. | R2—15,000w Resistor | ST—Speaker Trans. |
| C6—500 Mmf. Cond. | R3-4—20,000 Resistor | SF—Speaker Field—3000w |
| C7—140 Mmf. Cond. | R5-6—500,000 Resistor | CH—Choke Coil |

TO ALIGN RECEIVER: Apply 470 KC to Grid of V1 and adjust L3—Turn Band Switch to Broadcast. Apply 1400 KC to Ant. and Adjust C4 and C8. Apply 600 KC and Adjust C6. Turn to Long Wave—Apply 150 KC and adjust C7—Apply 300 KC and adjust C5.

50 US



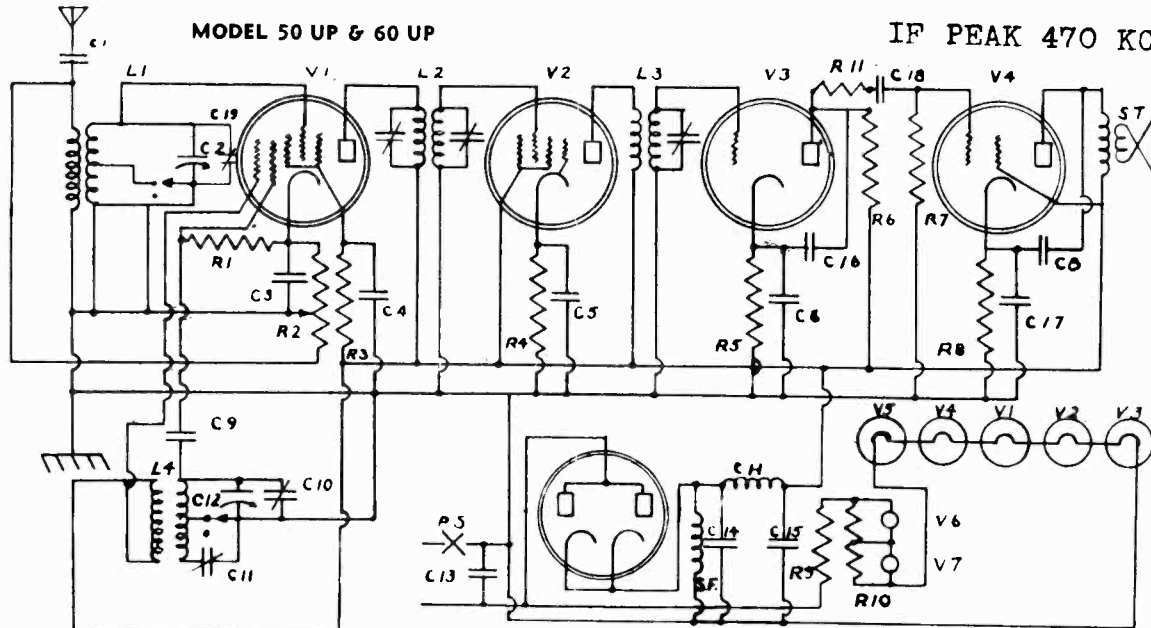
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|------------------------------|---------------------------|----------------------------|
| V1—6A7 | C3, 4, 5, 13—.05 Mfd. | R3—15,000 Ohms |
| V2—6D6 | C8, 16—.01 Mfd. | R4—400 Ohms |
| V3—76 | C9—.0001 Mfd. | R6, 7—500,000 Ohms |
| V4—43 | C11, 16—300-600 Mmf. | R8—700 Ohms |
| V5—25Z5 | C12—.0018 Mfd. | R9—130 Ohms (Line Cord) |
| V6, 7—6-8 V. Pilot Lamps | C6, 7—10 Mfd. | R10—25-25 Ohms |
| L1—Antenna Coil | C14—12 Mfd. | CH—Filter Choke |
| L2—D.T. I.F. Trans.—470 K.C. | C15—8 Mfd. | PS—Power Switch |
| L3—S.T. I.F. Trans.—470 K.C. | C17—.0005 Mfd. | SF—Speaker Field-3000 Ohms |
| L4—Oscillator Coil | R1, 5, 11—50,000 Ohms | ST—Speaker Transformer |
| C1—.002 Mfd. | R2—10,000 Ohms Vol. Cont. | SW 1, 2, 3, 4—Band Switch |
| C2, 10—365 Mmf. | 120 Mmf. Min. | |

