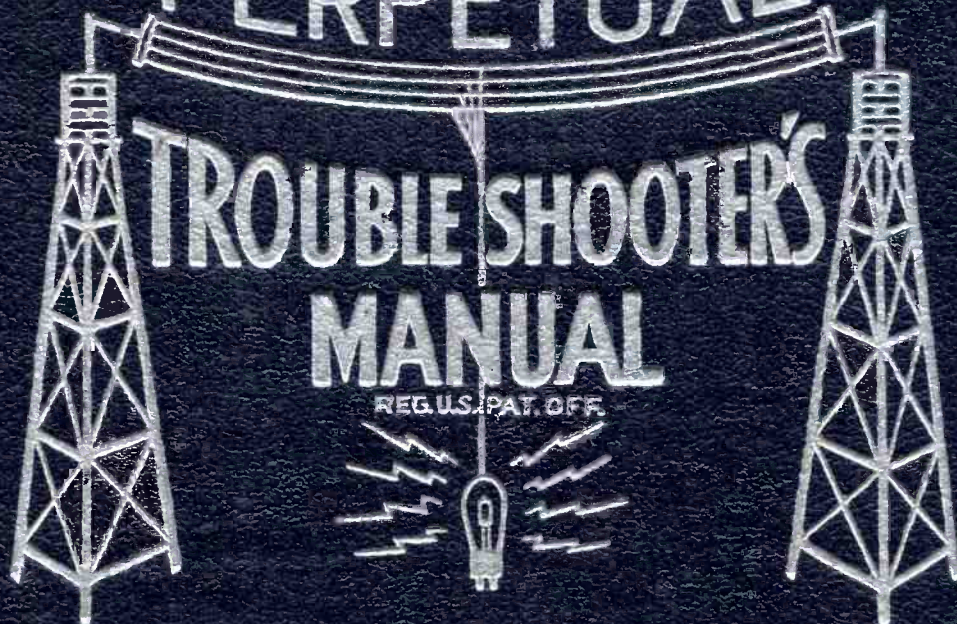


VOLUME VIII

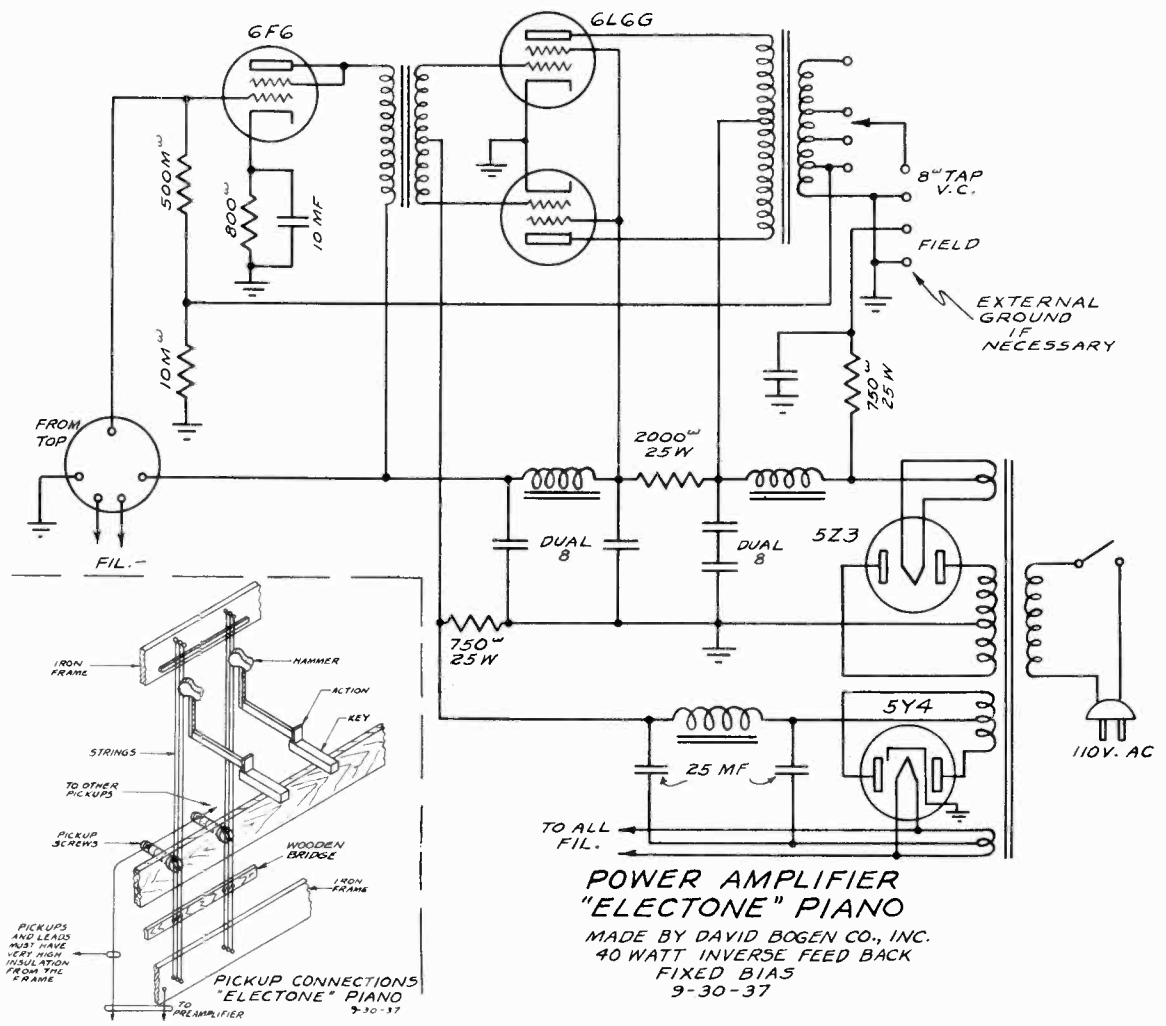
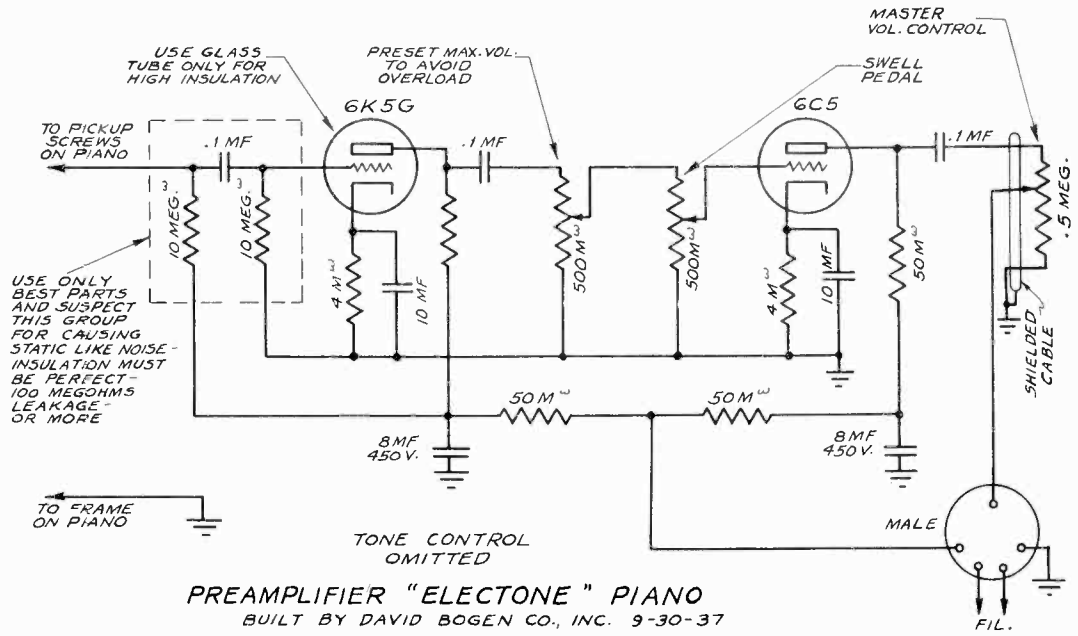
PERPETUAL



JOHN F. RIDER

Schematics
Pick-up Connections

MODEL Electone Piano
KRAKAUER BROS. Preamplifier, Power Amplifier



MODEL Electone Piano
Service Notes

KRAKAUER BROS.

AMPLIFIER CIRCUITS:

The output transformer is especially designed and if it is damaged, an exact replacement is necessary.

The tone control is subject to wide variations according to individual requirements. Some forms depend on the cathode by-pass for control; therefore, replace this component with exact value.

Use only glass tubes in the input, as the leakage is less, and only glass tubes in the output, because of the possibility of a short to the shell.

NOISE ELIMINATION:

First suspect dirt on the pick-up screws. These are insulated with lacquer, but this is not perfect. Clean with a vacuum-cleaner with blower attachment, which should be run for a few minutes so that the hose will be free from dirt. A thin strip of paper can be worked between the strings and the pick-up screws to remove stubborn particles of dirt.

Moisture may get into the wooden strip supporting the pick-up screws. This can be dried by placing in the bottom of the piano a $\frac{1}{2}$ pint fruit jar which is $\frac{1}{3}$ filled with calcium chloride. This should be renewed when it disintegrates. When the strip is dry it should be oiled with Nujol.

Another source of noise may be leakage in the input group (the two 10-megohm resistors and the .1-mf condenser). Replace with the best components obtainable. In severe climates place these three components in a small cardboard pill-box and fill it with paraffine wax, bringing out the leads so they can be readily connected to their proper points.

HUM:

Hum may be due to trouble in the filters, unmatched output tubes, or a poor bias rectifier, if trouble is confined to the amplifier.

