THE FISK AWA RADIOLA

Models 505, 95, 603 and 315

FIVE VALVE, ONE BAND (505) AND TWO BAND (95, 603, 315), A.C. OPERATED SUPERHETERODYNES

Technical Information & Service Data

ELECTRICAL SPECIFICATIONS

TUNING RANGES.

"Short Wave"—13.6-43 M.
"Standard Medium Wave"—1600-550 K.C.

R.F. ALIGNMENT SETTINGS.

"Standard Medium Wave"—600 K.C. (Osc.), 1500 K.C. (Osc. & Aer.)
"Short Wave"—15 M. (Osc. & Aer.)

INTERMEDIATE FREQUENCY ..... 455 K.C.

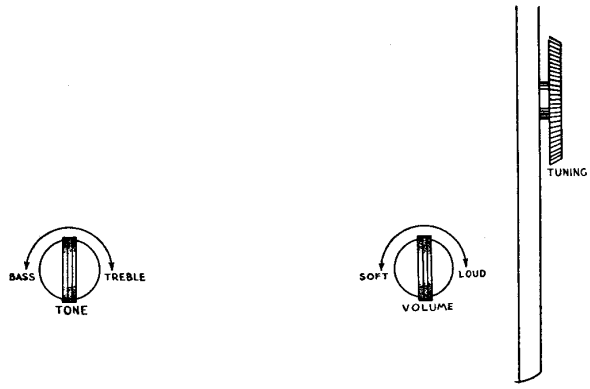
POWER SUPPLY RATING ..... 200-260 Volts A.C., 50-60 cycles.
(Instruments available with other voltage and frequency ratings.)

POWER CONSUMPTION ..... 75 Watts

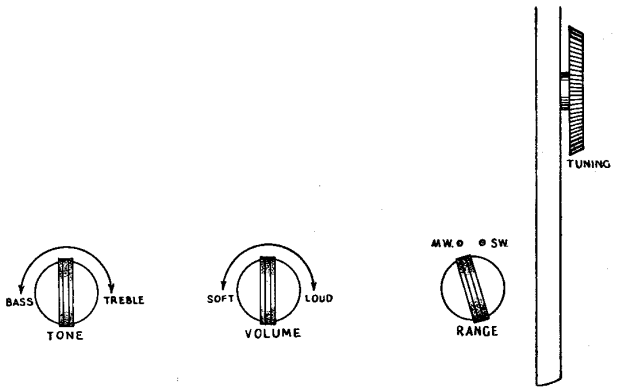
VALVE COMPLEMENT.

6J8G Converter.
6U7G I.F. Amplifier.
6B6G Detector, A.V.C. and A.F. Amplifier.
6V6G Output.
5Y3G Rectifier.

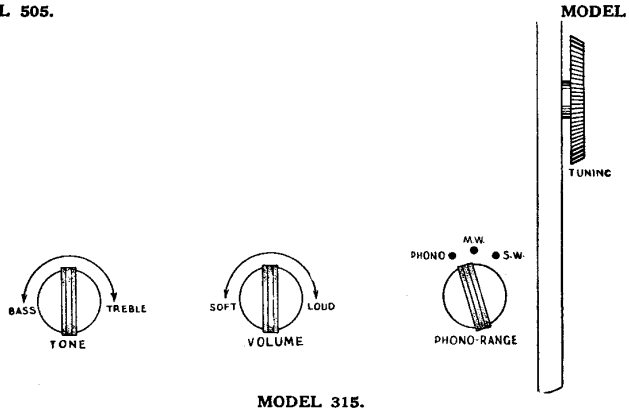
CONTROLS.



MODEL 505.



MODEL 95-603.



MODEL 315.

LOUDSPEAKER.

MODELS 505, 603 & 315.		MODEL 95.	
Type AS13	12 inch	Type AW11	7 inch
Transformer	TX20	Transformer	XA1.
Field Coil Resistance	1500 ohms	Field Coil Resistance	1500 ohms
Voice Coil Impedance	2.2 ohms at 400 cycles	Voice Coil Impedance	3 ohms at 400 cycles

UNDISTORTED POWER OUTPUT ..... 4.2 Watts.

DIAL LAMPS ..... 6.3V., .25 Amp.

ALIGNMENT PROCEDURE.

Alignment should be necessary only when adjustments have been altered from the factory setting or when repairs have been made to the tuned circuits. Climatic conditions should not seriously affect the Receiver.

It is important to apply a definite procedure, as given in this booklet, and to use adequate and reliable test equipment. Instruments ideally suited to the requirements are either the A.W.A. Junior Signal Generator, Type 2R3911, or the A.W.A. Modulated Oscillators, Types J6726 and C1070. If either of the latter instruments is used, see that a 250,000 ohms resistor is connected between the output terminals of the instrument, and for Short Wave alignment, a 400 ohms non-inductive resistor in series with the "hot" output lead of the instrument.

Perform alignment in the proper order as shown in the chart, starting from No. 1, and following all operations across, then No. 2, etc. Adjustment locations are shown in the layout diagrams.

Keep the Volume Control set in the maximum clockwise position, and regulate the output of the test instrument so that a minimum signal is introduced to the Receiver to give a standard indication on the output meter. This will avoid A.V.C. action and overloading.

When the Receiver has been satisfactorily aligned, seal the adjusting screws with a small quantity of celluloid cement to eliminate the possibility of their shifting.