TO ALIGN RECEIVER:—Turn band switch to Short Wave. Short C10. Apply 470 kilocycles to grid of V1 and adjust L2 trimmers and L3 trimmer. Remove short from C10. Set dial to 15 megacycles calibration. Apply this frequency to antenna and adjust L4 short wave trimmer. Adjust L1 short wave trimmer. Turn band switch to Broadcast. Set dial to 150 calibration. Adjust L4 broadcast trimmer. Adjust L1 broadcast trimmer. Set dial to 60 calibration and adjust C11. Return dial to 150 calibration and re adjust L4 broadcast trimmer.

MODELS 50-UP, 60-UP
MODEL 50-AS

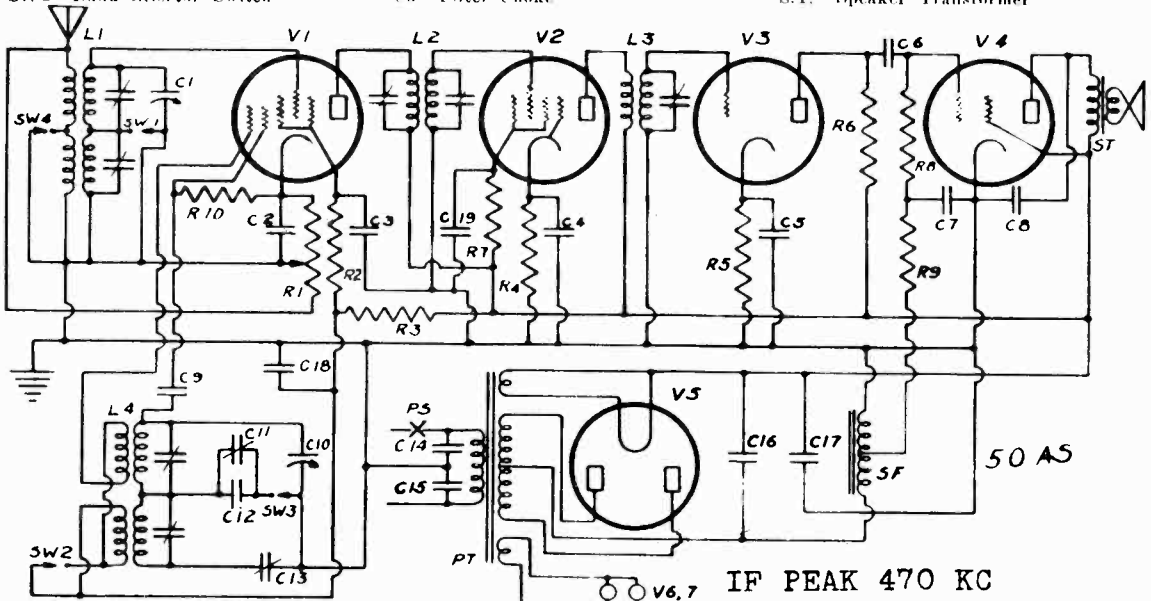
LANG RADIO CORP. (New Co.)