Electrostatic pick-up to screws is shielded by the back-board of the piano. This board must make good contact with the ground clamps. If proper contact can not be established, cover the back-board with tin-foil shellaced in place and grounded.

REGULATING PICK-UP SCREWS:

This must be done with the help of a professional piano tuner who must be a tone regulator. The tuner should tone regulate the piano very soft, paying attention to evenness of tone and not evenness of volume. Then he can strike the notes, telling the serviceman at the rear of the piano, if the pick-up screws need adjustment. Turn screws to right to make louder -- to the left to make softer. Take care that screws are not turned too far to the right, so that the strings will touch screw when a very hard blow is struck on the key.

These screws should ordinarily need no attention during the life of the piano. Only in case of buckling of the mechanism or tampering need these be touched.

SETTING MASTER LEVEL CONTROL:

The striking of the hammer on the strings sets up tremendous transients in the electrical circuit which last a small fraction of a second. These tend to overload the amplifier and when the average output of the amplifier is 3 or 4 watts, the transients may be of the order of several hundred watts. Accordingly, a 40-watt amplifier is used for low average power. Do not set the screw-driver type volume control too high. The instrument is not supposed to sound much louder than an ordinary acoustic piano.

Overload causes rattling similar to speaker cone rattles. Do not blame the speaker until you are sure.

SWELL PEDAL ADJUSTMENT:

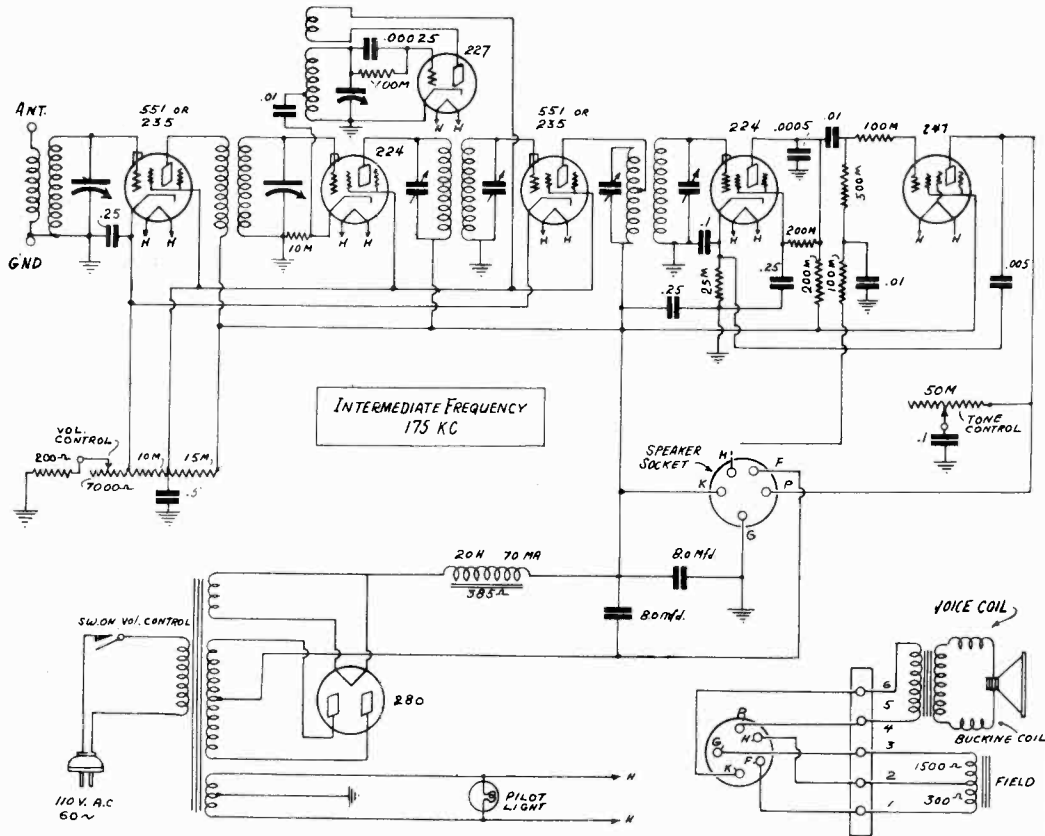
The mechanical connection from the swell pedal to its control should be set so that with the pedal completely depressed, the sound from the speaker is just not noticeable.

NOTE:

Special parts and further service information may be obtained from Krakauer Brothers, 191 Cypress Ave., New York City.

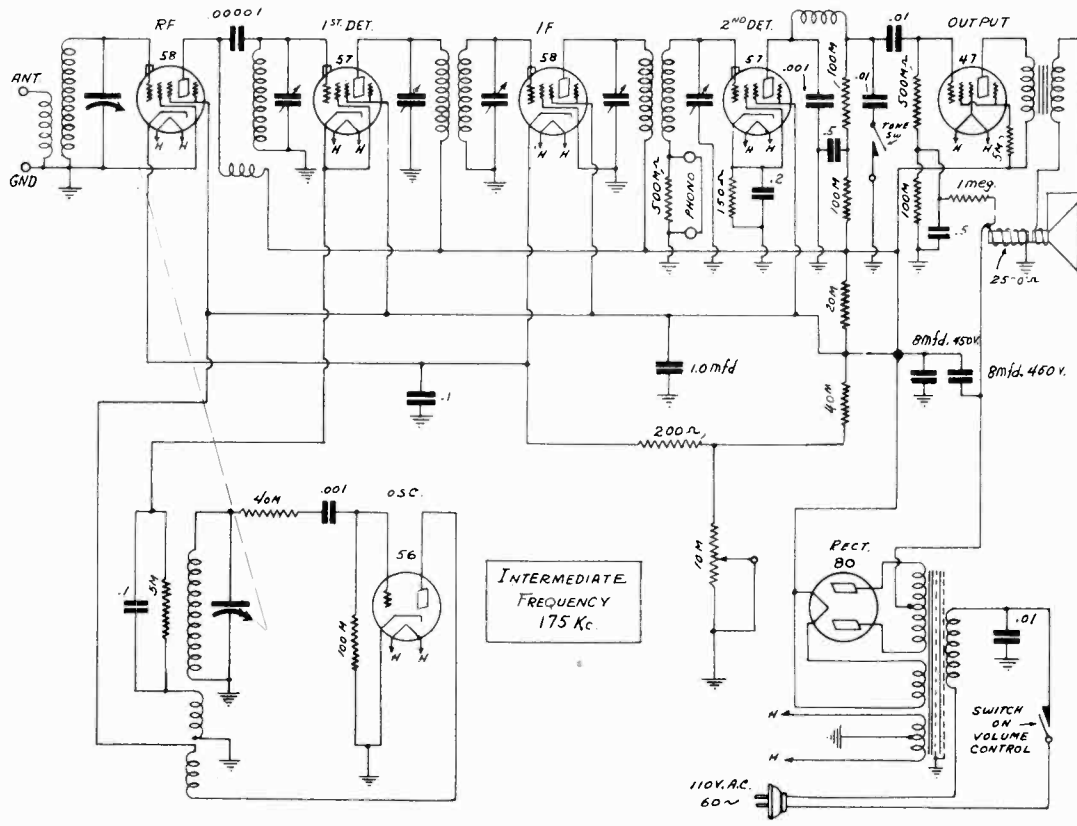
LAFAYETTE RADIO MFG. CO.

MODEL Fireside #1
MODEL Fireside #2
2Y2280
Schematics



Lafayette Fireside No. 1.

Print No.	
Drawn by	W. L.
Date	Sept. 18 1935
Checked by	

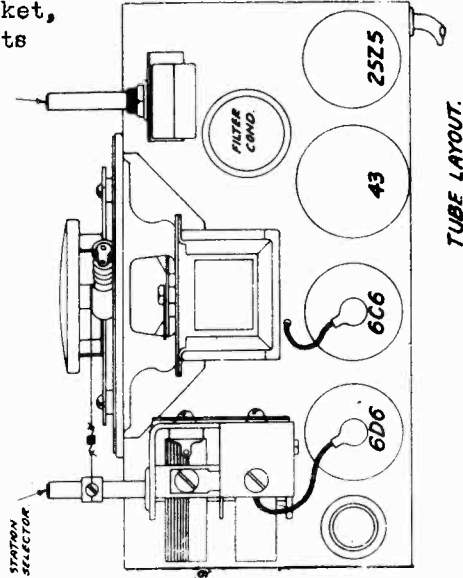


Lafayette 2Y2280 Fireside No. 2

Print No.	
Drawn by	W. L.
Date	Sept 18 1935
Checked by	

MODEL EB8
MODEL EB9
Schematics
Socket,
Parts

LAFAYETTE RADIO MFG. CO.