ALIGNMENT TABLE

Alignment Order	Test Inst. Connection to Receiver	Test Inst. Setting	Receiver Dial Setting	Circuit to Adjust	Adjust for Max. Peak Output		
					505	95-603	315
1.	*6J8G Grid Cap	455 K.C.	With Gang Closed	2nd I.F. Trans.	L9	L12	L13
2.	*6J8G Grid Cap	455 K.C.	With Gang Closed	2nd I.F. Trans.	L8	L11	L12
3.	*6J8G Grid Cap	455 K.C.	With Gang Closed	1st I.F. Trans.	L7	L10	L11
4.	*6J8G Grid Cap	455 K.C.	With Gang Closed	1st I.F. Trans.	L6	L9	L10
		Repeat adjustments 1, 2, 3 and 4.					
5.	Aerial	600 K.C.	†600 K.C. (7ZL)	Oscillator	Core L5	Core L6	Core L7
6.	Aerial	1500 K.C.	1500 K.C. (3AK)	Oscillator	C6	C6	C6
7.	Aerial	1500 K.C.	1500 K.C. (3AK)	Aerial	C2	C2	C3
		Repeat adjustments 5, 6 and 7.					
8.	Aerial	15 M.	15 M.	Oscillator	—	C8	C7**
9.	Aerial	15 M.	15 M.	Aerial	—	C3	C4***‡

*With grid clip connected. A .001 mfd condenser should be connected in series with the active output lead of the test instrument.

†Rock the Tuning Control back and forth through the signal.

**Use minimum capacity peak if two peaks can be obtained.

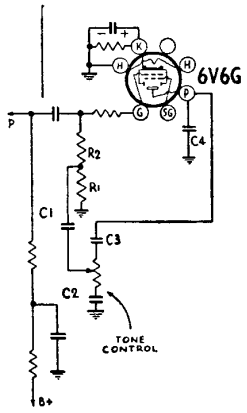
***Use maximum capacity peak if two peaks can be obtained.

‡Tune for image signal by tuning the Receiver to approx. 16 M. It should be necessary to increase the output of the Test Instrument to receive the signal.

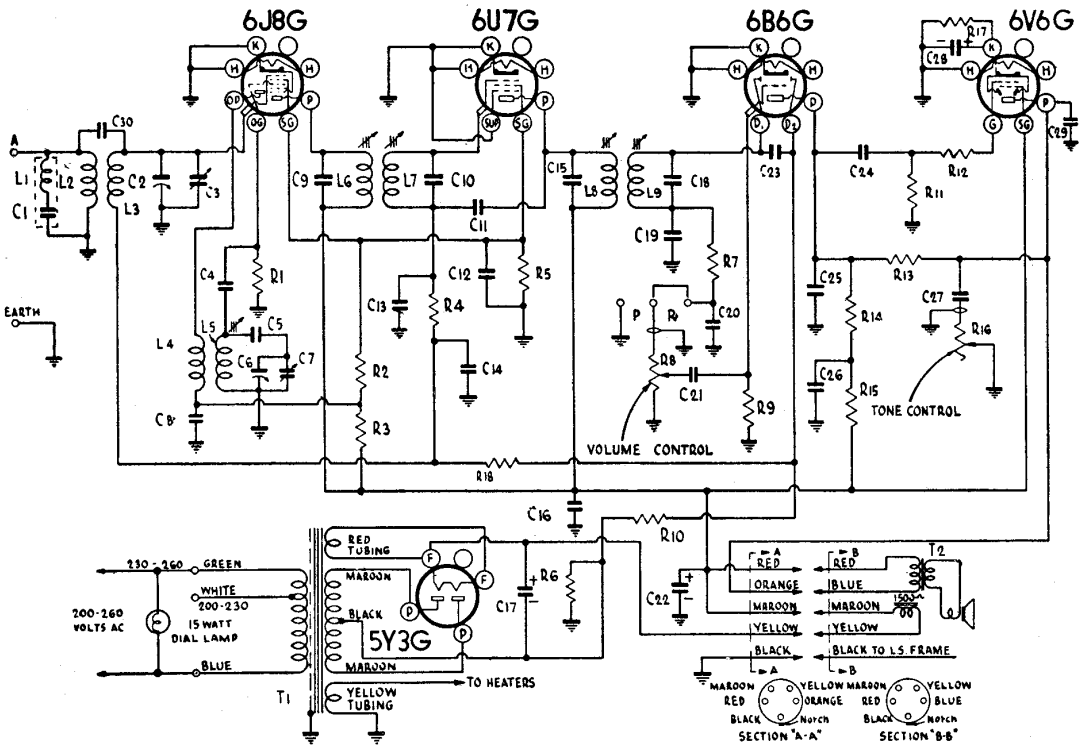
CIRCUIT MODIFICATION.

A modification to the Tone Control circuit which took effect from 4/4/41, was made to the Radiolas concerned in this booklet. The circuit diagrams shown are those used in the first production period and the accompanying diagram shows the circuit arrangement adopted after the above date. The components not coded in the diagram were not affected by the change.