Schematics, Alignment



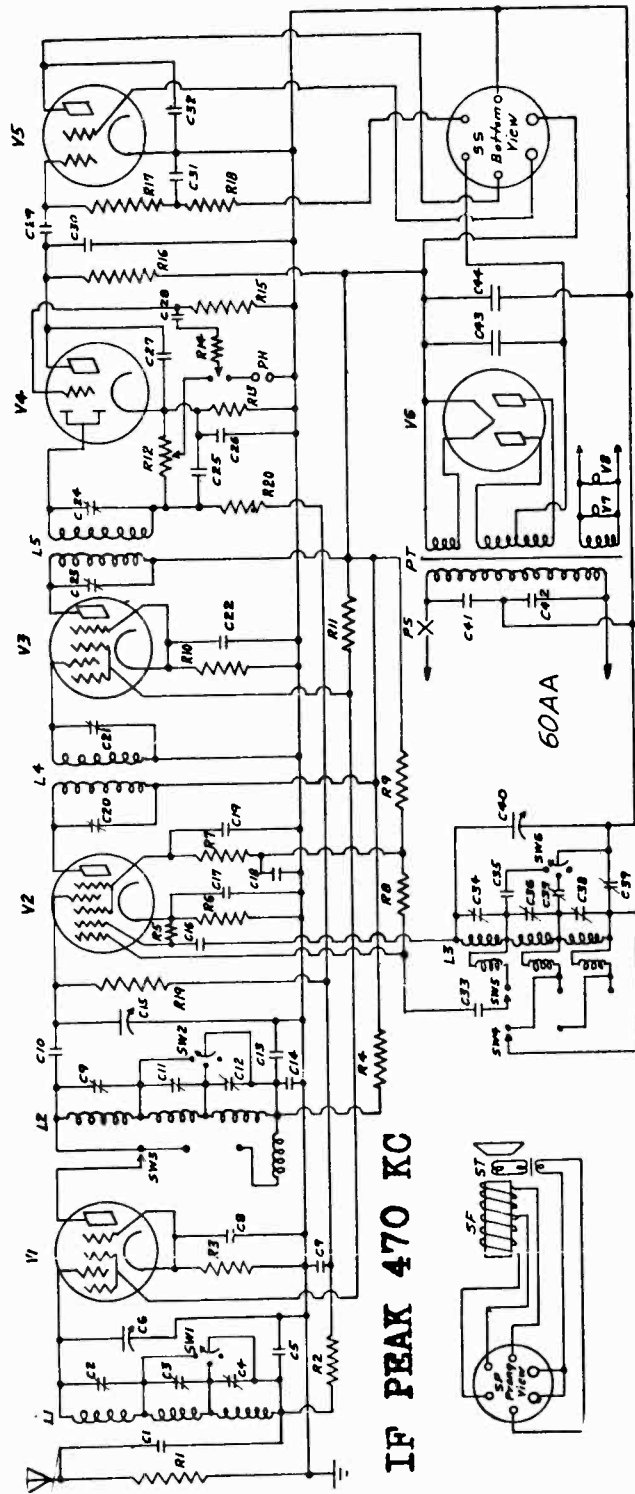
TO ALIGN RECEIVER:—Turn band switch to Short Wave. Short C12. Apply 470 kilocycles to grid of V1 and adjust L2 trimmers and L3 trimmer. Remove short from C12. Turn band switch to Broadcast. Set dial to 150 calibration. Adjust L4 broadcast trimmer. Adjust L1 broadcast trimmer. Set dial to 60 calibration and adjust C11. Return dial to 150 calibration and readjust L4 broadcast trimmer.

- | | | |
|----------------------------|-----------------------|---------------------------------------|
| V1—6A7 | C1—.002 Mfd. | R1, 5, 11—50,000 Ohms |
| V2—6D6 | C2, 12—365 Mmfd. | R2—10,000 Ohms Vol. ont. |
| V3—76 | C3, 4, 5, 13—.05 Mfd. | R3—15,000 Ohms |
| V4—43 | C10, 19—20 Mmfd. | R4—400 Ohms |
| V5—25Z5 | C8, 18—.01 Mfd. | R6, 7—500,000 Ohms |
| V6, 7—6-8V. Pilot Lamp | C6, 17—10 Mfd. | R8—700 Ohms |
| L1—Ant. Coil | C14—12 Mfd. | R9—130 Ohms Line Cord or Ballast Tube |
| L2—D.T. I.F. Transformer | C15—8 Mfd. | R10—25-25 |
| L3—S.T. I.F. | C9, 16—.00025 Mfd. | P.S.—Power Switch |
| L4—Oscillator Coil | C11—600 Mmfd. | S.F.—Speaker Field |
| S1, 2—Band Selector Switch | Ch—Filter Choke | S.T.—Speaker Transformer |