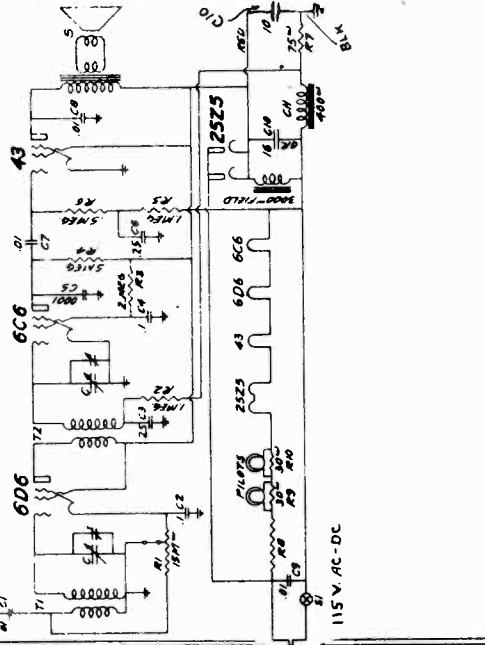


REPLACEMENT PARTS LIST

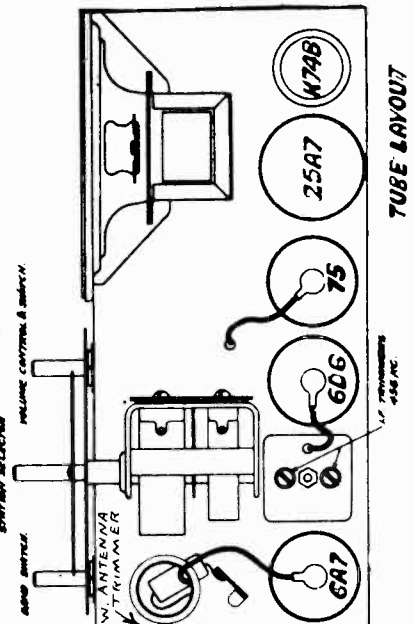
In Ordering Always State Model, Description, & Part No.

Part #	Description	Part No.
4606-A	Antenna Coil	21
3894-A	R.F. Coil	22
50008-A	Loud Speaker	5
5201-C	Choke	6H
4206-A	Tuning Condenser	C
	Mica Condenser .0001 MF.	C5
	Tantalum Condenser .01 MF. 200 V.	C1, C7, C8
		C2, C4
		C8, C6
4606-A	Filter Condenser 16 & 10 MF.	C10
4106-A	Volume Control & Switch	R1, S1
		R2, R6
		R3
		R4, R6
		R7
4662-A	Armored Resistor 100 Ω 1/2W	R9, R10
4654-A	Resistance Cord	EB
4461-P	Pilot Bulb	
4501-D	Antenna Cord	

Model EB 9



Model EB 8

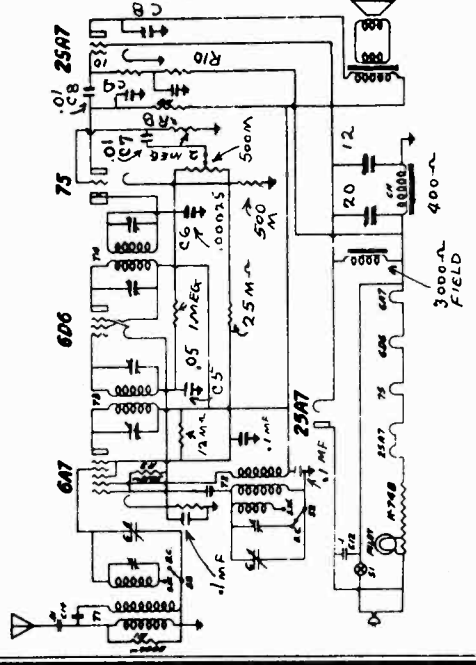


REPLACEMENT PARTS LIST

In Ordering Always State Model, Part No. & Description

Part #	Description	Part No.
4606-A	Antenna Coil	21
4606-A	Antenna Coil	21
4708-A	1st I.F. Coil	12
4707-A	2nd I.F. Coil	13
4801-B	Choke	6H
4461-P	Pilot Bulb	
4606-A	Lead Breaker	S
4601-B	Lead Cord	R12, S1
4402-B	Band Switch	S2
4106-A	Tuning Condenser	C
	Mica Condenser .00025 MF.	C2, C6
	Mica Condenser .0008 MF.	C1, C3, C5
	Tantalum Condenser .1 MF. 200 V.	C10, C11
		C12, C13
4601-B	Tantalum Condenser .05 MF. 200 V.	C1
		C12, C13
4601-B	Filter Condenser 20 & 12 MF.	C14
		C15
	Resistor 500 Ω 1/2 watt	R1
		R4
		R5
		R6
		R7
		R8
		R9
		R10
		R11
		R12
		R13
		R14
		R15
		R16
		R17
		R18
		R19
		R20
		R21
		R22
		R23
		R24
		R25
		R26
		R27
		R28
		R29
		R30
		R31
		R32
		R33
		R34
		R35
		R36
		R37
		R38
		R39
		R40
		R41
		R42
		R43
		R44
		R45
		R46
		R47
		R48
		R49
		R50
		R51
		R52
		R53
		R54
		R55
		R56
		R57
		R58
		R59
		R60
		R61
		R62
		R63
		R64
		R65
		R66
		R67
		R68
		R69
		R70
		R71
		R72
		R73
		R74
		R75
		R76
		R77
		R78
		R79
		R80
		R81
		R82
		R83
		R84
		R85
		R86
		R87
		R88
		R89
		R90
		R91
		R92
		R93
		R94
		R95
		R96
		R97
		R98
		R99
		R100

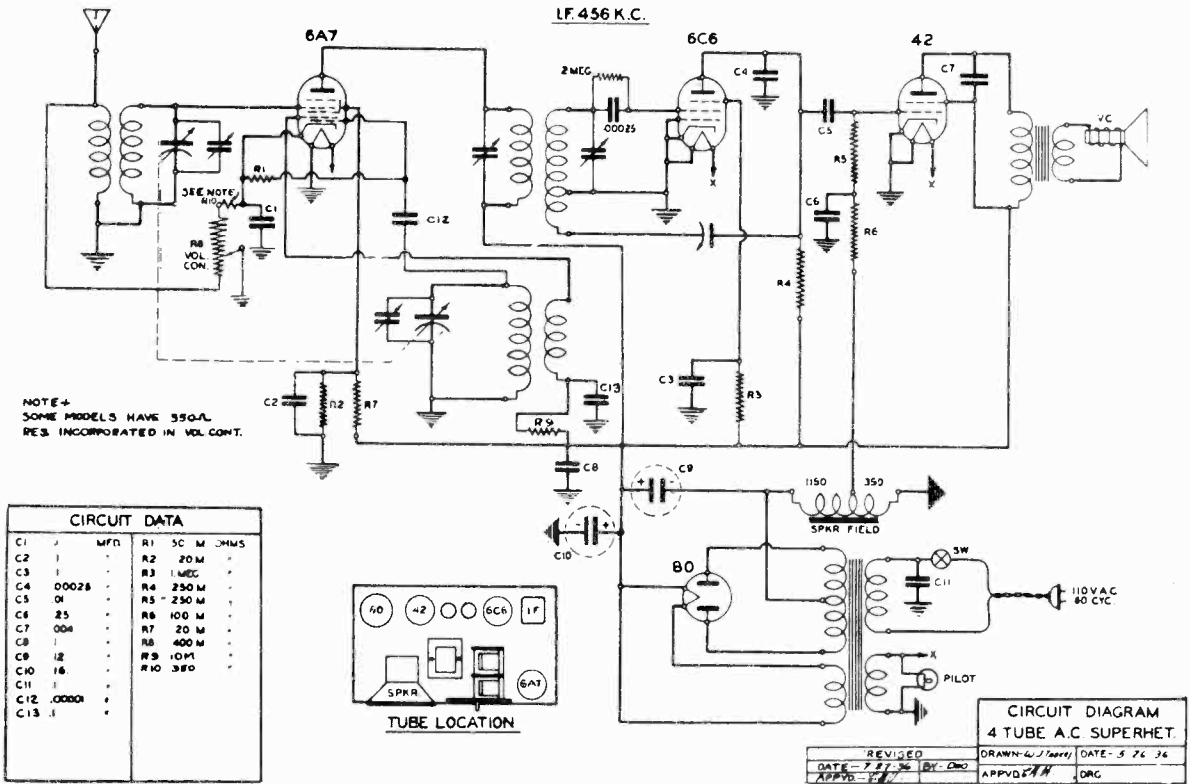
IF PEAK 456KC



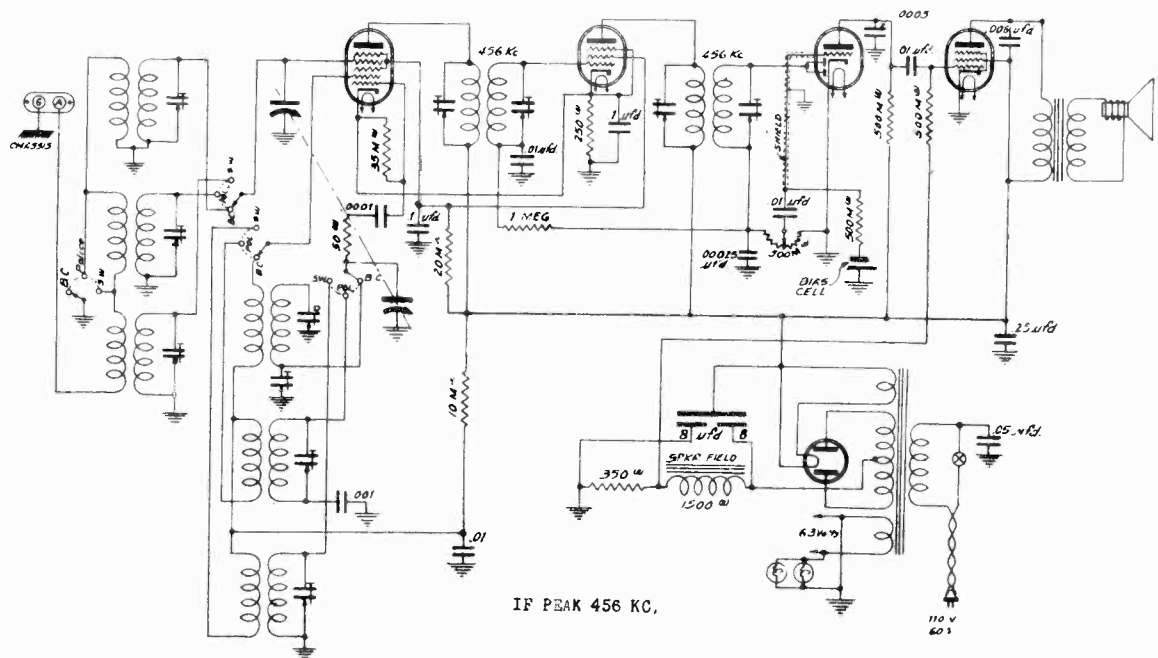
LAFAYETTE RADIO MFG. CO.

