

ATWATER KENT RADIO

Service Data, Parts List, and Price List for

MODEL 60-C [3RD TYPE]

Serial No. 5,670,001 to 5,684,000

Model 60-C is a chassis-type, screen-grid, electro-dynamic radio receiver, designed for 110-120 volt, 50-60 cycle, A. C. operation

As a result of the adoption of numerous laboratory developments which have been rigorously checked by extensive preliminary trials, the 3rd type of Model 60-C possesses many electrical and mechanical refinements which give to this model a number of very desirable improvements.

Electrically, the principal difference is in the arrangement of the R. F. amplifying circuit. Mechanically, the principal difference is in the design of the variable-condenser unit. These differences are tabulated on Page 202.

The improvements resulting from these changes are summarized below. It is important to remember that the following list gives only the improvements; in addition to these improvements, the 3rd type of Model 60-C has all the features of superiority which are described on Page 115 of this manual.

1. EXACT SYNCHRONISM. This is due to the exact mechanical construction of the variable-condenser unit.

2. UNIFORM SENSITIVITY.

3. UNIFORM SELECTIVITY.

4. UNIFORM DIAL SETTINGS. The same station is tuned in at almost identically the same dial number on all 3rd-type Model 60-C receivers. This feature is secured by strict uniformity of R. F. transformers and by the great accuracy in condenser construction.

5. EASILY ACCESSIBLE PARTS. The simple mechanical construction, quickly removable plug-in-type R. F. coil shields, one-bolt R. F. transformer-mounting brackets, air-cooled power transformer, separate tube sockets, direct wiring, complete service information with "picture drawings"—all these help to make servicing easy, quick and certain.

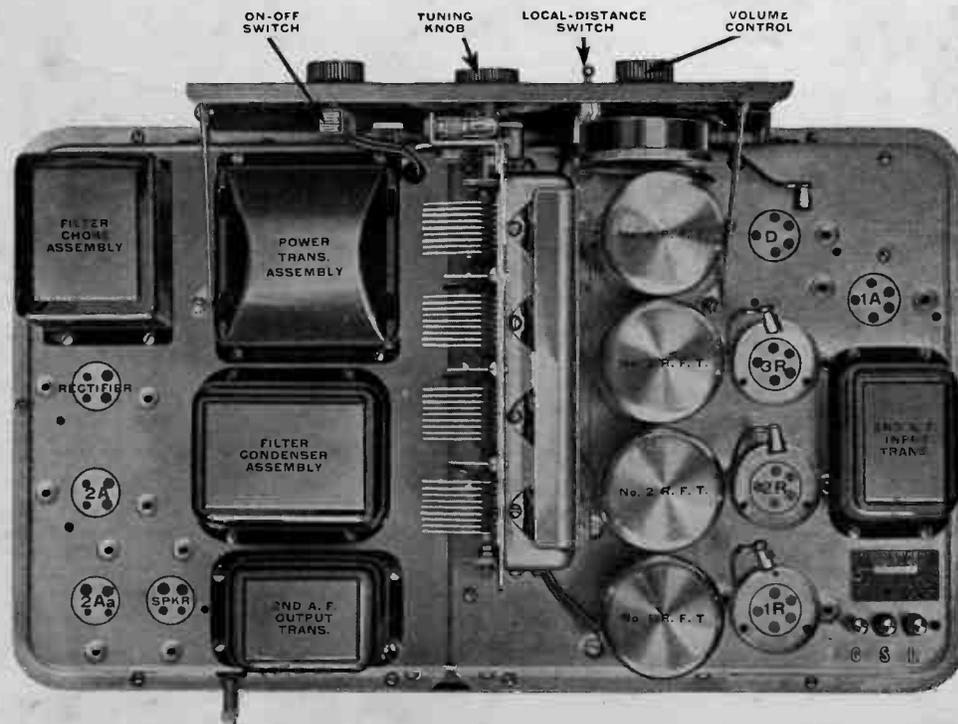


FIG. 201. TOP VIEW OF 3RD TYPE OF MODEL 60-C.

May, 1930.

Comparison of the Three Types of Model 60-C

Like the two preceding types of Model 60-C, the 3rd type has three stages of screen-grid radio-frequency amplification, a detector, one stage of resistance-coupled audio-frequency amplification, and a "double-audio" output stage.

The principal differences between the three types are as follows:—

	IN THE FIRST TYPE	IN THE SECOND TYPE	IN THE THIRD TYPE
VOLUME CONTROL	A single volume control regulates the screen-voltage.	A dual-type volume control— 1. Regulates the amount of R.F. energy transferred from the 1st to the 2nd-R.F. tube. 2. Regulates the screen-voltage.	A dual-type volume control— 1. Regulates the amount of R.F. energy transferred from the antenna circuit to the 1st-R.F. tube. 2. Regulates the R.F. control-grid voltage.
LOCAL DISTANCE SWITCH	The local-distance switch is connected to the primary of No. 2 R.F.T. (between the 1st and 2nd R.F. tubes). In the distance position, the switch cuts in the entire primary of No. 2 R.F.T., thus giving three straight stages of R.F. amplification. In the local position, the switch cuts out a part of the primary of No. 2 R.F.T., thus reducing the total R.F. amplification.	The local-distance switch is connected to the 2nd stopping condenser (between the 2nd and 3rd-R.F. tubes). In the distance position, the switch connects the 2nd stopping condenser to the plate of the 2nd-R.F. tube, thus giving three straight stages of R.F. amplification. In the local position, the switch connects the 2nd stopping condenser to the +B side of the plate-circuit of the 2nd-R.F. tube, thus reducing the total R.F. amplification.	The local-distance switch is connected to the secondary of No. 1 R.F.T. (ahead of the 1st-R.F. tube). In the distance position, the switch connects the grid-return lead of the 1st-R.F. tube to the chassis, thus giving three straight stages of R.F. amplification. In the local position,* the switch connects the grid-return lead of the 1st-R.F. tube to a coupling coil (on the 2nd-R.F. transformer) and then to the bias circuit of the 2nd-A.F. tubes. The coupling coil provides coupling between the 1st and 2nd tuned circuits, and the high negative grid bias makes the 1st-R.F. tube inoperative, thus reducing the total R.F. amplification.
R.F. TRANSFORMERS	The R.F. transformers are inductively coupled .	The R.F. transformers are auto-transformer coupled .	The R.F. transformers are auto-transformer coupled .
VARIABLE CONDENSERS	Both the 1st and 2nd types have four separate variable condensers controlled by pulleys and belts.		The variable condensers are of the "multiple" type, with the four rotors mounted on a common shaft.

* If, in the "local" position, the volume is not sufficiently reduced, the 1st-R.F. tube should be changed.