- | | | | |
|--------------------------|-------------------------|-------------------|---------------------------|
| V1—6A7 | L4—Oscillator Coil | C11, 13—600 Mmfd. | R1—10,000 Ohms Vol. Cont. |
| V2—6D6 | PS—Power Switch | C12—.0018 Mfd. | 120 Ohms Minimum |
| V3—76 | C1, 10—365 Mmfd. | C5—.10 Mfd. | R2—30,000 Ohms |
| V4—38 | C2, 3, 4, 19—.05 Mfd. | C16—8 Mfd. | R3—20,000 Ohms |
| V5—80 | C6, 14, 15, 18—.01 Mfd. | C18—4 Mfd. | R4—300 Ohms |
| V6, 7—6-8 V. Pilot Lamp | C7—.1 Mfd. | C17—12 Mfd. | R5, 9, 10—50,000 Ohms |
| L1—Antenna Coil | C9—.0001 Mfd. | | R6, 8—500,000 Ohms |
| L2—D.T. I.F. Transformer | | | R7—75,000 Ohms |
| L3—S.T. I.F. Transformer | | | R9—50,000 Ohms |

LANG RADIO CORP. (New Co.)



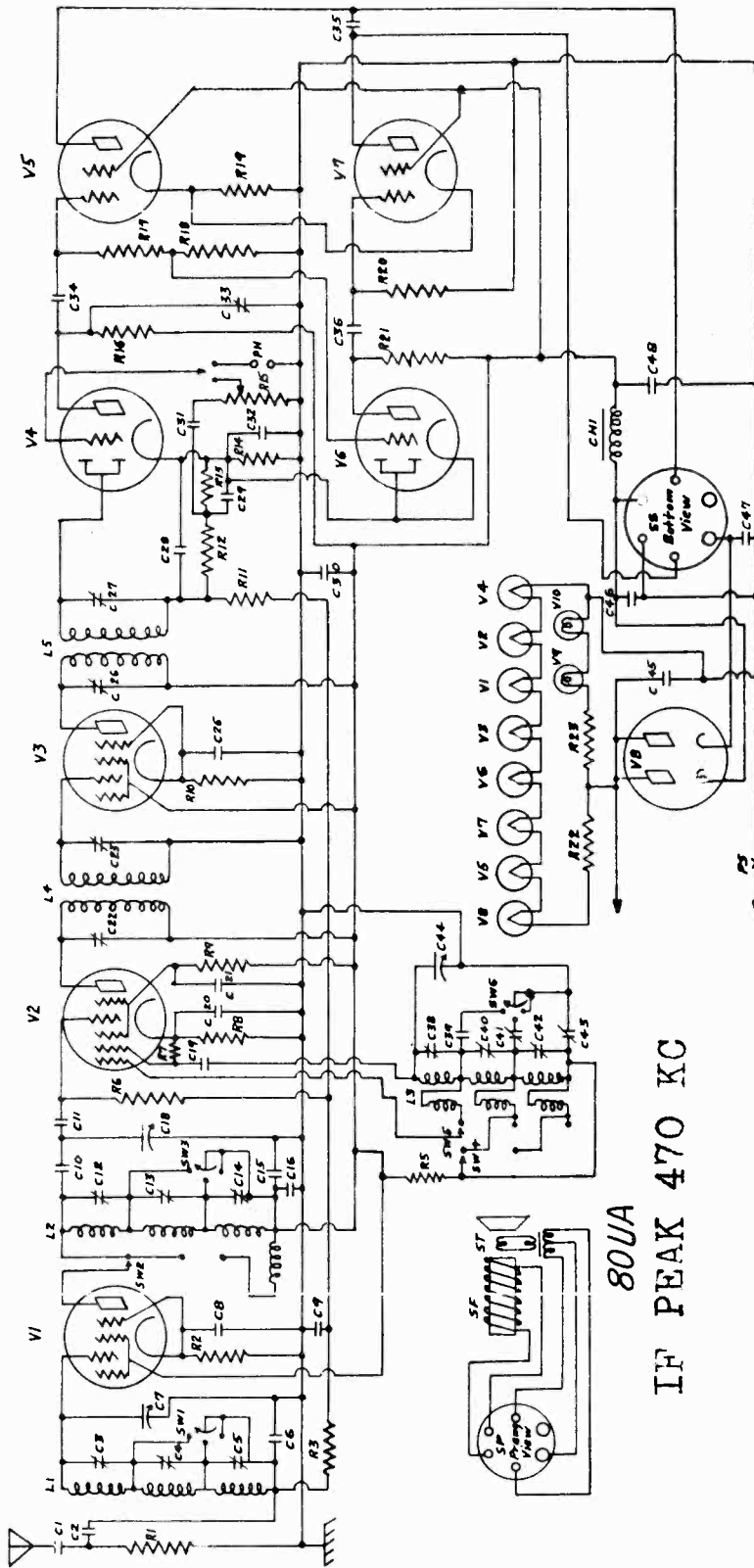
IF PEAK 470 KC

- V1-3—6D6 Tube
- V2—6A7 Tube
- V4-75 Tube
- V5-41 Tube
- V6-80 Tube
- V7-8—6.8V Pilot Bulb
- C1—.0001 Mf.
- C2-3-4-9-11-12-34-36-38—40 Mmf.
- C5—.001819 Mf.
- C6-15-40—440 Mmf.