MODEL D10
MODEL D11
Schematics

MODEL D 10

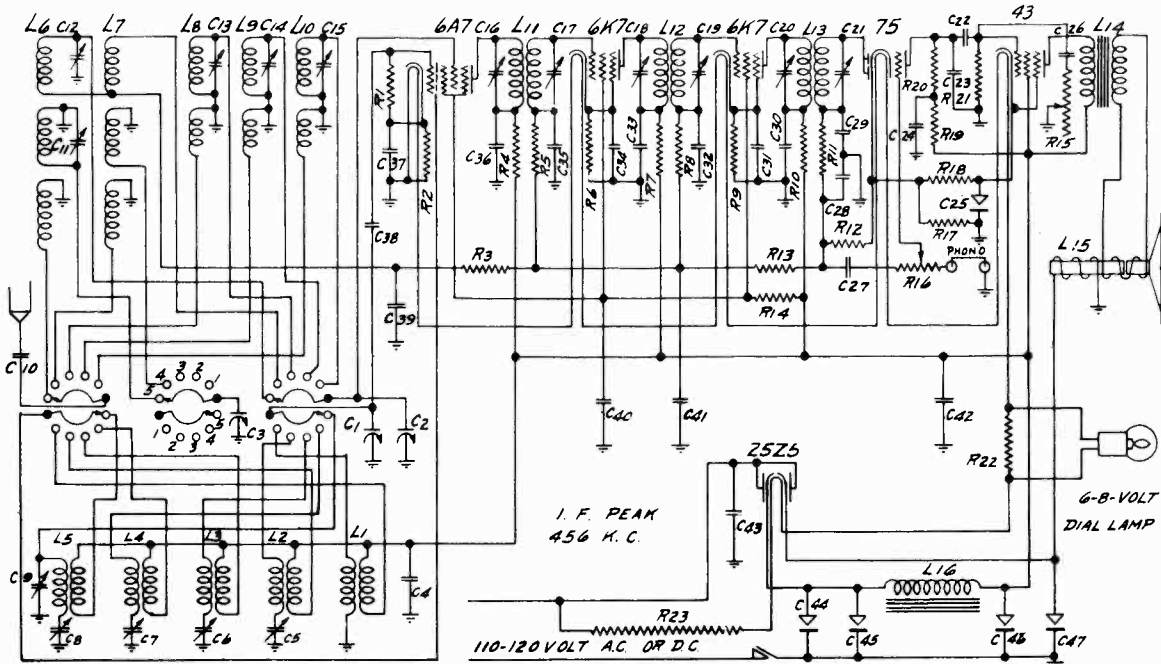


MODEL D 11

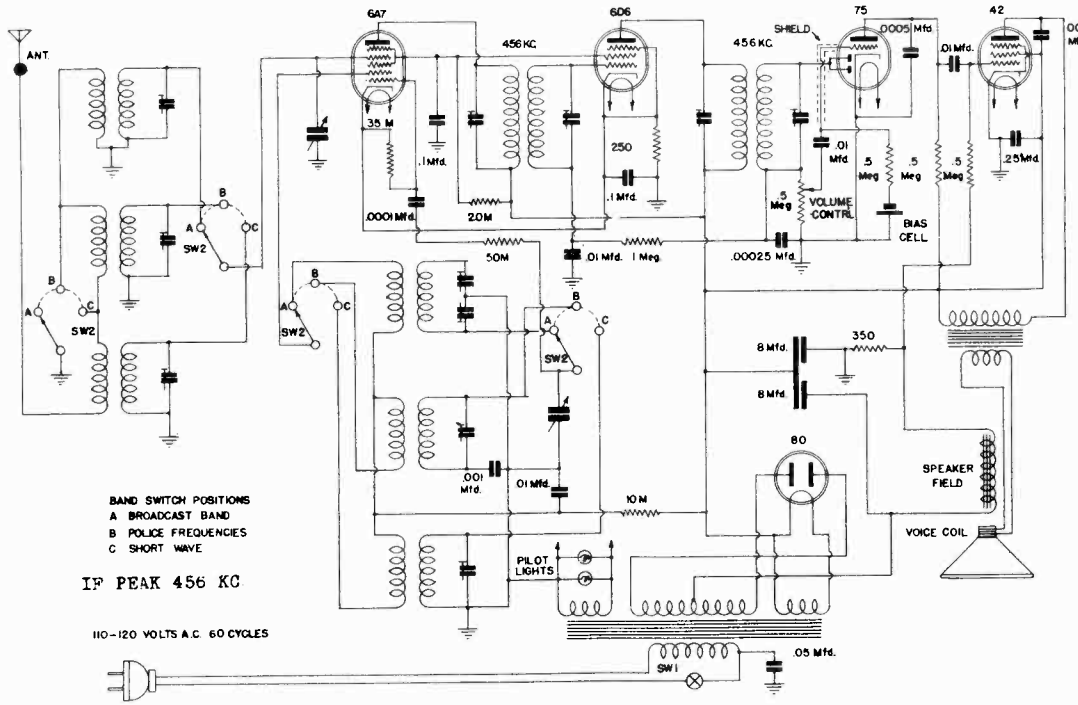


MODEL A18
MODEL C25
Schematics

LAFAYETTE RADIO MFG. CO.