R1	100,000 ohms 1/3 watt
R2	390,000 ohms 1/3 watt
C1	1500 mmfd Mica
C2	.005 mfd Paper
C3	.05 mfd Paper
C4	.0025 mfd



CIRCUIT DIAGRAM AND CODE—MODEL 505



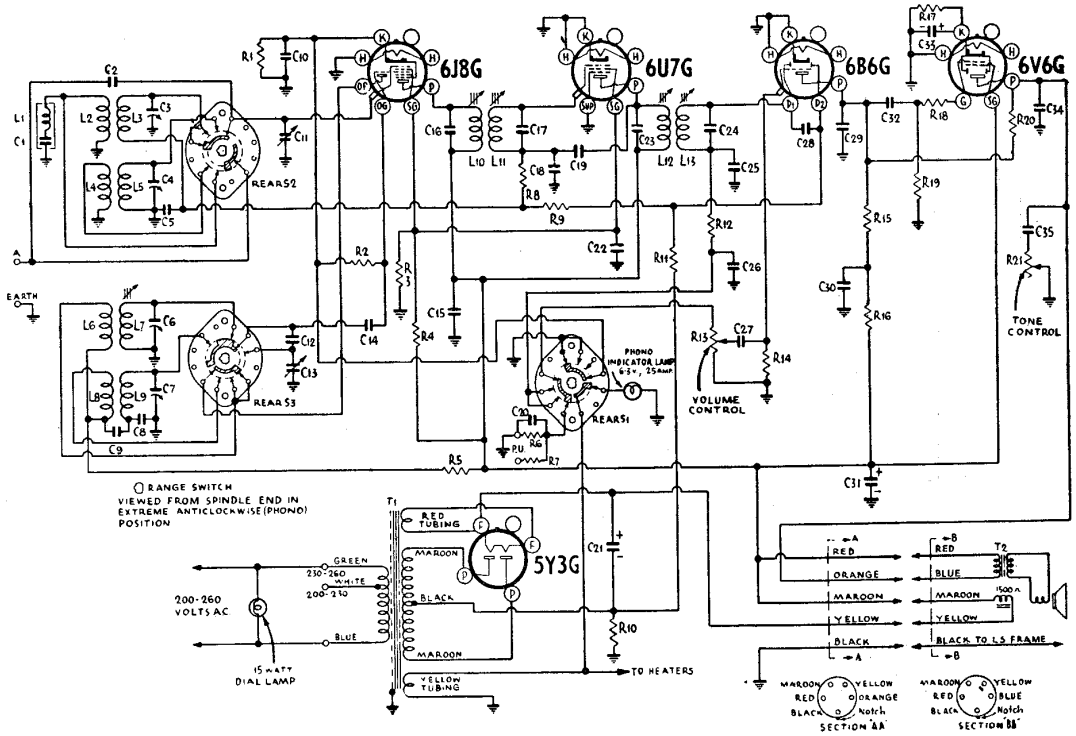
Code No.	Part No.	COILS.
L1, C1	9382	Filter Unit
L2, 3	7974	Aerial Coil 1600-550 K.C.
L4, 5	9206	Osc. Coil 1600-550 K.C.
L6, 7	8286Z	1st I.F. Transformer
L8, 9	8287Z	2nd I.F. Transformer
		TRANSFORMERS.
T1	7979A	Power Trans. 50-60 c.
	7981A	Power Trans. 40 c.
T2	TX20	Speaker Trans.

Code No.	Part No.	RESISTORS.
R1		50,000 ohms 1/3 watt
R2		8,000 ohms 1 watt
R3		6,000 ohms 2 watt
R4		100,000 ohms 1/3 watt
R5		20,000 ohms 1 watt
R6		40 ohms 3 watt
R7		50,000 ohms 1/3 watt
R8	8952	500,000 ohms Vol. Cont.
R9		10 meg. 1 watt
R10		2.3 meg. 1/3 watt
R11*		300,000 ohms 1/3 watt
R12		50,000 ohms 1/3 watt
R13*		1.75 megohms 1/3 watt
R14		250,000 ohms 1 watt
R15		20,000 ohms 1 watt
R16	9820	100,000 ohms Tone Cont.
R17		250 ohms 3 watt
R18		1.75 meg. 1/3 watt

Code No.	Part No.	CONDENSERS.
C1		50 mmfd Silvered Mica
C2	3661	2-20 mmfd Air Trimmer
C3	9228	Tuning Condenser
C4		70 mmfd Mica (N)
C5		490 mmfd Mica (Padder)
C6		3411 11-29 mmfd Air Trimmer
C7	9228	Tuning Condenser
C8		.05 mfd Paper
C9		70 mmfd Silvered Mica (N)
C10		70 mmfd Silvered Mica (N)
C11		4 mmfd Mica
C12		.1 mfd Paper
C13		.01 mfd Paper
C14		.05 mfd Paper
C15		70 mmfd Silvered Mica (N)
C16		.1 mfd Paper
C17		16 mfd 525 P.V. Electro.
C18		70 mmfd Silvered Mica (N)
C19		110 mmfd Mica (L)
C20		110 mmfd Mica (L)
C21		.01 mfd Paper
C22		16 mfd 350 V. Reg. Electro.
C23		50 mmfd Mica (D)
C24		.02 mfd Paper
C25		200 mmfd Mica (J)
C26		.5 mfd Paper
C27*		.1 mfd Paper
C28		25 mfd 25 volt Electro.
C29		.0025 mfd Paper