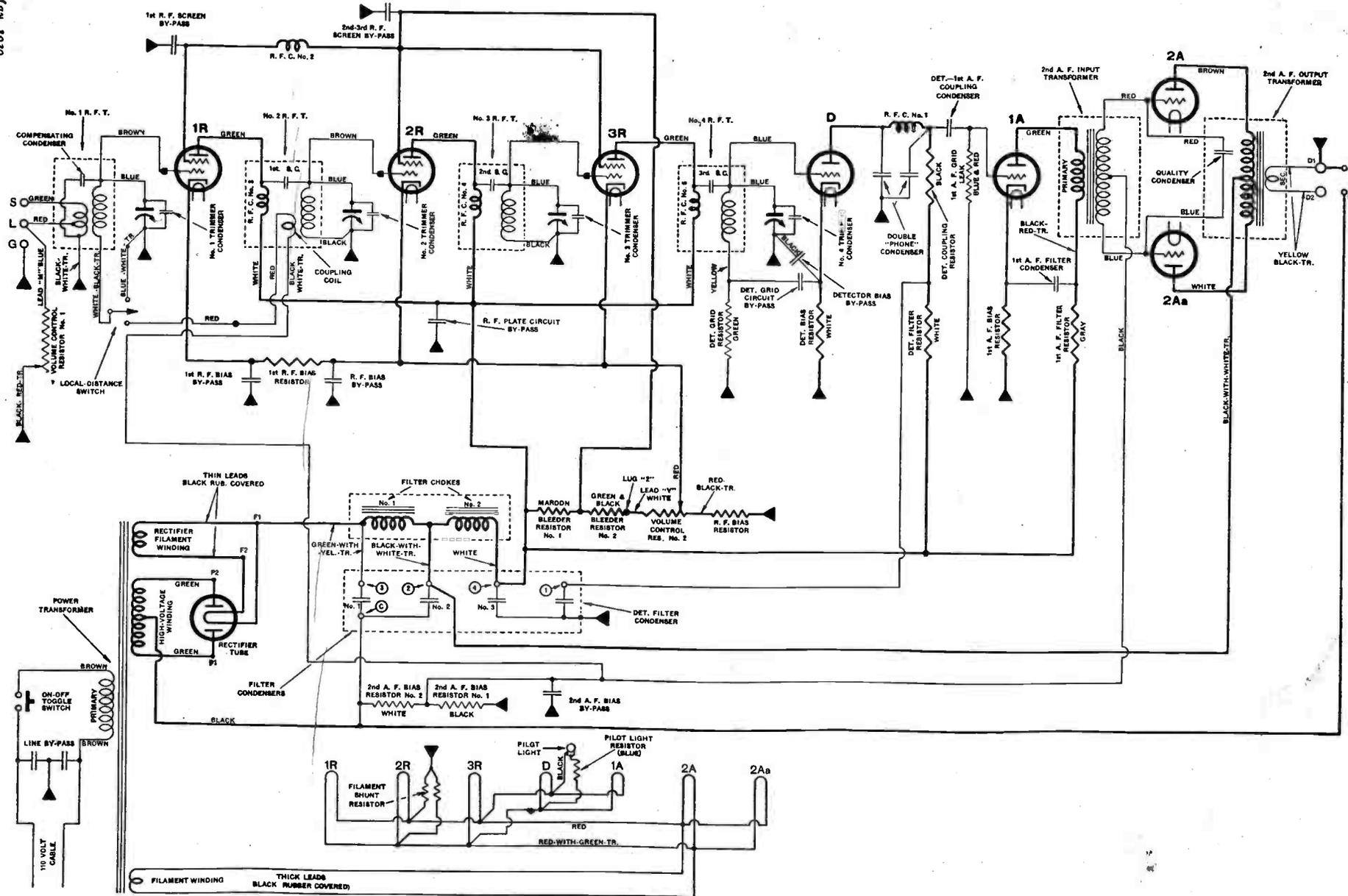


FIG. 202. SCHEMATIC DIAGRAM OF 3RD TYPE OF MODEL 60-C.

In the above diagram, "S.C." means stopping condenser.
 In later types of this model, the leads from the filament winding are covered with light gray rubber or black sleeving, and the grid-return of No. 4 R.F.T. is yellow-with-black-tracer instead of yellow.
 In a few of these models, the quality condenser is connected across the primary of the output transformer, the connections being made inside the unit.
 In these sets, the output transformer has five leads instead of seven.

3rd Type Model 60-C

(Serial No. 5,670,001 to 5,684,000)

Condensers in R.F. By-Pass No. 1

- L—Line by-pass.
- L—Line by-pass.
- C—2nd-A.F. bias by-pass.
- E—1st-R.F. screen by-pass.

Condensers in R.F. By-Pass No. 2

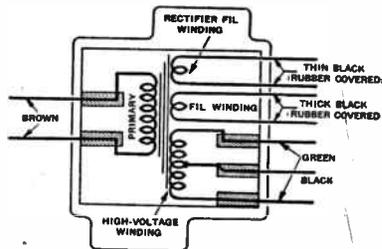
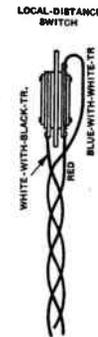
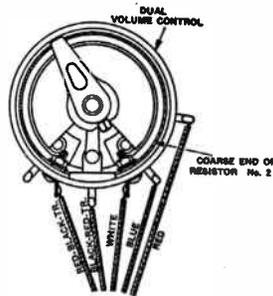
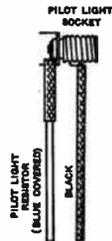
- A—1st-R.F. bias by-pass.
- B—R.F. bias by-pass.
- U—1st-A.F. filter condenser.

Condensers in R.F. By-Pass No. 3

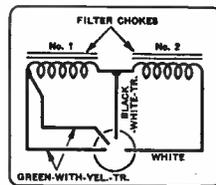
- D—Detector bias by-pass.
- H—R.F. plate-circuit by-pass.
- T—Detector grid-circuit by-pass.

Condensers in Detector By-Pass.

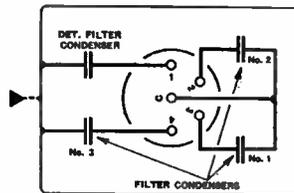
- F—2nd-3rd R.F. screen by-pass.
- M—Detector-1st A.F. coupling condenser.
- P—Phone condenser.
- P—Phone condenser.



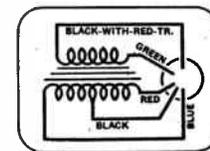
POWER TRANSFORMER ASSEMBLY



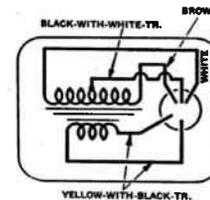
FILTER-CHOKES ASSEMBLY



FILTER CONDENSER ASSEMBLY



INPUT A. F. TRANSFORMER ASSEMBLY



OUTPUT A. F. TRANSFORMER ASSEMBLY

FIG. 203. CONNECTIONS OF UNITS IN 3RD TYPE OF MODEL 60-C

In later types of this Model, the red-with-black tracer lead on the volume control is replaced by a brown-with-white-diagonal-tracer lead which is the R.F. bias resistor. The bottom wiring connections for this later-type Model 60-C are shown on Page 207. Connections of the R.F. coil group are given on Page 212.

VOLTAGE TESTS

Operating voltage tests provide a quick and accurate method of checking circuit continuity and finding the general location of any defect. Then, if necessary, continuity tests may be used to narrow down the search to the specific part or connection that is causing trouble.

Procedure: Connect the set for operation, with all tubes and the speaker-plug in their sockets, and measure the voltages at the tube sockets as outlined on Page 208.

The voltage table on Page 208 lists the parts that may possibly be "open" if there is a lack of voltage on any circuit. **HOWEVER, IT IS IMPORTANT TO REALIZE THAT LOW VOLTAGE, OR NO VOLTAGE, MAY BE CAUSED BY A SHORTED FILTER, BY-PASS, COUPLING, OR STOPPING CONDENSER, OR BY A GROUNDED CIRCUIT.**

The voltage values given in the table on Page 208 were

taken with the volume control turned to the position of minimum volume (anti-clockwise). Turning the volume control to the maximum-volume position reduces the R.F. control-grid voltage, and this reduces the R.F. plate and screen voltages. The voltages for maximum volume are approximately as follows (for a 120-volt line):

TUBE	CONTROL-GRID VOLTAGE	PLATE VOLTAGE	SCREEN VOLTAGE
1st-R.F.	8	145	110
2nd-R.F.	5	145	110
3rd-R.F.	5	145	110
Detector	0.8	95	...
1st-A.F.	1	60	...

The voltages on the other tubes remain practically the same as the values given in the table on Page 208.

CONTINUITY TESTS

After making operating-voltage tests, continuity tests may be used if necessary to locate the exact cause of trouble in a set.

The continuity tests given in the table on Page 209 were made with the testing circuit shown in Figure 209. The readings given in the table will be somewhat different if a meter is used having a resistance other than that specified.

BEFORE MAKING ANY CONTINUITY TESTS, IT IS ADVISABLE TO CHECK EACH CONDENSER IN THE SET FOR SHORT CIRCUITS.