LAFAYETTE MODEL A-18
6 TUBE 5 BAND SUPERHET RECEIVER
LAFAYETTE RADIO MFG. CO.
100 SIXTH AVE., NEW YORK, N.Y.
1-30-35

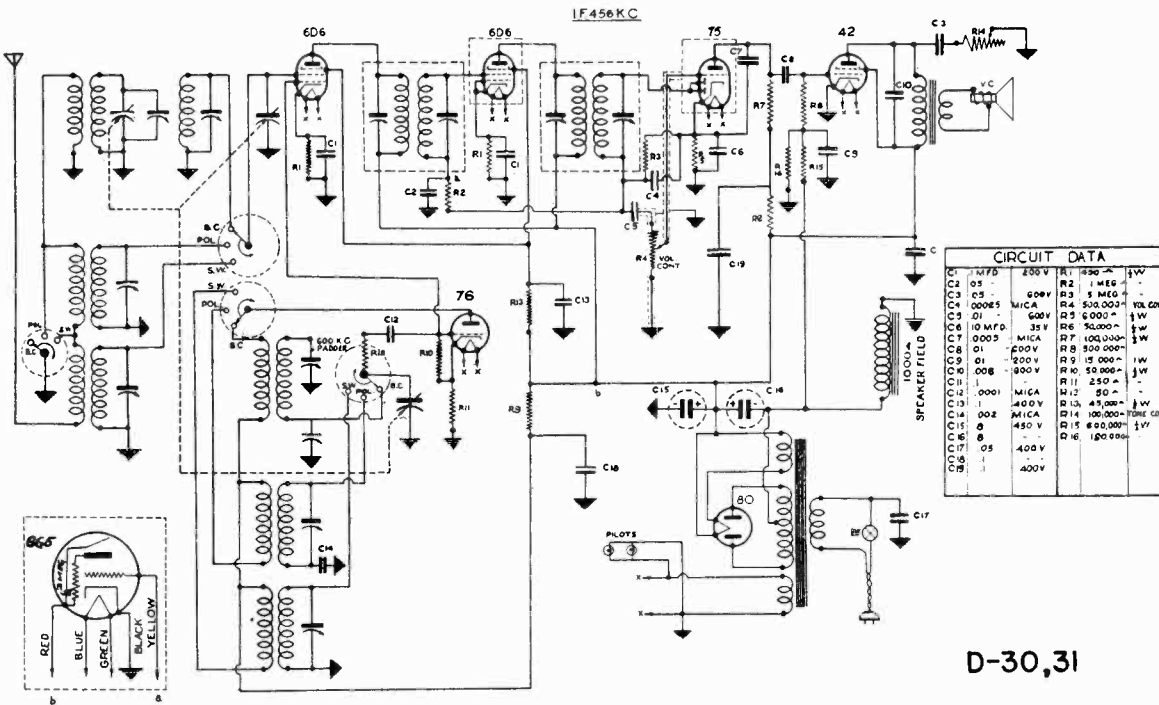


BAND SWITCH POSITIONS
A BROADCAST BAND
B POLICE FREQUENCIES
C SHORT WAVE
IF PEAK 456 KC
110-120 VOLTS A.C. 60 CYCLES

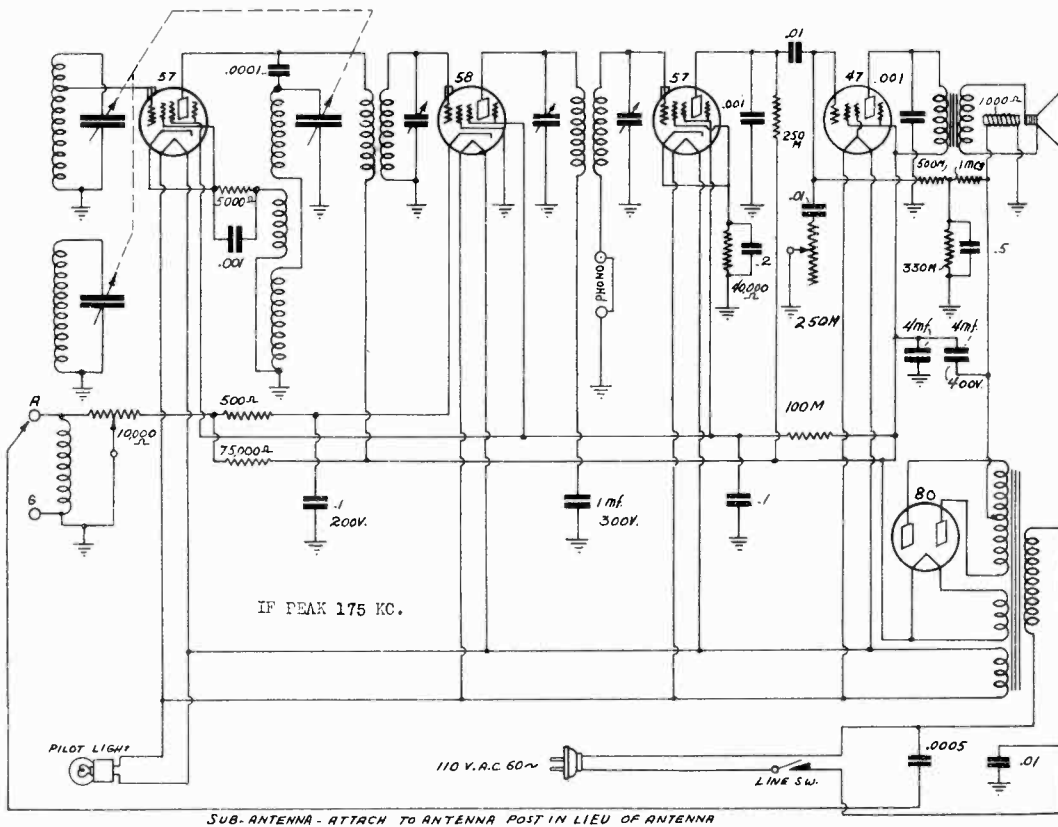
Lafayette Radio Receiver Model C25
5 Tube - 3 Band Superhet
DATE July 8, 1935
DRAWN BY G.H.M.
CHECKED BY
PRINT No.

MODELS D30, D31
 MODEL M31(1935)
 Schematics

LAFAYETTE RADIO MFG. CO.



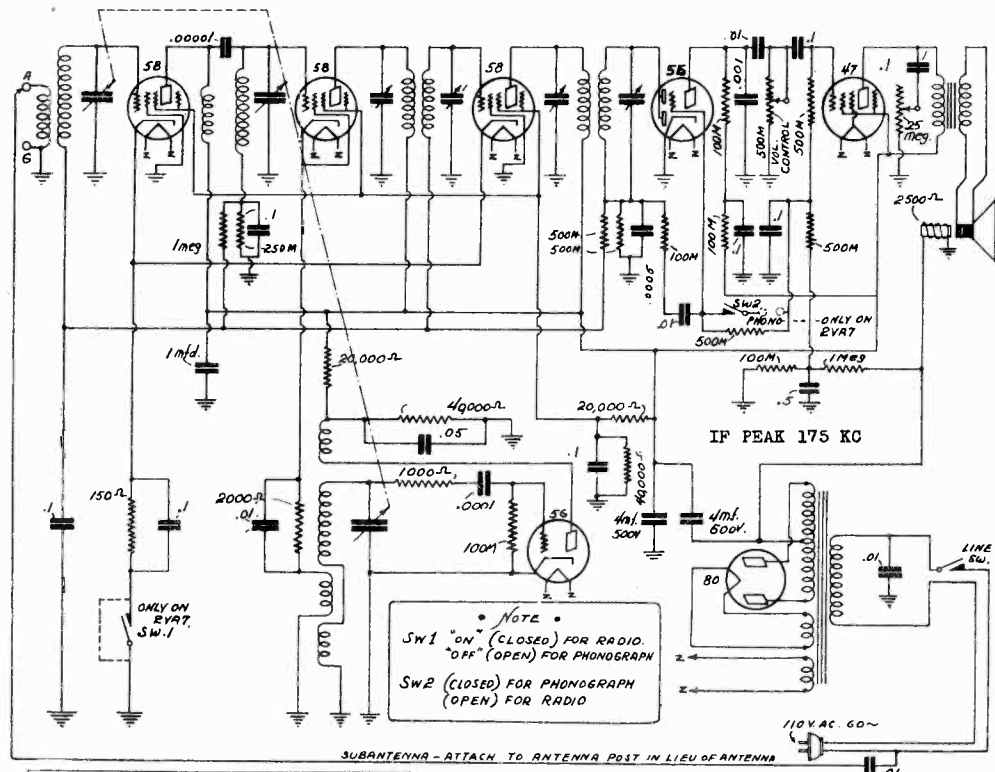
D-30,31



MODEL M-31
 Date: Sept. 18/1935
 Drawn by: LAR
 Checked by: No. 510

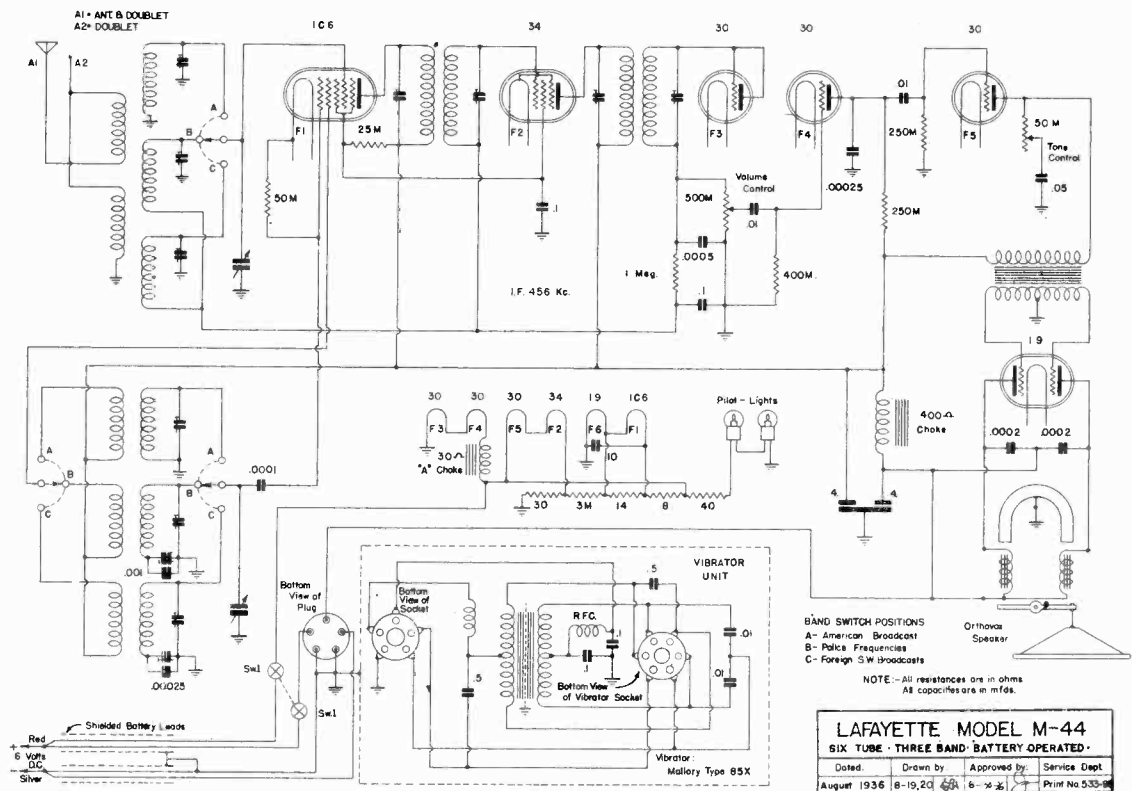
LAFAYETTE RADIO MFG. CO.