*** See Circuit Modification.**

CIRCUIT DIAGRAM AND CODE—MODEL 315



Code No.	Part No.	COILS.
L1, C1	9382	Filter Unit
L2, 3	7974	Aerial Coil 1600-550 K.C.
L4, 5	9569	Aerial Coil 13.6-43 M.
L6, 7	9206	Osc. Coil 1600-550 K.C.
L8, 9	9205	Osc. Coil 13.6-43 M.
L10, 11	8286Z	1st I.F. Transformer
L12, 13	8287Z	2nd I.F. Transformer

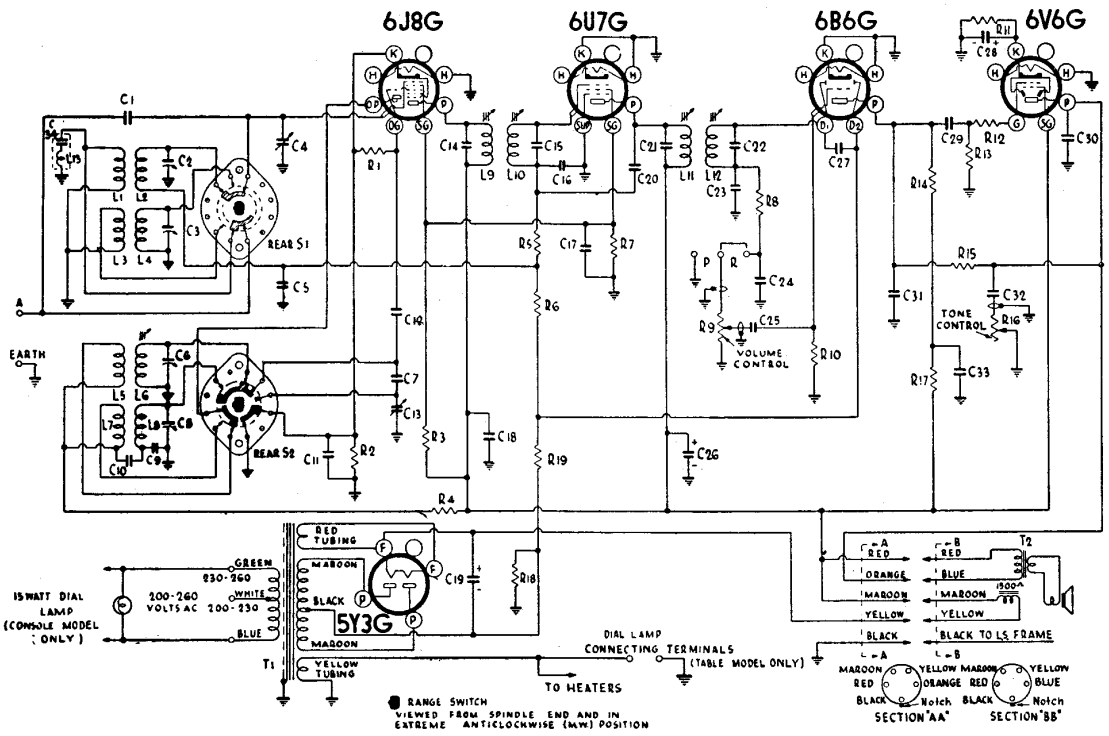
		TRANSFORMERS
T1	7979	Power Trans. 50-60c.
T1	7981	Power Transf. 40c.
T2	TX20	Loudspeaker Trans.

Code No.	Part No.	RESISTORS.
R1		350 ohms 1/3 watt
R2		50,000 ohms 1/3 watt
R3		20,000 ohms 1 watt
R4		25,000 ohms 2 watt
R5		25,000 ohms 1 watt
R6		50,000 ohms 1/3 watt
R7		20,000 ohms 1/3 watt
R8		100,000 ohms 1/3 watt
R9		1.75 meg. 1/3 watt
R10		40 ohms 3 watt
R11		2.3 meg. 1/3 watt
R12		50,000 ohms 1/3 watt
R13	8952	500,000 ohms Vol. Control
R14		10 meg. 1 watt
R15		250,000 ohms 1 watt
R16		20,000 ohms 1 watt
R17		250 ohms 3 watt
R18		50,000 ohms 1/3 watt
R19*		300,000 ohms 1/3 watt
R20*		1.75 megohms 1/3 watt
R21	9820	100,000 ohms Tone Cont.

Code No.	Part No.	CONDENSERS.
C1		50 mmfd Silvered Mica
C2		4 mmfd Mica
C3	3661	2-20 mmfd Air Trimmer
C4	5435	6-24 mmfd Air Trimmer
C5		.05 mfd Paper
C6	3411	11-29 mmfd Air Trimmer
C7	3658	2-10 mmfd Air Trimmer
C8		4000 mmfd Mica (Padder)
C9		.05 mfd Paper
C10		.1 mfd Paper
C11	9728	Tuning Condenser
C12		490 mmfd Mica (Padder)
C13	9728	Tuning Condenser
C14		70 mmfd Mica (N)
C15		.1 mfd Paper
C16		70 mmfd Silvered Mica
C17		70 mmfd Silvered Mica
C18		.01 mfd Paper
C19		4 mmfd Mica
C20		.01 mfd Paper
C21		16 mfd 525 V. Electro.
C22		.1 mfd Paper
C23		70 mmfd Silvered Mica
C24		70 mmfd Silvered Mica
C25		110 mmfd Mica (L)
C26		110 mmfd Mica (L)
C27		.01 mfd Paper
C28		50 mmfd Mica (D)
C29		200 mmfd Mica (J)
C30		.5 mfd Paper
C31		16 mfd 350 V. Reg. Electro.
C32		.02 mfd Paper
C33		25 mfd 40 V. Electro.
C34		.0025 mfd Paper
C35*		.1 mfd Paper