When lead "Y" is unsoldered from lug "Z," the +B circuit is isolated from the chassis. Therefore, by testing

from the filament of the rectifier tube (F₁), to the chassis, there should be no reading on the continuity meter. If there is any reading, either some part of the +B circuit is grounded, or one or more of the following condensers is shorted: Filter condenser No. 1, 2, or 3, R.F. plate-circuit by-pass, 1st or 2nd stopping condensers, 1st-R.F. screen by-pass, 2nd—3rd-R.F. screen by-pass, detector filter condenser, "phone" condenser, detector—1st-A.F. coupling condenser, or 1st-A.F. filter condenser.

The other condensers in the set may be checked, if necessary, by unsoldering all leads to their terminals and testing across each condenser separately.

TABLE OF CONDENSERS, WHICH, IF SHORTED, MAY CAUSE LOW PLATE, SCREEN, OR GRID VOLTAGE IN 3rd TYPE MODEL 60-C.

	LOW VOLTAGE, OR NO VOLTAGE ON—	MAY BE CAUSED BY A SHORTED—	OR BY A GROUNDED—
ALL TUBES	Plates, screens, and grids of ALL tubes.	Filter condenser No. 1, No. 2, or No. 3, R.F. plate-circuit by-pass, 1st stopping condenser, or 2nd stopping condenser.	Filter choke, 2nd-A.F. plate circuit, or R.F. plate circuit.
R.F. TUBES ONLY	R.F. screens and grid.	1st-R.F. screen by-pass, or 2nd—3rd-R.F. screen by-pass.	R.F.C. No. 2, or screen circuit.
	1st-R.F. grid.	1st-R.F. bias by-pass.*	1st-R.F. cathode circuit.
	2nd- and 3rd-R.F. grids.	R.F. bias by-pass.	2nd—3rd-R.F. cathode circuit.
DET. TUBE ONLY	Detector plate and grid.	Detector filter condenser, or "phone" condenser.	R.F.C. No. 1, or detector plate circuit.
	Detector grid.	Detector grid-circuit by-pass, or detector bias by-pass.**	Detector cathode circuit.
A.F. TUBES	1st-A.F. plate.	1st-A.F. filter condenser.***	1st-A.F. plate circuit.
	1st-A.F. grid.	(If the 1st-A.F. grid is positive, the detector—1st-A.F. coupling condenser may be shorted.)	1st-A.F. cathode circuit.
	2nd-A.F. grids.	2nd-A.F. bias by-pass.	2nd-A.F. grid circuit.

* With the switch at local, if the 1st-R.F. and the 2nd-A.F. grid bias is low, the compensating condenser may be shorted.
 ** If the detector grid is positive, the 3rd stopping condenser may be shorted.
 *** If the 1st-A.F. filter condenser is shorted, the 1st-A.F. bias will be high.

VOLTAGE TABLE FOR 3rd TYPE MODEL 60-C

Set in operation. Volume control at MINIMUM. Test in order listed. (See Page 206.)

Use 1000-ohm-per-volt D. C. Voltmeter (about 0-50-250) to Measure Plate and Grid Voltages. Use A. C. Voltmeter to Measure Filament Voltages.

CIRCUIT	MEASURE ACROSS	APPROX. VOLTAGE *		NO READING INDICATES
		110 V. Line	120 V. Line	
FILAMENT	-F to +F on each socket. F1 to F2 on rectifier socket.	2.3 4.5	2.4 4.7	Open filament winding or connection. Open rectifier filament winding.
PLATE	C1R to P1R.	170	185	Open high voltage winding, filter choke, R.F.C. No. 3, 1st-R.F. bias resis., volume control resis. No. 2, R.F. bias resis., or speaker magnet coil. Open R.F.C. No. 4, or R.F.C. No. 5. Open detector filter resis., coupling resis., R.F.C. No. 1, or det. bias resis. Open 1st-A.F. filter resis., primary of A.F. input transformer, or 1st-A.F. bias resis. Open primary of output transformer.
	C1R to P2R, P3R. CD to PD.	170 119	185 130	
	C1A to P1A.	73	80	
	-F2A to P2A, P2Aa.	224	250	
GRID	C1R to G1R (switch at distance).	16.5	18	Open secondary No. 1, R.F.T. or defective L-D sw. Open secondary No. 2, No. 3 R.F.T. Open secondary No. 4 R.F.T., or det. grid resis. Open 1st-A.F. grid leak. Open 2nd-A.F. bias No. 2, or sec. of input trans. Open coupling coil, or defective L-D switch.
	C2R to G2R, G3R. CD to GD.	16.5 1.5	18 1.8	
	C1A to G1A.	1.9	1.9	
	-F2A to G2A, G2Aa.	36**	40**	
	C1R to G1R (switch at local).	45	50	
SCREEN	C1R to S3R, S2R, S1R.	142	155	Open bleeder resis. No. 1, or R.F.C. No. 2.

*These are the measured voltages, not the actual operating voltages. **If 2nd-A.F. bias resis. No. 1 is open, the grid voltage will be approx. 85.

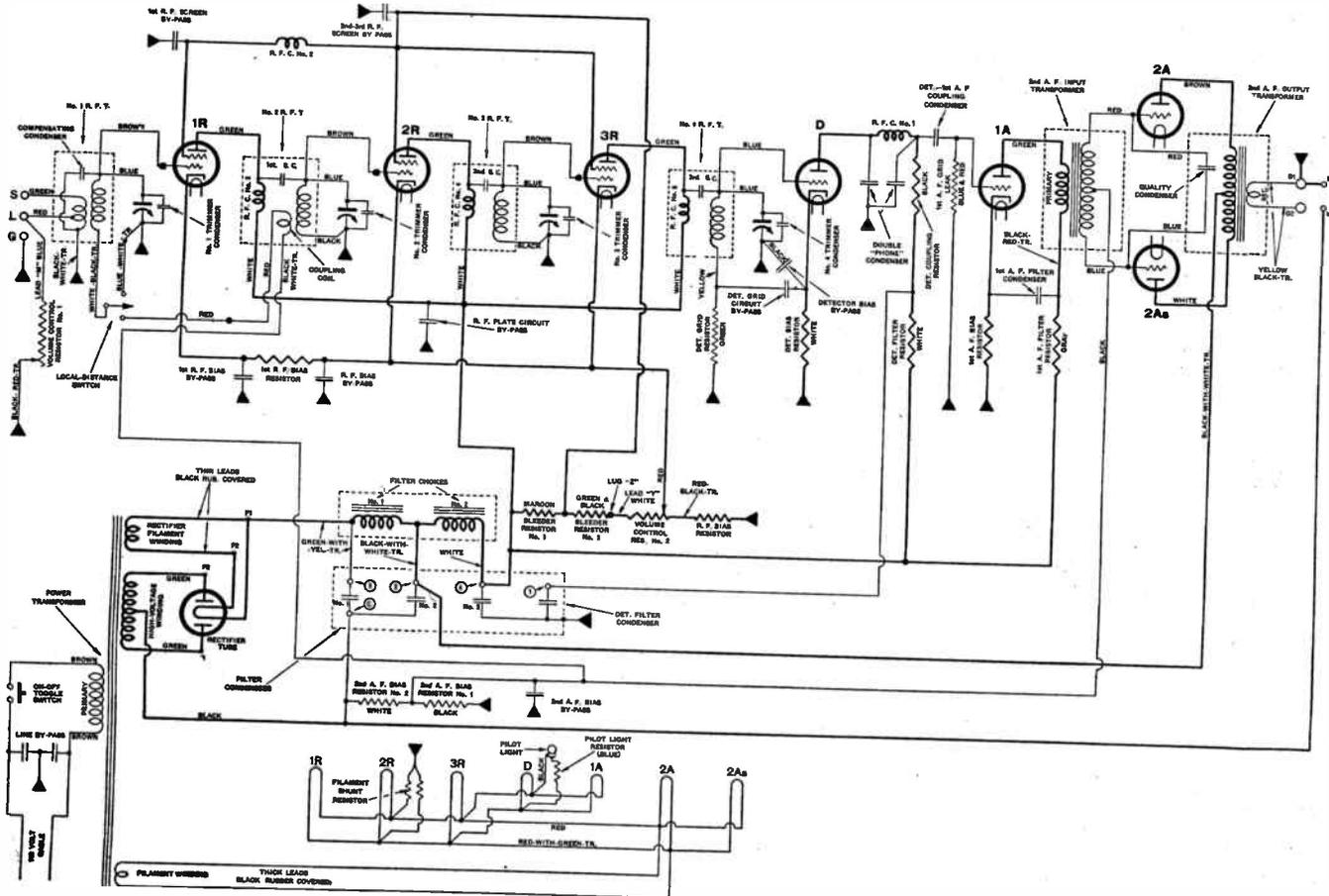


FIG. 206. DIAGRAM OF 3RD TYPE OF MODEL 60-C. "S.C." MEANS STOPPING CONDENSER. THIS DIAGRAM IS THE SAME AS FIG. 202.