MODEL M37
MODEL M44
Schematics



Date Sept 18th 1935
Drawn by *UP*
Print
Checked by *N^o 511*

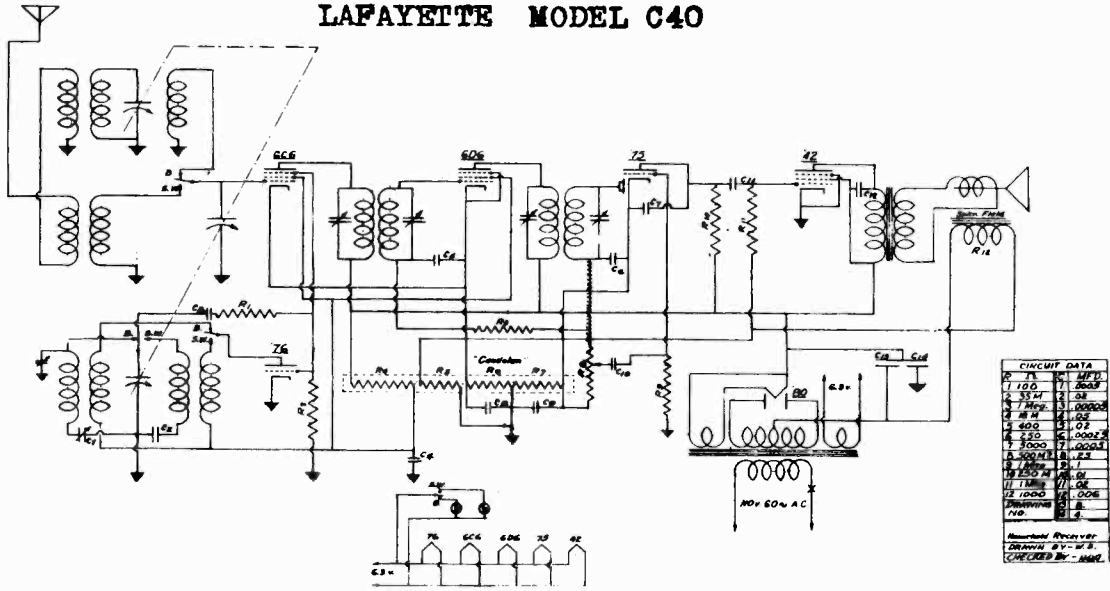
MODEL M-37



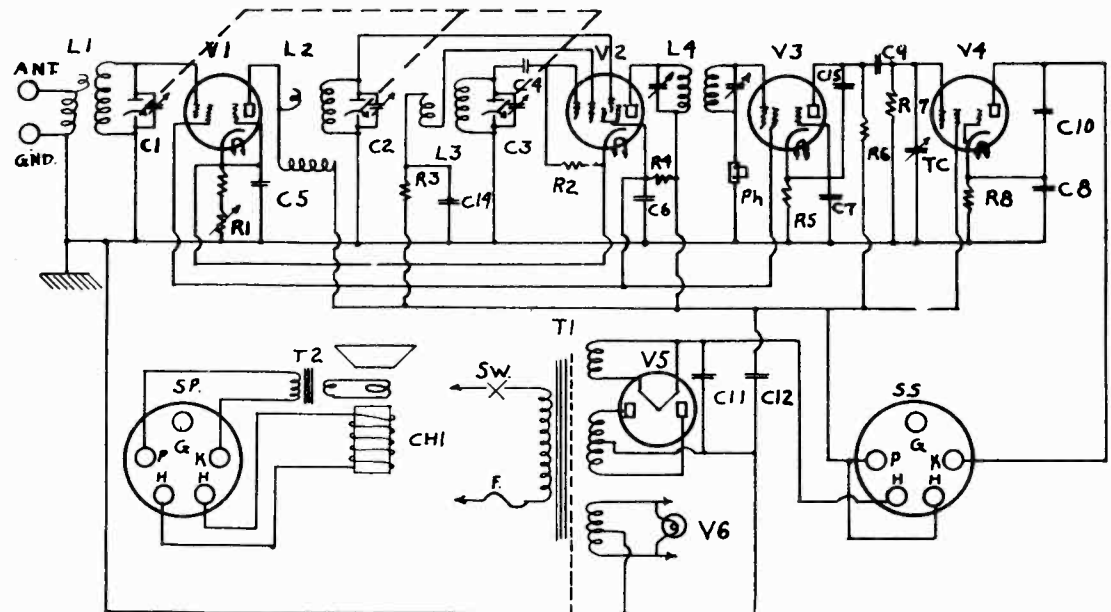
MODEL C40
MODEL SL45
Schematics
Alignment

LAFAYETTE RADIO MFG. CO.

LAFAYETTE MODEL C40



LAFAYETTE MODEL SL45

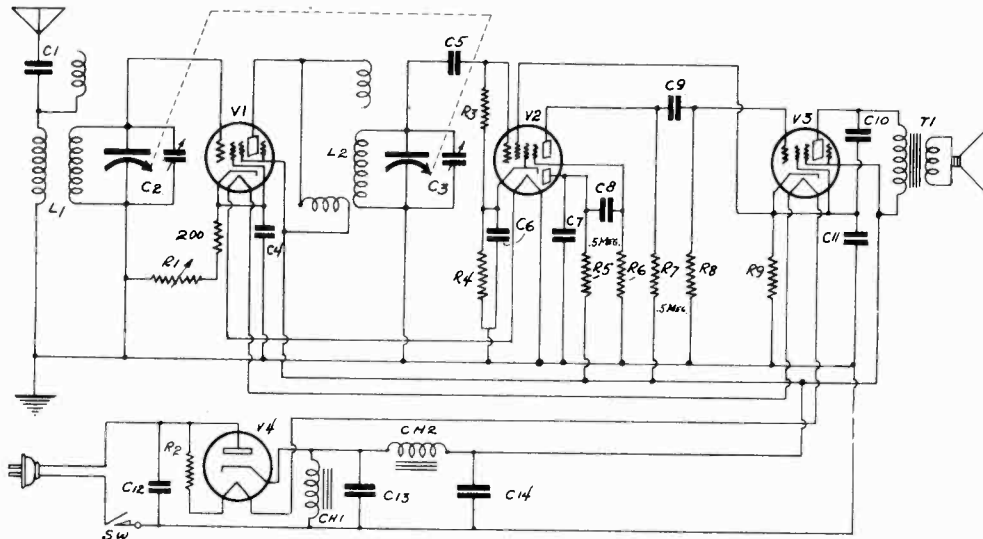


- V1—58 Tube
- V2—5A7 Tube
- V3—57 Tube
- V4—2A5 Tube
- V5—80 Tube
- V6—2.5 V. Pilot Light
- C1—2—365 Mmfd. Var. Cond.
- C3—175 K.C. oscillator section
- C4—.00025 Mfd.
- C5—6-14—.05 Mfd.
- C7—8-11—10 Mfd.
- C9—.01 Mfd.
- C10—.006 Mfd.
- C12—6 Mfd.
- C15—.0005 Mfd.
- L1—Antennae Coil
- L2—R.F. Coil
- L3—Oscillator Coil
- L4—I.F. 175 K.C. Coil
- R1—4M Vol. con. 190-Ohm min. with switch
- R2—50M Resistor
- R3—10M Resistor
- R4—50M Resistor
- R5—10M Resistor
- R6—250M Resistor
- R7—250 M Resistor
- R8—410 Ohms Resistor
- PH.—Phono
- TC.—Tone Control
- T1—Power Trans.
- T2—Audio Trans.
- CHI—Speaker Field
- SW—Switch on Vol. Control
- SS.—Speaker Socket
- SP.—Speaker Plug

To align receiver—Short C3—apply 175 K.C. to grid of V2 and adjust L4 with R1 fully on—remove short on C3—Tune in 1500 K.C. signal and adjust Trimmer on C3 to 11.5 on dial—adjust trimmers on C1 and C2.

LAFAYETTE RADIO MFG. CO.

MODEL S-L71
MODEL R71
Schematics

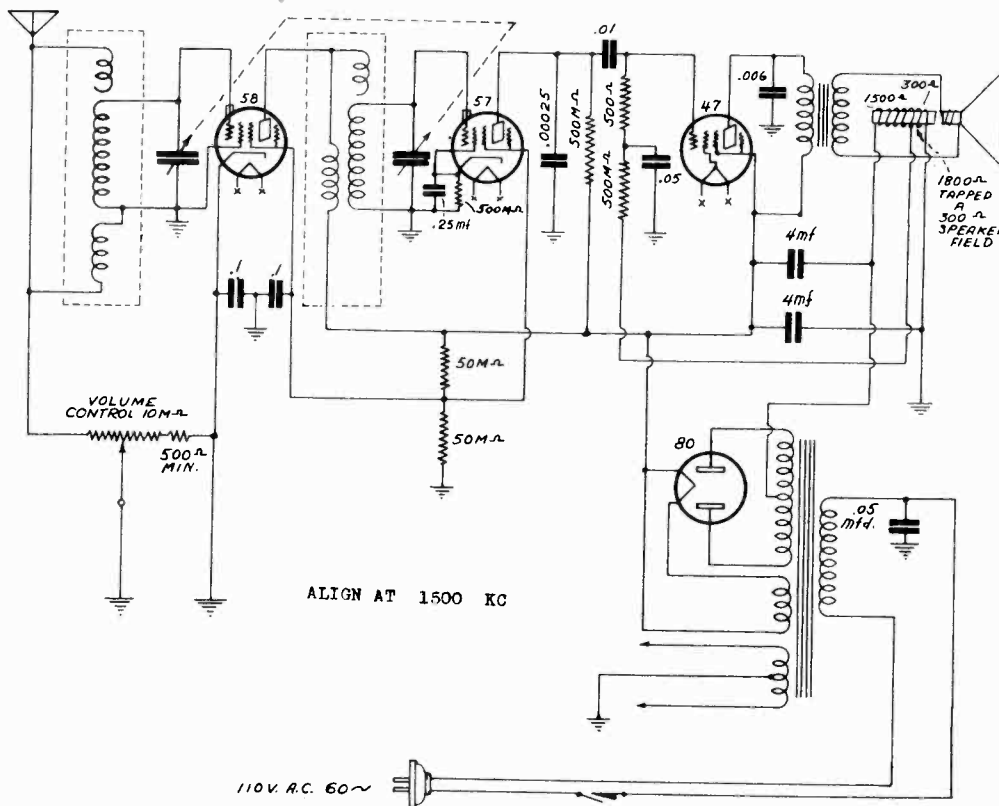


V1	78 TUBE	C6-11	10 mfd. COND'S.	R6-8	1 Meg. RESISTOR
V2	6-F-7 TUBE	C7	.0003 mfd. COND. IN	R-9	700 ohm RESISTOR
V3	43 TUBE	C8-9-10	.01 mfd. COND'S. ONE	L-1	ANTENNA COIL
V4	12-2-3 TUBE	C-13	12 mfd. COND. 4 BLOCK	L-2	R-F COIL
C-1	.002 mfd. COND.	C-14	8 mfd. COND. 2	CH1	3000 ohm SPEAKER FIELD
C2-3	365 mf. VAR. COND.	R-1	200 ohm VOL. CONTROL	CH2	200 ohm CHOKE
C4-12	.05 mfd. COND.	R-2	230 ohms. IN LINE CORD.	T-1	SPEAKER TRANSFORMER
C-5	.00005 mfd. COND.	R-3	2 Meg. RESISTOR	SW	SWITCH ON VOL. CONTROL
		R-4	5M ohm RESISTOR		

To Align the Receiver :- Uncoil Antenna wire and adjust trimmers at any high frequency station preferably 1500 k.c.