- C7-8-17-19-22—.05 Mf.
- C10—.003636 Mf.
- C13—.1 Mf.
- C14-18—4 Mf.
- C16—.00005 Mf.
- C20-24—220 Mmf.
- C21-23—140 Mmf.
- C25—.0005 Mf.
- C26—5 Mf.
- C27—.00025 Mf.
- C28-29-41-42—.01 Mf.
- C30—.006 Tone Control
- C31—.25 Mf.
- C32—.006 Mf.
- C33—.002 Mf.
- C35—.001282 Mf.
- C37—1000-2000 Mf.
- C39—300-600 Mf.
- C43-44—8 Mf.
- R1-8—20,000 Ohm
- R2—100,000 Ohm
- R3—400 Ohm
- R4-9—10,000 Ohm
- R5-14—50,000 Ohm
- R6—300 Ohm
- R7—25,000 Ohm
- R10—500 Ohm
- R11—40,000 Ohm

- R12—500,000 Ohm Vol. Cont.
- R13—3,000 Ohm
- R15-17—500,000 Ohm
- R16-18—250,000 Ohm
- R-19-20—1,000,000 Ohm
- L1—Antenna Coil
- L2—R. F. Coil
- L3—Oscillator Coil
- L4—DT IF Trans. 470 KC—Step Up
- L5—DT IF Trans. 470 KC—Step Down
- SW1-2-3-4-5-6—Band Selector Switch
- PS—Power Switch
- PT—Power Transformer
- SS—Speaker Socket
- SP—Speaker Plug
- ST—Speaker Transformer
- SF—Speaker Field—1800 Ohm—Tap 266
- PH—Phono Jack

MODEL 80-UA
Schematic

LANG RADIO CORP. (New Co.)