May, 1930.

CONTINUITY TEST TABLE FOR 3rd TYPE MODEL 60-C
 Unsolder leads "M" and "Y." Remove speaker and 110-V. plugs. Set volume control at minimum.
 Make tests in order listed. (See Page 206.)

Test	Approx. Correct Reading	Wrong Reading Indicates
Test From FI To Contact No. 4 on condenser assembly. P ₁ R, P ₂ R, P ₃ R. S ₂ R, S ₃ R. S ₁ R. Lug "Z." PD. P ₁ A. P ₂ A, P ₂ Aa.	2.2 2.2 1.0 1.0 0.2 0.1 0.4 9	None—Open No. 1 or 2 filter choke. None—Open R.F.C. No. 3, 4, or 5. None—Open bleeder resistor No. 1. None—Open R.F.C. No. 2. None—Open bleeder resistor No. 2. None—Open detector filter resistor, coupling resistor, or R.F.C. No. 1. None—Open 1st-A.F. filter resistor, or primary of A.F. input transformer. None—Open primary of A.F. output transformer.
Test From Chassis To CD. C ₁ A. G ₂ A, G ₂ Aa. P ₁ , P ₂ . F ₁ . Each side of 110-v. plug. Each antenna post. Lead "M." C ₂ R, C ₃ R. C ₁ R. Stator No. 2, 3 V.C. G ₁ A.	0.4 7.8 0.2 0.2 None None Full Full 1.5 2.3 2 Full 0.2	None—Open detector bias resistor. None—Open 1st-A.F. bias resistor. None—Open secondary of A.F. input trans., or open 2nd-A.F. bias resis. No. 1. None—Open 2nd-A.F. bias resis. No. 2, or open high-voltage winding. Grounded filter chokes, or plate circuits (see page 206). Full—Grounded primary circuit of power transformer. None—Open primary No. 1 R.F.T. None—Open volume control resis. No. 1. (Vol. control at max. for this test.) None—Open R.F. bias resis., or open volume control resis. No. 2. None—Open 1st-R.F. bias resistor. None—Open secondary No. 2, or 3 R.F.T. None—Open 1st-A.F. grid leak.
Other Tests D ₁ to D ₂ . F ₁ to F ₂ . Across 110-volt plug. GD to by-pass T. Stator No. 1 variable condenser to chassis.	Full Full Full Full Full 0.2	None—Open secondary circuit A.F. output transformer. None—Open rectifier filament winding. None—Open primary circuit of power transformer. (Pwr. switch "on.") None—Open secondary No. 4 R.F.T. (with switch at distance) None—Open sec. No. 1 R.F.T. or open switch. (with switch at local) None—Open coupling coil or switch

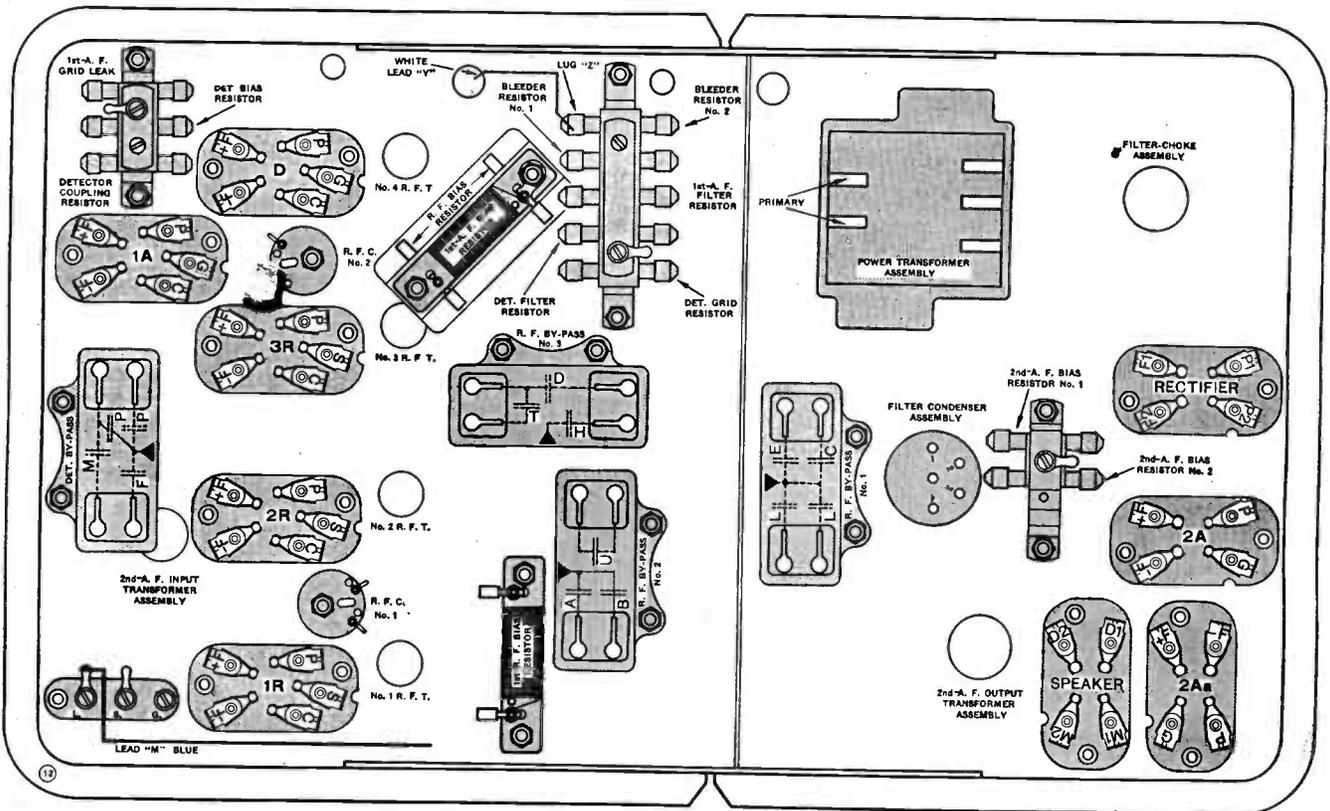


FIG. 207. TEST CHART FOR 3RD TYPE OF MODEL 60-C.

The 1st-R.F. bias resistor, the R.F. bias resistor, and the 1st-A.F. bias resistor are of a different style in later types of this model. See Page 207. May, 1930.

DESCRIPTION OF THE VARIABLE-CONDENSER UNIT

The condenser group in the 3rd type of Model 60-C consists of four variable condensers and four adjustable "trimmer" condensers. One trimmer condenser is connected in parallel to each variable condenser.

The four stators, or groups of stationary plates, are insulated from each other and from the chassis. A blue lead is soldered to each stator.

The four rotors, or groups of rotary plates, are mounted on a common shaft. Each rotor is held in the correct position on the shaft by two set-screws. The adjustment of the rotors on the shaft is made at the factory and must not be disturbed under any condition. Also, do not disturb the adjustment of the bearing screw at the rear end of the shaft.

Four rotor-connection means provide electrical connection to the four rotors. A black lead is soldered to each rotor-connection.

A counter-weight is used to balance the weight of the rotors. The counter-weight does three things:

1. It balances the condenser shaft and thus eliminates any tendency that might otherwise exist for the shaft to turn away from a given dial setting.
2. By its balancing action, the counter-weight makes possible an extremely light and smooth adjustment of the control knob.
3. The counter-weight is limited in its motion by the

pilot-light mounting bracket. This limits movement of the shaft between the positions of maximum and minimum capacity value, corresponding respectively to 100 and to zero on the dial.