TRUTEST MODEL S-L-71

Date
Sept 19 1935
Drawn by LFC
Checked by
Print
No. 509



ALIGN AT 1500 KC

110V. A.C. 60~

Lafayette 4-Tube Treasure Chest Model R-71

Date
Oct. 2. 1935
Drawn by LFC
Checked by
Print
No.

MODELS B97-98
 Socket, Trimmers
 Coils, Phono

LAFAYETTE RADIO MFG. CO.

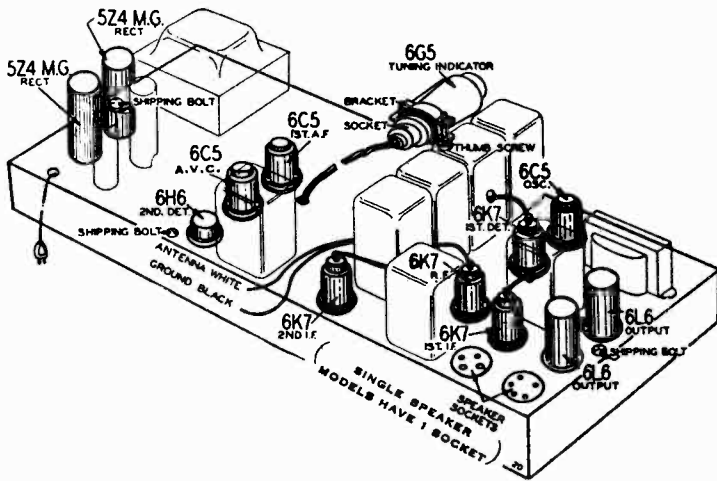


Fig. 5—Location of Tubes

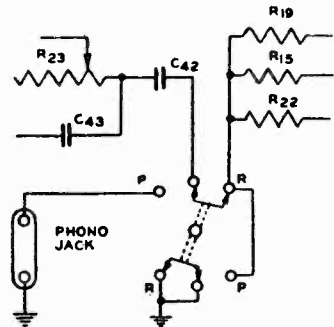


Fig. 7—Phonograph Connections

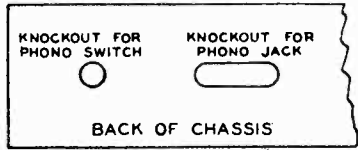


Fig. 8—Location of Phono Knockouts

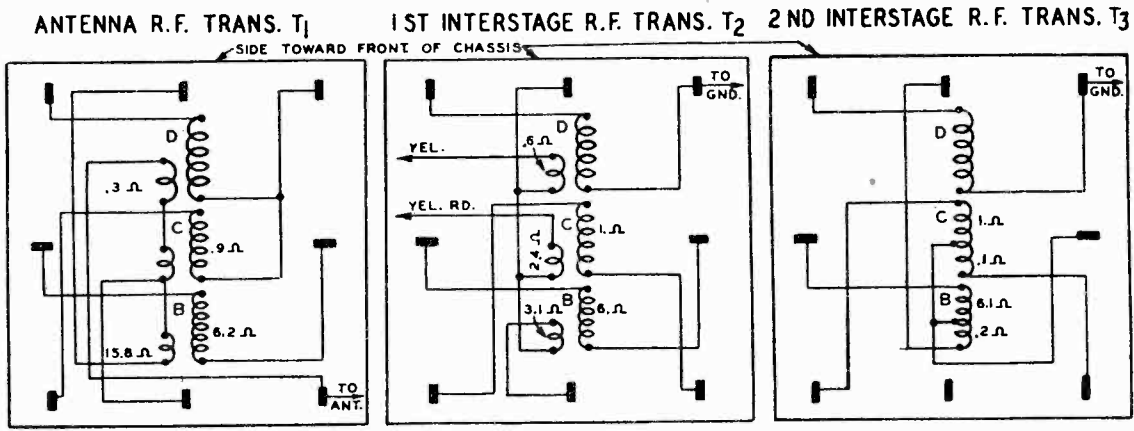


Fig. 6—R.F. and Oscillator Coil Base Terminal Arrangement and D.C. Resistance of Windings

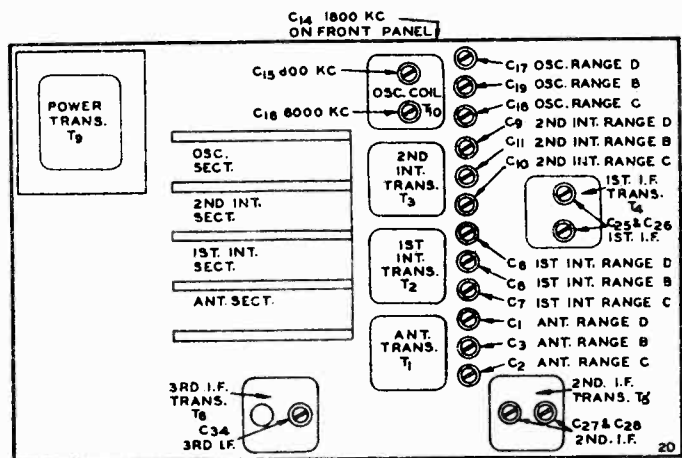
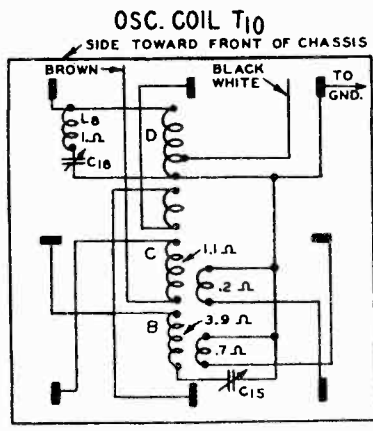
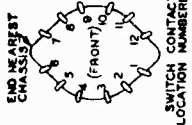
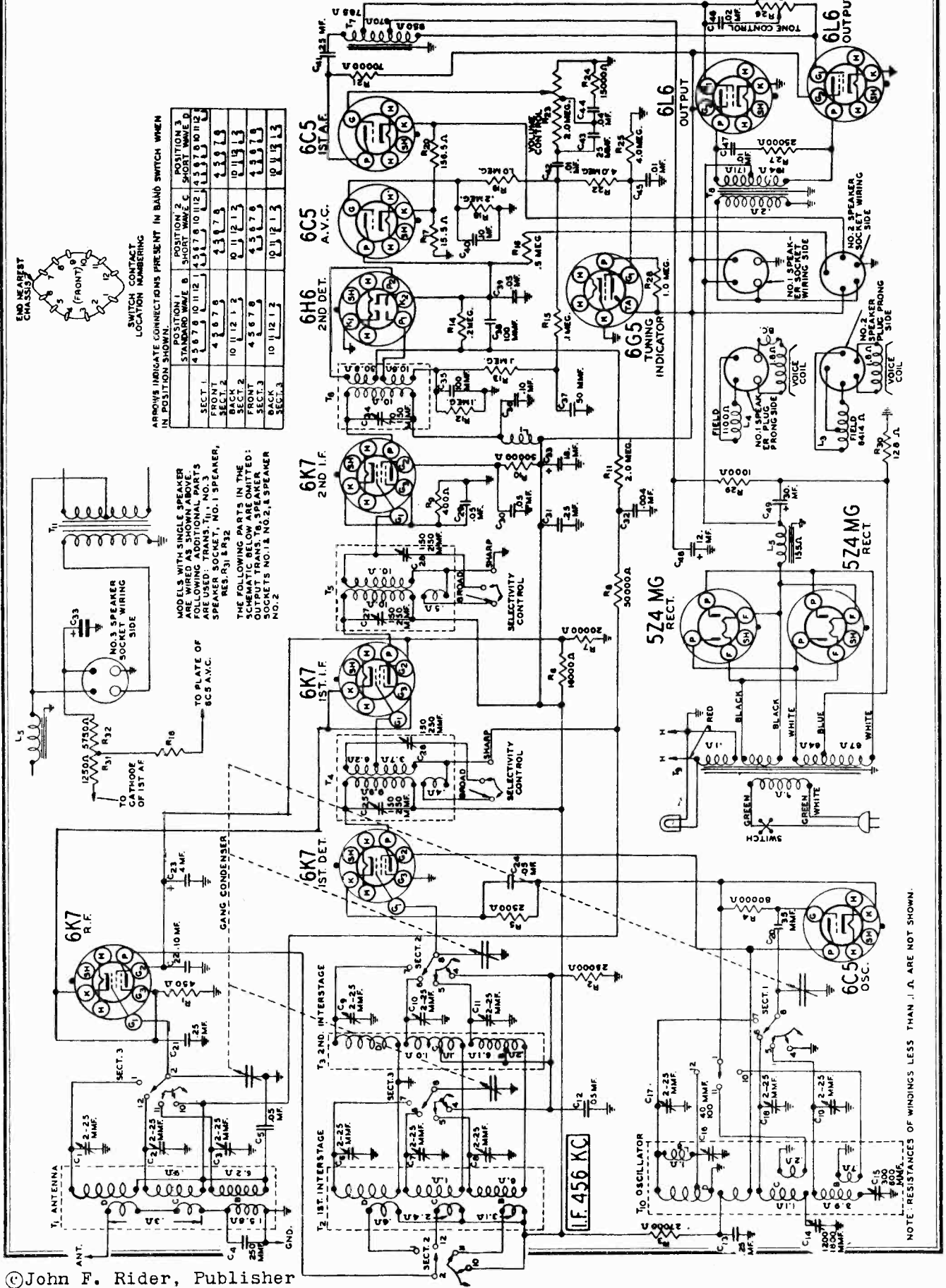


Fig. 3—Location of Trimmers

LAFAYETTE RADIO MFG. CO.