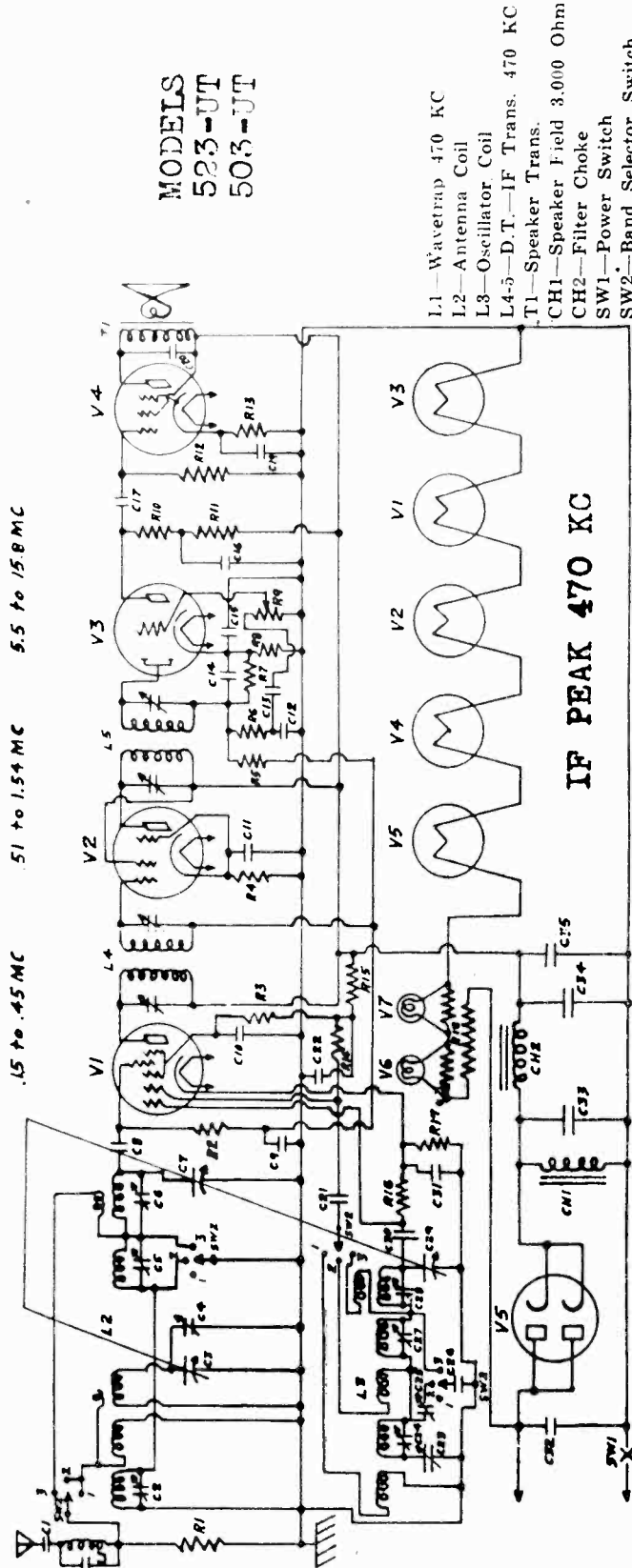
80UA
IF PEAK 470 KC

- C30—.25 Mf.
- C31-34-36—.01 Mf.
- C33—.006 Tone Control
- C35—.002 Mf.
- C39—.001282 Mf.
- C41—1000-2000 Mmf.
- C43—300-600 Mmf.
- C46-47-48—16 Mf.
- C11-19—.00005 Mf.
- C15—.1 Mf.
- C16-32—4 Mf.
- C22-27—220 Mmf.
- C23-26—140 Mmf.
- C28-29—.00025 Mf.
- L1—Antenna Coil
- L2—R. F. Coil
- L3—Oscillator Coil
- L4—DT IF Trans. 470 KC—Step Up
- L5—DT IF Trans. 470 KC—Step Down
- SW1-2-3-4-5-6—Band Selector Switch
- PS—Power Switch
- SS—Speaker Socket
- SF—Speaker Field—3000 Ohm
- ST—Speaker Transformer
- SP—Speaker Plug
- CH1—Filter Choke
- PH—Phono Jack
- V1-3—6D6 Tube
- V2—6A7 Tube
- V4-6—75 Tube
- V5-7—43
- V8—25Z5 Tube
- V9-10—6-SV Pilot Bulb
- C1—.002 Mf.
- C2—.0001 Mf.
- C3-4-5-12-13-14-38-40-42-40 Mmf.
- C6—.001819 Mf.
- C7-18-44—440 Mmf.
- C8-9-20-21-25-45—.05 Mf.
- C10—.003636 Mf.
- R1—20,000 Ohm
- R2—200 Ohm
- R3-16-21—100,000 Ohm
- R6-11—1,000,000 Ohm
- R8-10—400 Ohm
- R9—15,000 Ohm
- R12-7—50,000 Ohm
- R13—500,000 Ohm
- R14—2,500 Ohm
- R15—500,000 Ohm
- R17-20—250,000 Ohm
- R18-5—10,000 Ohm
- R19—350 Ohm
- R22—50 Ohm
- R23—700 Ohm

LANG RADIO CORP. (New Co.)

MODELS 503-UT, 523-UT
Schematic, Alignment

MODELS
523-UT
503-UT



- L1—Wavetrap 470 KC
- L2—Antenna Coil
- L3—Oscillator Coil
- L4-5—D.T.—IF Trans. 470 KC
- T1—Speaker Trans.
- CH1—Speaker Field 3,000 Ohm
- CH2—Filter Choke
- SW1—Power Switch