If the counter-weight should require resetting, proceed as follows:—

1. Loosen the set-screws on the counter-weight.
2. Turn the shaft so the rotors are at maximum, with the straight edge of the rotor plates exactly even with the straight edge of the stator plates.
3. Hold the shaft in this position and turn the counter-weight so that it hits against the right-hand edge of the pilot-light bracket. The counter-weight should be about 1-16 inch away from the front edge of the condenser frame so that it will not scrape against the frame.
4. Tighten the counter-weight set-screws.
5. Turn the shaft in order to see that the counter-weight does not touch the frame of the condenser.

The dial and dial gear is arranged with the front side of the scale exactly flush with the front end of the shaft.

When the rotors are set at maximum, with the straight edge of the rotor plates exactly even with the straight edge of the stator plates, the dial should be set exactly at 100 with reference to the indicating point on the escutcheon.

The front and rear bearings of the condenser shaft may be lubricated with "Nujol," and a light film of Nujol may be spread on the rotor-connections.

When handling the set, ALWAYS KEEP THE ROTOR PLATES TURNED INSIDE THE STATOR PLATES in order to prevent accidental bending of the rotor plates.

In order to synchronize the four R. F. circuits accurately at the high-frequency end of the broadcast range (below 10 on the dial) an independently-adjustable trimmer condenser of low value is connected in parallel to each of the four variable condensers.

Each trimmer condenser consists of two plates separated by a piece of mica. The value of each trimmer is regulated by the pressure of a screw which governs the distance between the two plates. The location of these screws is shown in Figure 208.

The adjusting screw on each trimmer condenser is sealed with wax at the factory, but this wax may be easily broken away from the screws when adjustment of the trimmer condensers is necessary.

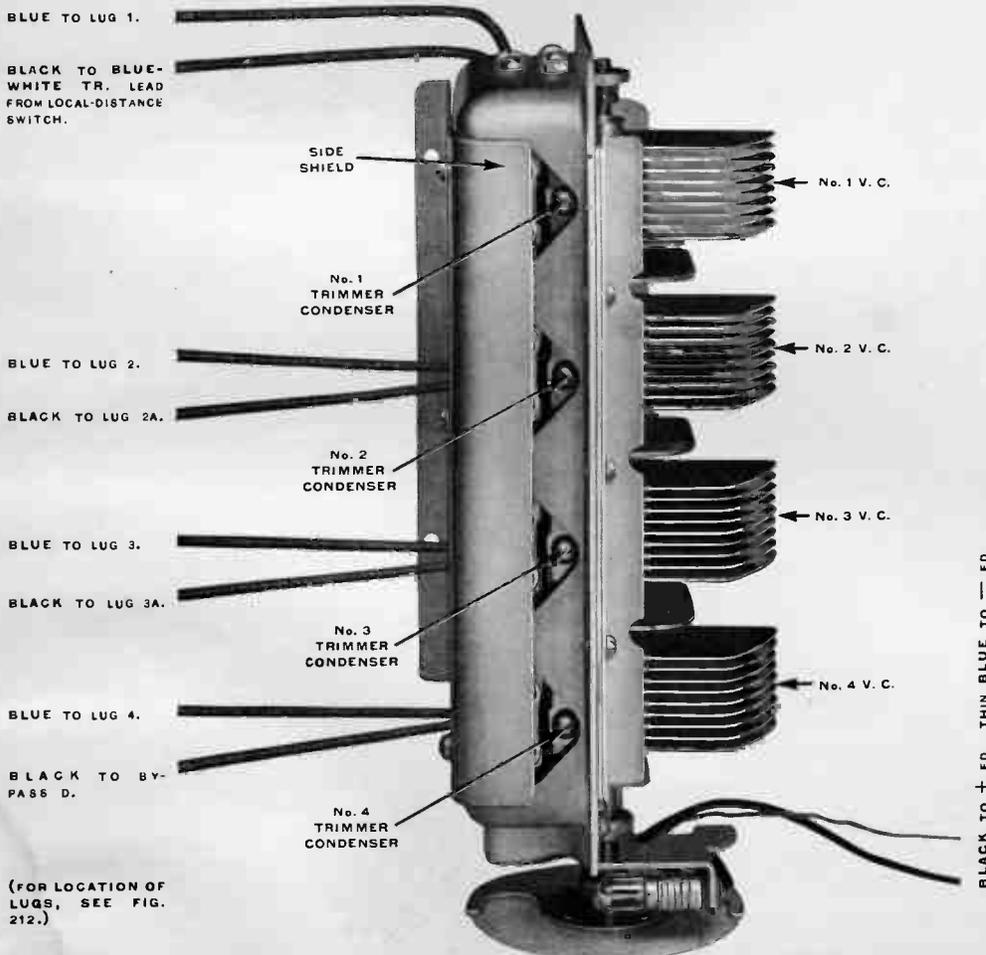


FIG. 208. VIEW OF VARIABLE CONDENSER UNIT

Checking Sensitivity of Set

After inspecting, testing, and repairing a set, connect it for operation and measure the plate, grid, screen and filament voltages. If these voltages check satisfactorily, test the receiver on broadcast reception for sensitivity and output volume at different points on the dial.

Lack of sensitivity or volume at certain sections of the tuning dial may be a result of damage to one of the R. F. transformers, or to the variable-condenser unit. Damage to these parts will throw the tuned R. F. circuits out of synchronism.

The initial synchronism of the R. F. circuits is built into the set by rigid uniformity of the R. F. transformers, and by the extremely accurate design of the variable-condenser unit. Owing to the rugged construction of these parts, the

Equipment Required

When checking the sensitivity of the set, it is necessary to use an oscillator, and a meter to indicate maximum output volume.

A local oscillator is necessary to ensure constancy of signal strength; signals from broadcast stations are not sufficiently constant for this work.

An output meter is necessary to ensure a reliable indication of output volume; the ear is not reliable enough for this purpose.

The oscillator feeds a weak signal into the receiver. The signal is amplified in the receiver and produces a reading on a meter which is connected to the output of the set. This meter indicates the strength of output volume. The reading on the output meter is greatest when all the tuned circuits

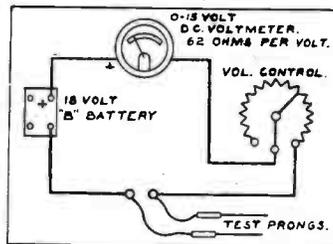


FIG. 209. DIAGRAM OF CONTINUITY TESTING CIRCUIT.

The voltage control is part No. 13320.

built-in factory synchronism should remain constant indefinitely.

However, if through rough handling the R. F. transformers have been damaged, or the rotor plates of the variable-condenser unit have been bent out of their manufactured alignment, the defective part should be repaired or replaced.

in the set are adjusted to the same frequency as the oscillator signal.

1. Oscillator.

The oscillator must provide modulated R. F. signals at four different frequencies in the broadcast range. *These four frequencies should correspond to dial settings of 5, 45, 65 and 95 on the dial of a 3rd type Model 60-C which has the original factory synchronism.*

Each of the four R. F. oscillators should have an adjustable pick-up so that the strength of each oscillator may be controlled independently of the other three.

2. Output Measuring Circuit.

The output measuring circuit is shown and described in Figure 210.

Adjusting Trimmer Condensers

1. Connect the common pick-up lead from the four R. F. oscillators to one end of a No. 8112 condenser. Connect the other end of this condenser to the Long-Antenna post. Connect the oscillator container to the Ground post.
2. Put plug "A" of the output measuring circuit in the speaker-plug socket on the set. Plug an F-4 type speaker in socket "B." Throw switch "D" to the right.
3. Put all tubes in the set; power switch on; volume control at maximum; local-distance switch at distance. Break away the sealing wax on the trimmer-condenser screws
4. Tune set exactly to 5 on dial. Reduce or increase the

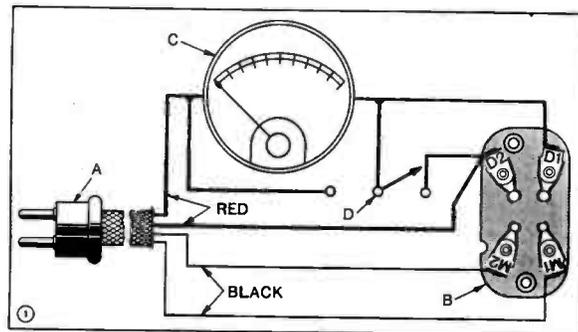
amount of pick-up from the 1st oscillator to secure a reading of about 20 on the output meter.