MODELS B97-98
Schematic

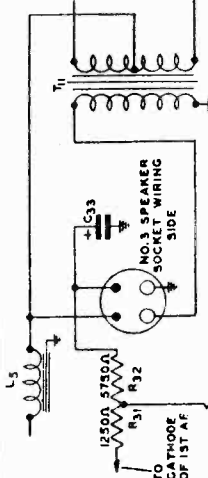


ARROWS INDICATE CONNECTIONS PRESENT IN BAND SWITCH WHEN IN POSITION SHOWN.

POSITION	LONG	SHORT	POSITION
STANDARD WAVE	B	C	SHORT
4 5 6 7 8	10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
FRONT SECT. 1	4 5 6 7 8	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
FRONT SECT. 2	10 11 12 1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
FRONT SECT. 3	4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
BACK SECT. 1	10 11 12 1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
BACK SECT. 2	10 11 12 1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
BACK SECT. 3	10 11 12 1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12

MODELS WITH SINGLE SPEAKER ARE WIRED AS SHOWN. PARTS ARE USED: TRANS. T.1, NO. 3 SPEAKER SOCKET, NO. 1 SPEAKER, RES. R.31, R.32

THE FOLLOWING PARTS IN THE SCHEMATIC BELOW ARE OMITTED: OUTPUT TRANS. T.6, SPEAKER SOCKETS NO. 1 & NO. 2, SPEAKER NO. 2



NOTE: RESISTANCES OF WINDINGS LESS THAN .1 A. ARE NOT SHOWN.

MODELS B97-98

Alignment
Voltage
Notes

LAFAYETTE RADIO MFG. CO.

Phonograph Connections

Phonograph connections can be made as shown in Fig. 7. The parts required are shown in the parts list. Knockouts are provided in the back of the chassis for mounting the phono jack and phono switch—See Fig. 8.

The phono switch should be mounted with one set of terminals nearest the bottom of the chassis base.

The connections are made by opening the diode return circuit at the volume control. This is done by removing the wire connecting condenser C42 to resistors R15, R19 and R22 at the terminal strip located near the back of the planetary drive. Cut this wire to correct length and solder it to the proper terminal on the phono switch—See Fig. 7, keeping the wire close to the back of the chassis base.

A wire is then connected from the lug on the above mentioned terminal strip to which C42 was connected, to the correct terminal on the phono switch—See Fig. 7. This wire should be brought directly to the back of the chassis at a point close to the phono jack pin tip nearest the channel provided for a chassis mounting bolt, and then routed over to the switch.

Complete the other connections as illustrated in Fig. 7.

It will be necessary to re-route the AC line cord away from the 6C5 1st audio grid lead by running it between the volume control and the filter choke and then straight back to the hole provided for it in the chassis base.

If a hum is heard when the phono pickup is touched, reverse the two pickup leads.

Twenty-five Cycle Models

The twenty-five cycle receiver differs from the sixty cycle receiver only in the fact that a different power transformer is used. The correct power transformer is shown in the parts list.

The twenty-five cycle receiver can be operated satisfactorily from a sixty cycle power supply. However, the reverse is not true, the sixty cycle receiver cannot be operated from a twenty-five cycle power supply.

A 115-230 volt, 40 to 60 cycle as well as other power transformers with special power ratings are also available for this model.

Do not change the setting of the oscillator Range D trimmer.

6000 KC Adjustment

Set the signal generator for 6000 KC. Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

Trimmer Replacement

If one trimmer of the gang trimmer set should become defective, it is not necessary to replace the entire strip. A single trimmer P-17A36, as shown in the replacement parts list, may be used. Disconnect the lead from the coil side (side not grounded) of the defective trimmer in the strip. This connection is then made to the single trimmer. Connect it to the side of the trimmer not in contact with the adjusting screw. The other side of the single trimmer is then connected to a good ground, using a piece of heavy wire in order to support the trimmer adequately. In replacing a trimmer, be sure to keep both leads as short as possible and keep the ungrounded lead as far from ground as possible.

Planetary Drive Assembly

The planetary assembly is the unit that is integral with the tuning shaft.

If the nut on the back end of this assembly is too tight, the drive will be jerky and will turn hard in high speed. If this condition exists, back off this nut one or two turns and note the effect.

If this nut is too loose, the drive will slip in slow speed. The remedy in this case, of course, is to tighten the nut.

Should the condenser drive cord slip when the planetary pulley is turning, inspect the timing condenser, drive drum and gears. If they are turning properly or if they are being obstructed in some way.

If the drive turns unevenly (rough in spots), this may mean that the planetary assembly is defective or damaged internally and a new unit will be required.

Range C Alignment

CAUTION—When aligning the short wave bands be sure NOT to adjust at the image frequency. This can be checked as follows: Let us say the signal generator is set for 9000 KC. The signal will then be heard at 9000 KC on the dial of the radio. The image signal, which is much weaker, will be heard at 17000 less 912 KC, or 4088 KC. It may be necessary to increase the input signal to hear the image.

5800 KC Adjustment

Set the signal generator for 5800 KC. Connect the antenna lead of the receiver through a 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band switch to the Range C position (first short wave band).

Adjust the oscillator Range C trimmer (C18) until maximum output is obtained. See Fig. 3 for location of this trimmer.

5000 KC Adjustment

Set the signal generator for 5000 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the 1st and 2nd interstage Range C trimmers (C7 and C10) and antenna Range C trimmer (C3) to maximum.

Do not change the setting of the oscillator Range C trimmer.

1800 KC Adjustment

Set the signal generator for 1800 KC. Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 1800 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

Range D Alignment

18,300 KC Adjustment

Set the signal generator for 18,300 KC. Keep the antenna lead of the receiver connected through the 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band switch to the Range D position (second short wave band).

Adjust the oscillator Range D trimmer (C17) until maximum output is obtained. See Fig. 3 for location of this trimmer.

15,000 KC Adjustment

Set the signal generator for 15,000 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the 1st and 2nd interstage Range D trimmers (C8 and C11) and antenna Range D trimmer (C1) to maximum.

When adjusting the 2nd interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.

F. F. Adjustment

Set the signal generator for a signal of 436 KC. Connect the output of the signal generator through a 1 mfd. condenser to the grid of the 1st detector. Connect the ground lead of the receiver to the ground post of the signal generator.

Turn the band switch to the Range B position (standard wave band).

Turn the selectivity control to the sharp position and keep it in this position for all adjustments.

Turn the volume control to the maximum position. Attenuate the signal from the signal generator to prevent the leveling off action of the AVC.

Then adjust the two I.F. trimmers until maximum output is obtained by adjusting screws for these condensers are reached from the top of the chassis and the location is shown in Fig. 3.

Range B Alignment

After the procedure for the alignment of each range, as explained below, is completed, it is advisable to repeat the procedure as a final check.

1730 KC Adjustment

Set the signal generator for 1730 KC. Turn the rotor of the tuning condenser to the full open position.

Keep the band switch in the standard wave position.

Connect the antenna lead of the receiver through a 200 mfd. condenser to the output of the signal generator.

For this and all subsequent adjustments keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent AVC action.

Adjust the oscillator Range B trimmer (C19) until maximum output is obtained. The location of this trimmer is shown in Fig. 3.

1500 KC Adjustment

Set the signal generator for 1500 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

In sets using pointers, loosen the screw of the large pointer and set the pointer at the 1500 KC mark on the standard wave band scale. Retighten the screw.

In sets using the moving beam of light, there is moving light assembly held to the front of the drive drum by means of a screw. Loosen this screw and move the light assembly until it is at the 1500 KC mark on the dial. Retighten the screw.

Adjust the 1st and 2nd interstage Range B trimmers (C8 and C11), and antenna Range B trimmer (C1) to maximum.

Do not change the setting of the oscillator Range B trimmer.

600 KC Adjustment

Set the signal generator for 600 KC. Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 600 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

TUBE	FUNCTION	VOLTAGE BETWEEN SOCKET PRONGS AND GROUND (Values in parentheses indicated)				Antenna Shorted to Ground		
		Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	
4K7	R.F.	0	4.2(0)	250	110	7.5(0)	4.2(0)	7.8(0)
4K7	1st Det.	0	4.2(0)	250	110		4.2(0)	9.0
4C5	Onk.	0	4.2(0)	110			4.2(0)	7.8(0)
4K7	1st I.F.	0	4.2(0)	250	110	7.5	4.2(0)	7.8(0)
4K7	2nd I.F.	0	4.2(0)	250	148	8(0)	4.2(0)	8.0
4K4	2nd Det.	0	4.2(0)				4.2(0)	
4C5	A.V.C.	0	4.2(0)				4.2(0)	0.8
4C5	1st A.F.	0	4.2(0)	130			4.2(0)	6.0
4A4	Power	0	4.2(0)	350	250	30(0)	4.2(0)	6.0
5Z4A6	Rectifier	0	5.0(3)		102(0)		102(0)	5.0(0)
445	Tuning Indicator	Plate to Ground 25(0)	Target to Ground 150	Control to Ground 0	Antenna Heater 0	Antenna Heater 0	Antenna Heater 0	5.0(0)

(1) A.C. voltage at read across heater terminals 2 and 7.
 (2) Subject to variation.
 (3) A.C. voltage at read across heater terminals 2 and 8.
 (4) A.C. voltage at read across heater terminals 4 and 4.