- SW2—Band Selector Switch

- V1—6A7 Tube
- V2—6D6 Tube
- V3—75 Tube
- V4—43 Tube
- V5—25Z5 Tube
- V6-7—6-8V. Pilot Bulb

- R1-8—5,000 Ohm Resistor
- R12—500,000 Ohm Resistor
- R14-16—20,000 Ohm Resistor
- R15—3,000 Ohm Resistor
- R4-17—400 Ohm Resistor
- R18—130-29-29 Ohm Resistor
- R9—1,000,000 Ohm Volume Control

- R1-8—5,000 Ohm Resistor
- C35—.05 Mf. Cond.
- R2-5—1,000,000 Ohm Resistor
- R3—15,000 Ohm Resistor
- R13—700 Ohm Resistor
- R6—50,000 Ohm Resistor
- R7—750,000 Ohm Resistor
- R10-11—100,000 Ohm Resistor

- C22-34—8 Mf. Cond.
- C23—140 Mmf. Cond.
- C25—500 Mmf. Cond.
- C26—.016 Mf. Cond.
- C30—.00005 Mf. Cond.
- C33—16 Mf. Cond.

- C1-21—.002 Mf. Cond.
- C2-4-5-6-24-27-28—40 Mmf. Cond.
- C3-7-29—365 Mmf. Cond.
- C8—0001 Mf. Cond.
- C9-10-11-16-31-32—.05 Mf. Cond.
- C12-14—.00025 Mf. Cond.
- C15-19—.10 Mf. Cond.
- C13-17-20—.01 Mf. Cond.

TO ALIGN THE RECEIVER:—Turn band switch to short wave—short C29—apply 470 KC to grid of V2 and adjust L5—apply 470 KC to grid of V1 and adjust L4—remove short from C29—apply 12MC to antenna and adjust C28 and C6 . . . Turn band switch to long wave—apply 150 KC to antenna and adjust C23—apply 300 KC and adjust C24 and C2—keep re-adjusting at these frequencies until done . . . Turn band switch to broadcast—apply 1400 KC to antenna and adjust C27, C4 and C5—apply 600 KC and adjust C25—readjust at 1400 KC if necessary.