5. With a screw-driver, turn the pressure screw of the 4th trimmer condenser one way or the other, as necessary, to the point where the reading on the output meter is greatest. Repeat this process on the 3rd trimmer, then on the 2nd, and finally on the 1st. Reduce the pick-up from the 1st oscillator if necessary in order to keep the needle of the galvanometer near the centre of its scale.

This adjustment of the trimmer-condenser screws is termed the CORRECT POSITION.

Fig. 210. Output Measuring Circuit for Electro-Dynamic Receivers.

- A—Plug-and-cord No. 14537. This is to be inserted in the speaker-plug socket of set that is being tested.
- B—Speaker-plug socket No. 17512. Insert plug of correct type of electro-dynamic speaker in this socket.
- C—Thermo-coupled galvanometer (115 milliamperes). This meter gives an indication of the amount of A. F. current that is flowing through the voice-coil circuit.
- D—Single-pole—double-throw toggle switch No. 13678. With this switch, either the voice coil or the galvanometer may be shorted out of the circuit.



THE CONNECTIONS SHOWN IN HEAVY LINES MUST BE SHORT AND OF LOW RESISTANCE.

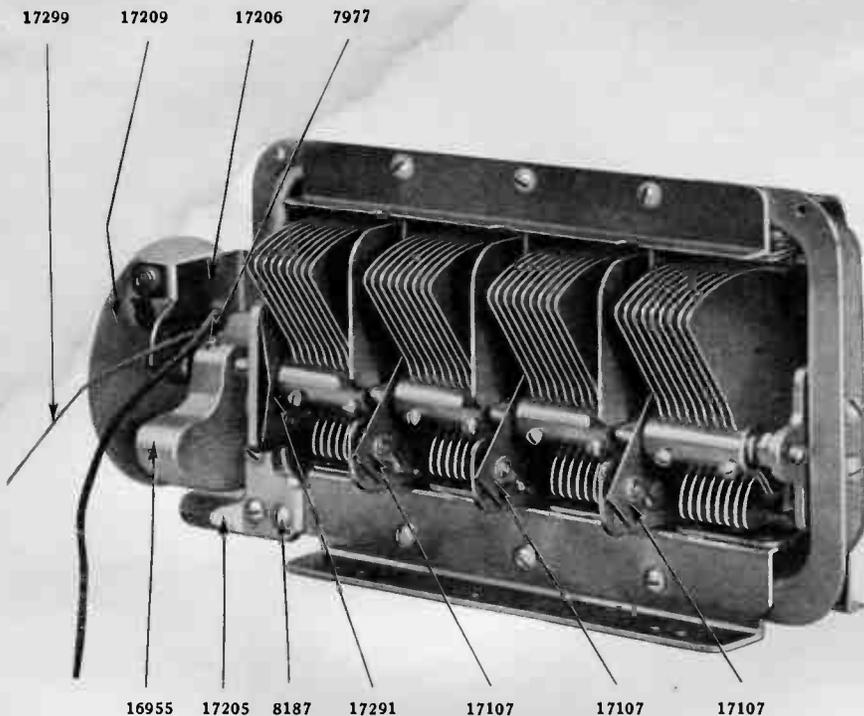


Fig. 211. (Above) View of Variable-Condenser Unit.

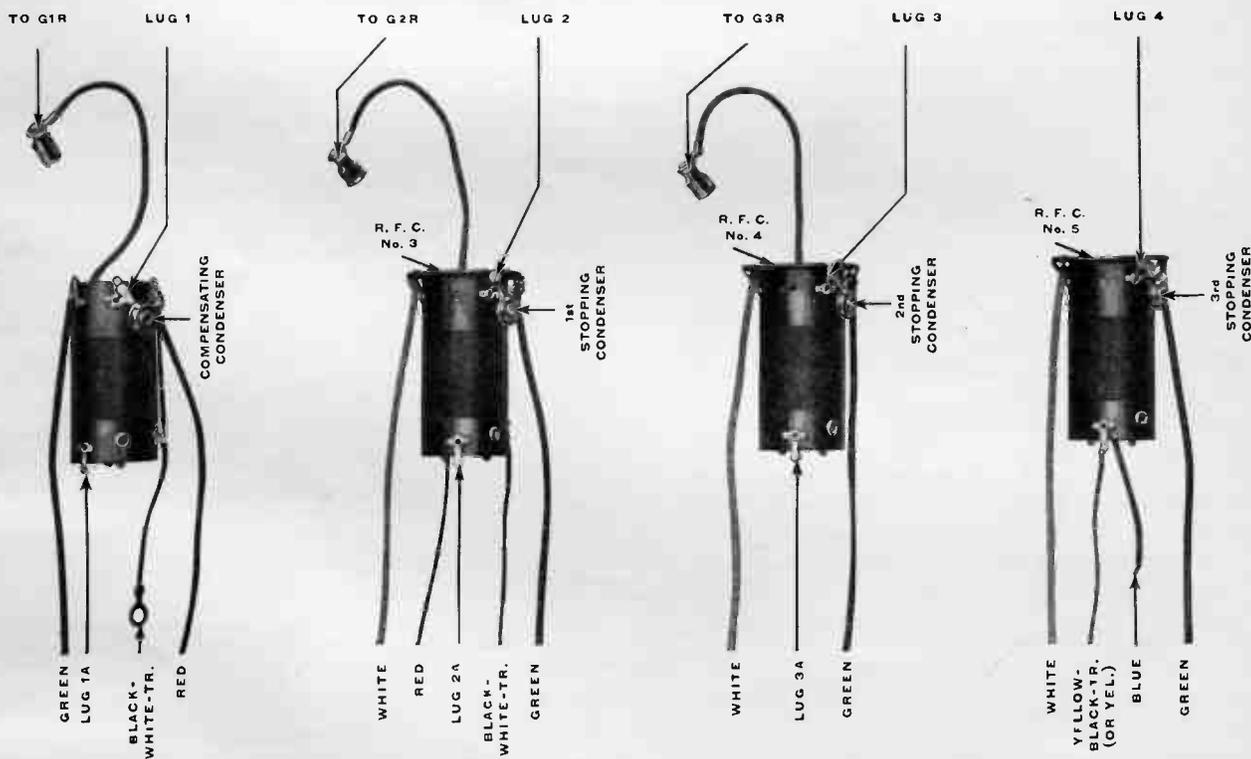
(See Pages 210 and 211 for further information.)

IMPORTANT—Do not disturb the adjustment of the rotor set-screws, nor the bearing-screw at the rear end of the shaft.

If any section of this unit is seriously damaged, the entire unit should be replaced.

Fig. 212. (Below) Coil Group, Showing Location of Parts and Connections of Leads.

If one R. F. coil, or R. F. C. No. 3, No. 4, or No. 5 is defective, the entire coil group must be replaced. If the compensating condenser or one of the stopping condensers is defective, it may be replaced without changing anything else.



No. 1 R.F.T.

Brown, with cap, to control-grid of 1R.
Green to S.
Red to L.
Black-white-tr. to chassis.
Connect white-black tr. lead from local-distance switch to lug 1A.
Connect blue lead from stator No. 1 V.C. to lug 1.
Connect black lead from rotor No. 1 V.C. to blue-white-tr. lead from local-distance switch.

No. 2 R.F.T.

Brown, with cap, to control-grid of 2R.
Green to P1R.
White to by-pass H.
Black-white-tr. to lead from by-pass C.
Red to lead of same color from local-distance switch.
Connect blue lead from stator No. 2 V.C., and black lead from rotor No. 2 V.C. to lugs 2 and 2A respectively.