*** See Circuit Modification.**

CIRCUIT DIAGRAM AND CODE—Models 95 and 603

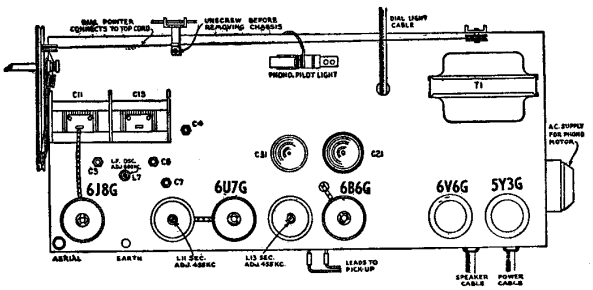


Code No.	Part No.	COILS.
L1, 2	7974	Aerial Coil 1600-550 K.C.
L3, 4	9569	Aerial Coil 13.6-43 M.
L5, 6	9206	Oscillator Coil 1600-550 K.C.
L7, 8	9205	Oscillator Coil 13.6-43 M.
L9, 10	8286Z	1st I.F. Transformer
L11, 12	8287Z	2nd I.F. Transformer
L13, C34	9382	Filter Unit
		TRANSFORMERS.
T1	7979	Power Transformer 50-60 c.
T1	7981	Power Transformer 40c.
T2	XA1/1	Loudspeaker Trans. (Table)
T2	TX20	Loudspeaker Trans. (Console)

Code No.	Part No.	RESISTORS.
R1		50,000 ohms 1/3 watt
R2		350 ohms 1/3 watt
R3		25,000 ohms 2 watt
R4		25,000 ohms 1 watt
R5		100,000 ohms 1/3 watt
R6		1.75 meg. 1/3 watt
R7		20,000 ohms 1 watt
R8		50,000 ohms 1/3 watt
R9	8952	500,000 ohms Vol. Control
R10		10 meg. 1 watt
R11		250 ohms 3 watt
R12		50,000 ohms 1/3 watt
R13*		300,000 ohms 1/3 watt
R14		250,000 ohms 1 watt
R15*		1.75 megohms 1/3 watt
R16	9820	100,000 ohms Tone Cont.
R17		20,000 ohms 1 watt
R18		40 ohms 3 watt
R19		2.3 meg. 1/3 watt

Code No.	Part No.	CONDENSERS.
C1		4 mmfd Mica
C2	3661	2-20 mmfd Air Trimmer
C3	5435	6-24 mmfd Air Trimmer
C4	*9581 9728	Tuning Condenser
C5		.05 mfd Paper
C6	3411	11-29 mmfd Air Trimmer
C7		490 mmfd Mica (Padder)
C8	3658	2-10 mmfd Air Trimmer
C9		4000 mmfd Mica (Padder)
C10		.05 mfd Paper
C11		.1 mfd Paper
C12		70 mmfd Mica (N)
C13	*9581 9728	Tuning Condenser
C14		70 mmfd Silvered Mica
C15		70 mmfd Silvered Mica
C16		.01 mfd Paper
C17		.1 mfd Paper
C18		.1 mfd Paper
C19		16 mfd 525 V. Electro.
C20		4 mmfd Mica
C21		70 mmfd Silvered Mica
C22		70 mmfd Silvered Mica
C23		110 mmfd Mica (L)
C24		110 mmfd Mica (L)
C25		.01 mfd Paper
C26		16 mfd 350 V. Reg. Electro.
C27		50 mmfd Mica (D)
C28		25 mfd 25 V. Electro.
C29		.02 mfd Paper
C30		.0025 mfd Paper
C31		200 mmfd Mica (J)
C32*		.1 mfd Paper
C33		.5 mfd Paper
C34		50 mmfd Silvered Mica

*** See Circuit Modification.**

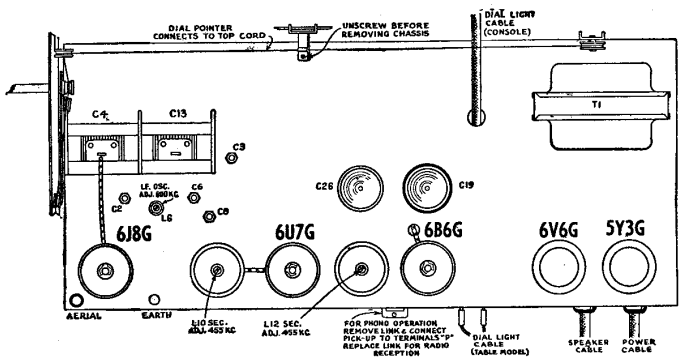


Model 315, Layout Diagram (Top View)

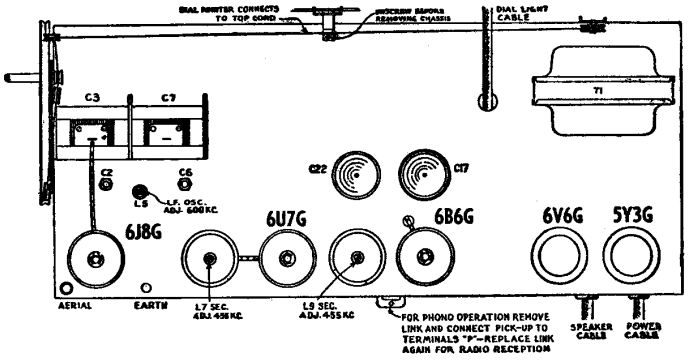
SOCKET VOLTAGES (Model 505)