No. 3 R.F.T.

Brown, with cap, to control grid of 3R.
Green to P2R.
White to by-pass II.
Connect blue lead from stator No. 3 V.C., and black lead from rotor No. 3 V.C. to lugs 3 and 3A respectively.

No. 4 R.F.T.

Blue, short, to GD.
Green to P3R.
White to left-hand end of detector filter resistor.
Yellow or yellow-black-tr. to left-hand end of detector grid-circuit resistor.
Connect blue lead from stator No. 4 V.C., to lug 4.
Connect black lead from rotor No. 4 V.C. to by-pass D.

PARTS AND PRICE LIST

MODEL 60-C, No. 15100, RECEIVING SET (SERIAL No. 5,670,001 to 5,684,000)

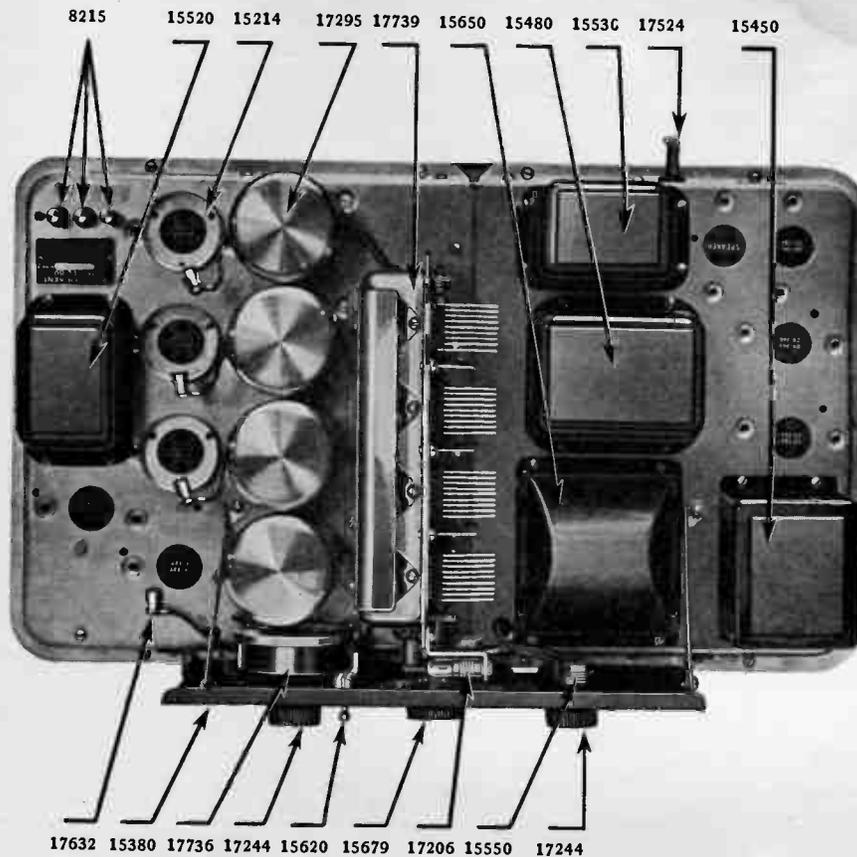


FIG. 213.
TOP VIEW.

FRONT PANEL ASSEMBLY

Part No.	Description	Price
15380	Front panel only	\$1.50
17224	Front-panel brace (2 used)	.10
17679	Rivets for panel braces	.01
16236	Escutcheon	.50
8272	Rivet for escutcheon	.02
17244	Volume-cont. or on-off switch knob	.30
15562	Set-screw	.50/c
15550	On-off switch complete	1.10
15620	Local-distance switch complete	.90
17736	Volume-control (less bracket)	3.70
17219	Volume-control bracket	.20
16576	Volume-control cover	.05
15679	Dial-knob assembly	.30
15678	Dial knob only	.25
15681	Dial-knob rubber	.02
15682	Dial-knob screw	.06

POWER UNITS

Part No.	Description	Price
15450	Filter-choke assembly	\$5.75
15331	Filter-choke lid	.20
15650	Power-transformer assembly	7.50
17268	Power-transformer cover	.50
17563	Power-trans. insulating sheet	.02
15480	Filter-condenser assembly	7.95
17429	Filter-condenser cover	.40
17534	Filter-condenser spacing pad	.25/c
17602	Red lead for filament circuit	.08
17603	Red-green-tracer lead for fil. circuit	.08

AUDIO-FREQUENCY TRANSFORMERS

Part No.	Description	Price
15520	Input A. F. transformer	\$3.75
15530	Output A. F. transformer	3.25

Part No.	Description	Price
17739	VARIABLE-CONDENSER ASSEMBLY COMPLETE	\$10.95
17738	VARIABLE-CONDENSER STATOR, ROTOR AND FRAME ASSEM. (With leads)	9.25
16955	Balance weight	.35
17209	Dial assembly	.60
17107	Rotor-connection (long)	.10
17291	Rotor-connection (short)	.10
15404	Pilot light	.25
17206	Pilot-light socket	.30
17299	Pilot-light resistor (blue)	.15
17205	Dial-knob bracket	.15

No separate parts, except those listed above, will be supplied for the variable-condenser unit.

COIL GROUP

Part No.	Description	Price
17737	R. F. coil group	\$4.00
15540	Stopping condenser (3 used)	.10
15540	Compensating condenser (1 used)	.10
17295	R. F. coil shield (4 used)	.50

If one R. F. coil, or R. F. C. No. 3, No. 4, or No. 5 is defective, the ENTIRE coil group must be replaced.

PARTS AND PRICE LIST (Cont'd)

MODEL 60-C, No. 15100, RECEIVING SET (SERIAL No. 5,670,001 to 5,684,000)

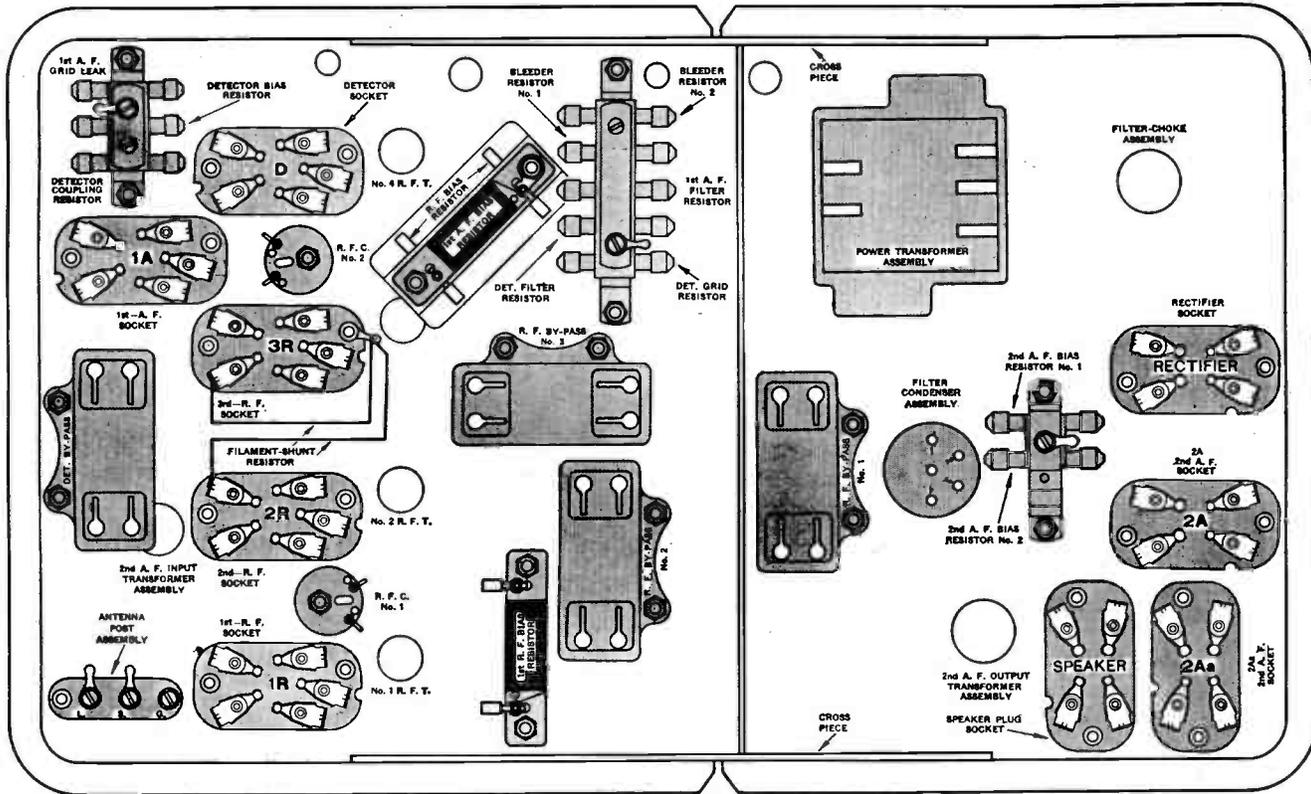


FIG. 214. BOTTOM VIEW. (See Page 207.)

TUBULAR RESISTORS TWO-RESISTOR GROUP

Part No.	Description	Price
15592	2nd-A.F. bias res. No. 1 (black)	\$.25
16724	2nd-A.F. bias res. No. 2 (white) . . . . .	.25
17341	Mounting bracket . . . . .	.05
17344	Fiber resistor pad . . . . .	.25/c
17343	Metal clamping strip . . . . .	.02

THREE-RESISTOR GROUP

Part No.	Description	Price
16282	1st-A.F. grid leak (blue, or blue and red) \$	.25
16724	Detector bias resistor (white) . . . . .	.25
15592	Detector coupling res. (black) . . . . .	.25
17341	Mounting bracket . . . . .	.05
17342	Fibre resistor pad . . . . .	.25/c
17345	Metal clamping strip . . . . .	.02

FIVE-RESISTOR GROUP

Part No.	Description	Price
15545	Bleeder resistor No. 1 (maroon)	\$.25
17558	Bleeder res. No. 2 (black and green) . . . . .	.25
15285	1st-A.F. filter resistor (gray) . . . . .	.50
16724	Detector filter resistor (white) . . . . .	.25
15892	Detector grid resistor (green) . . . . .	.25
17118	Mounting bracket . . . . .	.05
17117	Fibre pad . . . . .	.25/c
17119	Metal clamping strip . . . . .	.02

WIRE-WOUND RESISTORS

Part No.	Description	Price
15720	R. F. bias res. (superseded by No. 15830)	
15670	1st-A.F. bias res. (superseded by No. 15820)	
15660	1st-R.F. bias res. (superseded by No. 15810)	
15830	R. F. bias res.	\$.15
15820	1st-A.F. bias res. . . . .	.15
15810	1st-R.F. bias res. . . . .	.15
17077	Filament-shunt res. (black-white-tr.) . . . . .	.15
17299	Pilot-light resistor (blue) . . . . .	.15
13306	Sheet-fiber insulator 1 1/2" x 3" . . . . .	.25/c
17232	Sheet-fiber insulator 3/4" x 3" . . . . .	.25/c
15271-A	R. F. CHOKE, No. 1, No. 2 (2 used)	\$.25

BY-PASS CONDENSERS

Part No.	Description	Price
15790	R.F. by-pass No. 1 (H-18)	\$1.00
15770	R.F. by-pass No. 2 (H-15)	1.00
15780	R.F. by-pass No. 3 (H-17)	1.10
15640	Detector by-pass (H-16)	1.00

SOCKETS

Part No.	Description	Price
17518	R.F. socket (3 used)	\$.30
17519	Detector or 1st-A.F. socket . . . . .	.30
17511	2Aa socket . . . . .	.25
17509	2A socket . . . . .	.25
17508	Rectifier socket . . . . .	.25
17512	Speaker-plug socket . . . . .	.25
17377	Socket insulator (fibre-sheet) . . . . .	.25/c
8249	Socket-fastening eyelet . . . . .	.50/c

PARTS AND PRICE LIST (Cont'd)

MODEL 60-C, No. 15100, RECEIVING SET (SERIAL No. 5,670,001 to 5,684,000)

MISCELLANEOUS PARTS

Part No.		Price	Part No.		Price
17524	110-volt cable, with plug	\$1.90	15213	Tube-shield (3 used)	\$0.15
8956	110-volt plug only	.30	15214	Tube-shield base (3 used)	.03
16741	Insul. bushing for 110-volt cable	.05	17326	Detector cap	.30
16742	Bushing-retaining spring	.05	15410	Literature assembly	.35 net
17521	Antenna binding posts and base	.45	17332	Instruction book	.10 "
8215	Binding post	.20	17527	Shipping container	.65 "
17536	Bottom plate	1.30	17223	Cross piece (10" x 7/8"—2 used)	.25
16508	Fibre wire - clamp	.50/c	17632	Detector-cap lead (brown)	.10
13989	Ground-clamp assembly	.30		Trimmer-condenser sealing wax	.50 lb.

SCREWS, NUTS AND WASHERS ON SET (ILLUSTRATIONS ARE FULL SIZE)

Part No.... 13052	16158	8221	15283	8187	9274	9209	7697	8106
Price \$0.30/c	\$0.30/c	\$0.30/c	\$0.30/c	\$0.30/c	\$0.30/c	\$0.35/c	\$0.30/c	\$0.30/c
Part No... 14687	7977	8220	17432	15643	17433	8188	9678	
Price \$0.50/c	\$0.50/c	\$0.10/c	\$0.50c	\$0.30/c	\$0.50/c	\$0.01	\$0.50/c	

FIG. 215.

MODEL F-4-C, No. 14410, POWER SPEAKER (AFTER SERIAL No. 6,155,001)

Part No.		Price
17547	Cone-housing assembly	\$2.60
17546	Terminal-card assembly	.20
7637	Mounting eyelets	.40/c
17392	Name plate	.25
9206	Mounting eyelets	.20/c
17551	Field coil only	8.00
17515	Field-coil insulator	.02
17552	Field-coil spacer	.09
17553	Top pole piece	2.75
17557	Diaphragm assembly	3.25
17556	Cable and plug assembly	1.65
15079	Plug	.65
13499	Cable clamp	.05
14382	Steel ring (3 segments)	1.00
15604	Instruction sheet	.02 net
15578	Shipping container	.35 "
14622	Voice-coil centering gauge (3 used)	.10 set

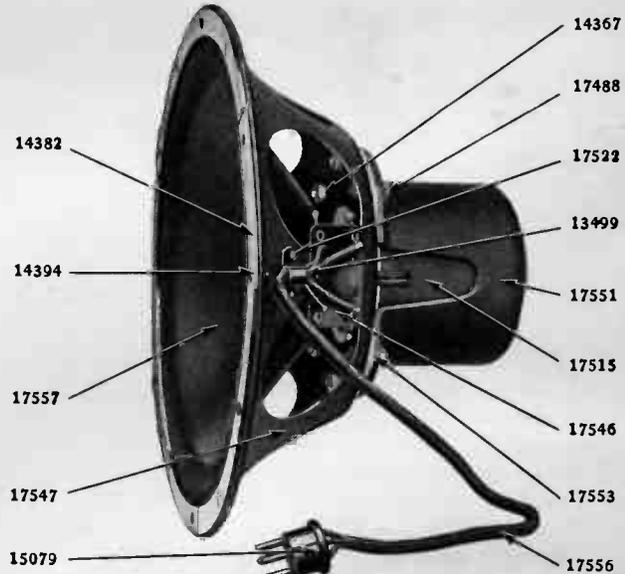


FIG. 216.

SCREWS, NUTS AND WASHERS ON SPEAKER (ILLUSTRATIONS ARE FULL SIZE)

Part No... 15572	17488	14379	17522	14394	15133	14367	15643	15134
Price \$0.06	\$0.03	\$0.35/c	\$0.30/c	\$0.30/c	\$0.04	\$0.02	\$0.30/c	\$0.01

FIG. 217.

ATWATER KENT RADIO

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June, 1981