VALVE	Cathode to Chassis Volts	Grid to Chassis Volts	Screen Grid to Chassis Volts	Plate to Chassis Volts	Plate Current M.A.	Heater Volts
6J8G Converter	0	–3.0*	85	265	1.0	6.3
Osc.	—	—	—	140	5.0	—
6U7G I.F. Amp.	0	–3.0*	85	265	6.0	6.3
6B6G Det.	0	0	—	130*	0.5	6.3
6V6G Output	13.0	0	265	250	47	6.3
5Y3G Rectifier	800/400 Volts. 75 M.A. Total Current.					

Voltage across loudspeaker field—120.
*Cannot be measured with ordinary voltmeter.
Measured at 240 volts A.C. supply.
No signal input. Volume at maximum.



Models 95-603, Layout Diagram (Top View)

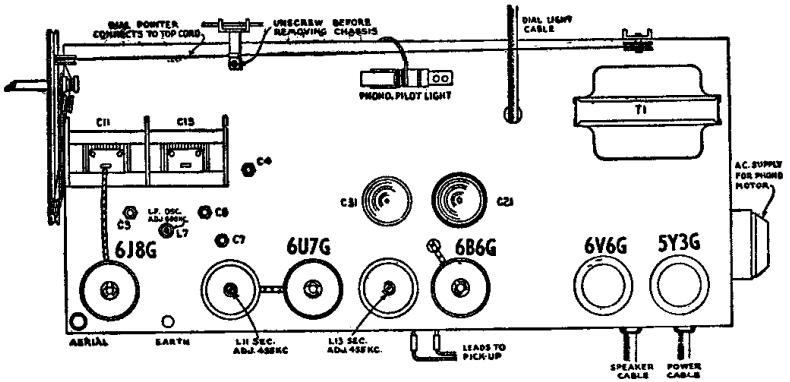


Model 505, Layout Diagram (Top View)

SOCKET VOLTAGES (Models 95-603, 315)

VALVE	Cathode to Chassis Volts	Control Grid to Chassis Volts	Screen Grid to Chassis Volts	Plate to Chassis Volts	Plate Current M.A.	Heater Volts
6J8G Converter M.W.	0	–3.0*	85	265	1.0	6.3
S.W.	3.0	0	85	265	1.2	6.3
Osc. M.W.	—	—	—	140	5.0	—
S.W.	—	—	—	140	5.0	—
6U7G I.F. Amp	0	–3.0*	85	265	6.0	6.3
6B6G Detector	0	0	—	130*	0.5	6.3
6V6G Output	13.0	—	265	250	47	6.3
5Y3G Rectifier	800/400 Volts, 75 M.A. Total Current.					

Voltage across loudspeaker field—120.
*Cannot be measured with ordinary voltmeter.
Measured at 240 volts A.C. supply.
No signal input. Volume at maximum.

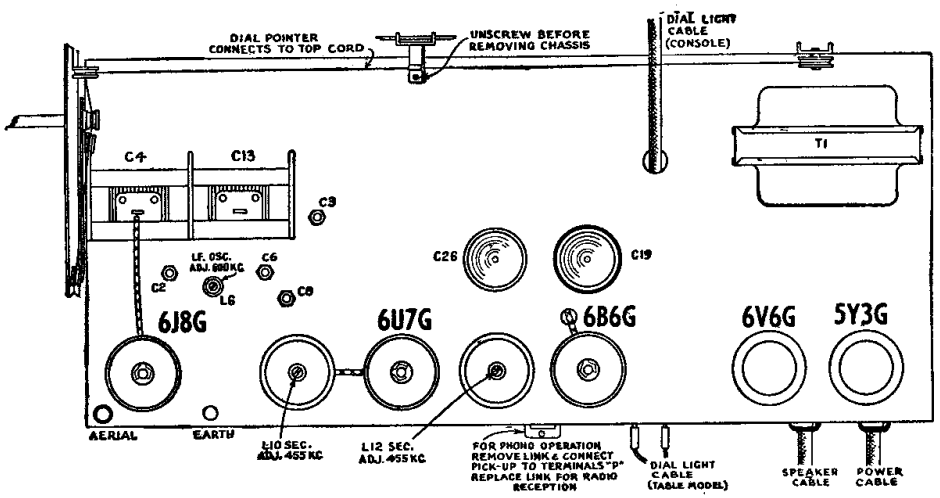


Model 315, Layout Diagram (Top View)

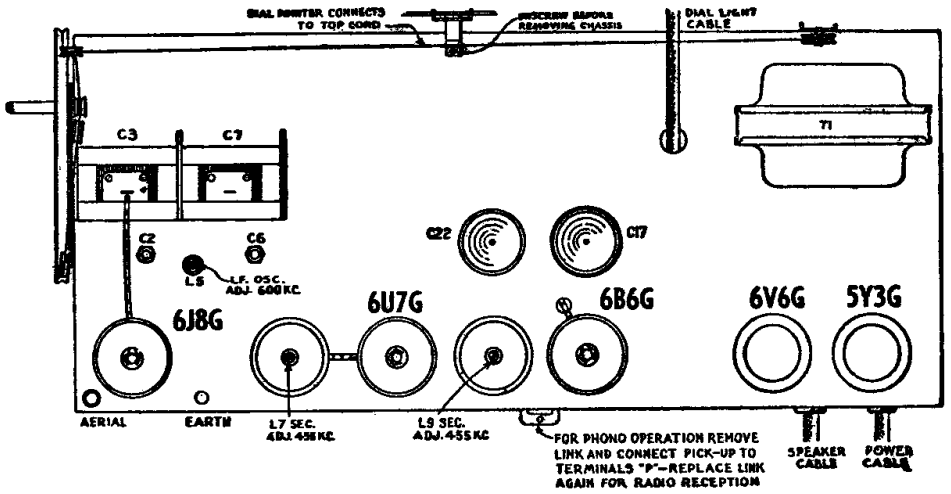
SOCKET VOLTAGES (Model 505)

VALVE	Cathode to Chassis Volts	Grid to Chassis Volts	Screen Grid to Chassis Volts	Plate to Chassis Volts	Plate Current M.A.	Heater Volts
6J8G Converter	0	−3.0*	85	265	1.0	6.3
Osc.	—	—	—	140	5.0	—
6U7G I.F. Amp.	0	−3.0*	85	265	6.0	6.3
6B6G Det.	0	0	—	130*	0.5	6.3
6V6G Output	13.0	0	265	250	47	6.3
5Y3G Rectifier.....	800/400 Volts. 75 M.A. Total Current.					

Voltage across loudspeaker field—120.
*Cannot be measured with ordinary voltmeter.
Measured at 240 volts A.C. supply.
No signal input. Volume at maximum.



Models 95-603, Layout Diagram (Top View)

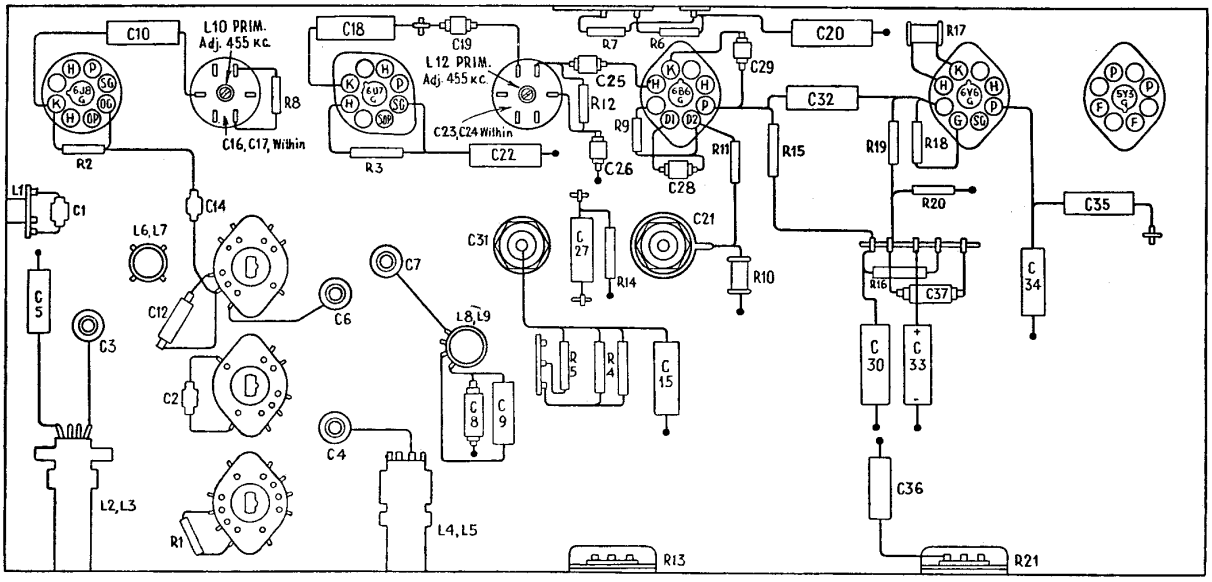


Model 505, Layout Diagram (Top View)

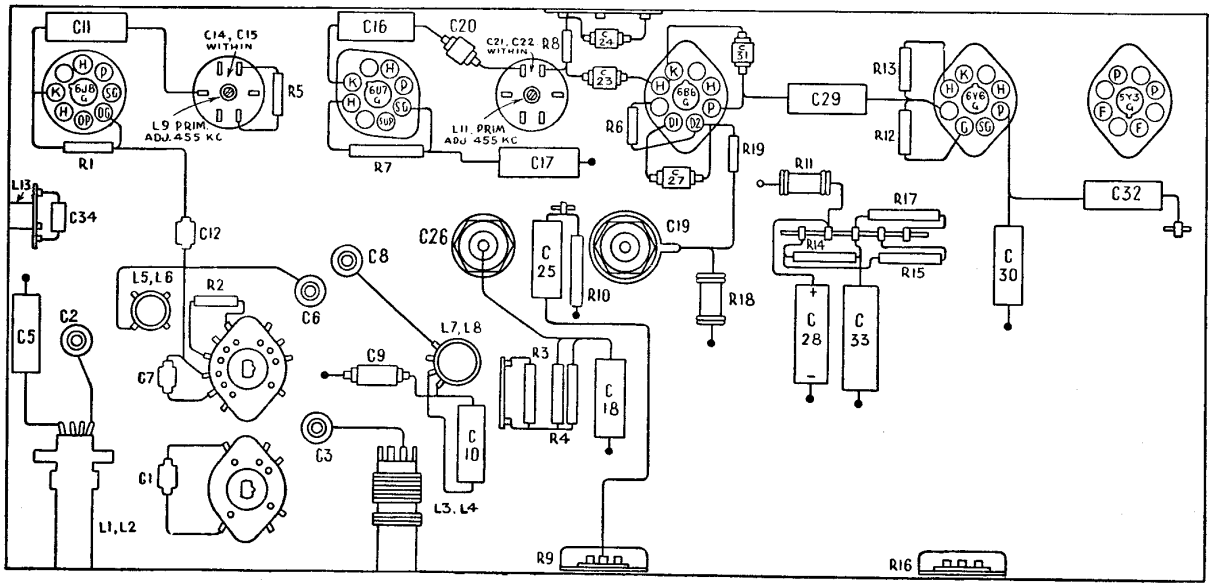
SOCKET VOLTAGES (Models 95-603, 315)

VALVE	Cathode to Chassis Volts	Control Grid to Chassis Volts	Screen Grid to Chassis Volts	Plate to Chassis Volts	Plate Current M.A.	Heater Volts
6J8G Converter M.W.	0	−3.0*	85	265	1.0	6.3
S.W.	3.0	0	85	265	1.2	6.3
Osc. M.W.	—	—	—	140	5.0	—
S.W.	—	—	—	140	5.0	—
6U7G I.F. Amp	0	−3.0*	85	265	6.0	6.3
6B6G Detector	0	0	—	130*	0.5	6.3
6V6G Output	13.0	—	265	250	47	6.3
5Y3G Rectifier	800/400 Volts, 75 M.A. Total Current.					

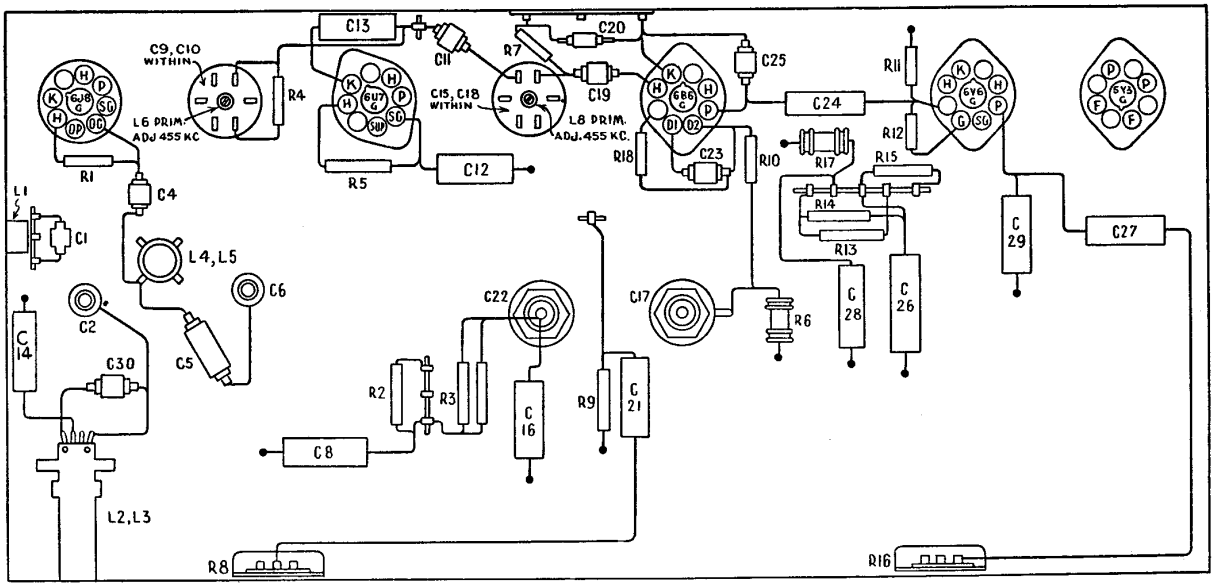
Voltage across loudspeaker field—120.
*Cannot be measured with ordinary voltmeter.
Measured at 240 volts A.C. supply.
No signal input. Volume at maximum.



Model 315, Layout Diagram (Underneath View)



Model 95-603, Layout Diagram (Underneath View)



Model 505, Layout Diagram (Underneath View)

MECHANICAL REPLACEMENT PARTS.

DESCRIPTION.	Part No.
Dial Frame Assembly (Model 95)	9391C
Dial Frame Assembly (Model 505)	9592B
Dial Frame Assembly (Models 603 and 315)	9592A
Dial Scale (Model 95)	9412
Dial Scale (Model 505)	9796
Dial Scale (Models 603 and 315)	9772
Calibration Scale 0-180°	9409
Dial Pointer Drive Cord	9576A
Dial Pointer Drive Coil Spring	6641
Pointer Drive Drum	9090
Tuning Control Knob	8075
Small Knobs	4589
Valve Sockets (4)	4704
Valve Socket (Cushion)	7326
Valve Shields	8147
Valve Cilps	7459
Dial Lamp Sockets (Model 95)	4194
Dial Escutcheon (Models 505, 603, 315)	4603
Loudspeaker Cone Assembly—AS13	7071
AW11	9356