General Electric Co.

Model: 212	Chassis:	Year: Pre 1951
Power:	Circuit:	IF:
Tubes:		
Bands:		

Resources
Riders Volume 19 - CHANGES 19-2
Riders Volume 20 - CHANGES 20-5
Riders Volume 18 - GE 18-21
Riders Volume 18 - GE 18-22
Riders Volume 18 - GE 18-23
Riders Volume 18 - GE 18-24
Riders Volume 18 - GE 18-25

GE 41, 42, 43

These models appear on *pages 17-1,2 through 17-15 of Rider's Volume XVII.* The following changes should be made. Add Cat. No. REF-003, line fuse F201, 3AG, 5 amp., 250 volts, to the parts list and add this to the schematic diagram of the Special Power Unit on *page 17-3.* The fuse should be placed in series with the power transformer primary and the power cord. Besides the addition of a fuse, the safety will be further increased by placing a sheet of asbestos underneath the power unit to cover the ventilation slots. Thus, even in the case of overload, the hot tar of the over-heated transformer is prevented from dropping on the floor.

Add Cat. No. RSV-001, Switch—power ON-OFF switch to the parts list. Replacement is readily made by merely bending the mounting taps.

To adjust for minimum hum level, turn the volume control until the audio output is zero and vary resistor R201 (which is parallel to the filaments and center-tapped to the chassis, forming an effective hum balancing circuit).

General Electric 41, 42, 43, 44, 45

These models appear on *pages 17-1,2 through 17-15 of Rider's Volume XVII.* A sliding type switch has been added in series with R67 (8200 ohms) connecting the resistor to the phonograph pickup input jack, J3. This switch is on the receiver chassis back apron with its respective label indicating High Fidelity and Normal, the open and closed positions, respectively.

In the replacement parts list under Cat. No. RSS-003, add the item: High Fidelity-Normal switch.

General Electric 50

This model will be found on *pages 15-1 through 15-4 of Rider's Volume XV.* This change covers a correction to the original parts list in the model 50 where Cat. No. RHS-001 was changed to RMX-006 for a tuning assembly and spacer.

A further correction is necessary in the item description since only the tuning shaft and drive pulley (assembled) is supplied under RMX-006. The spacer is the tuning shaft bearing, and is catalogued as a separate item under RHJ-001. The original parts listing of the drive pulley under this number has been deleted.

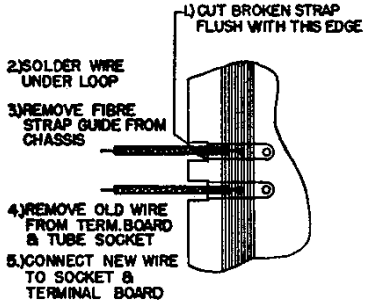
GE 140

This model appears on *pages 17-21 through 17-23 of Rider's Volume XVII.* The following changes should be made in the parts list: From Cat. No. RAD-027 remove the statement "(with loop connecting strips only)." Change Cat. No. RCC-075 to read RCC-080. Delete Cat. Nos. RDK-098, RHC-008, and RMX-103. Add the following parts.

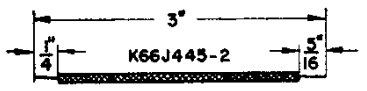
RDK-106	Knob—door catch knob
RCE-002	Strap—loop contact strap
RHE-002	Eyelets—spacer eyelets for escutcheon screws RHS-016
RHE-003	Eyelet—used for loop contact strap
RHR-002	Rivets—door hinge rivets (power cord access)
RHS-015	Screw—self tapping (used for cabinet door cover)
RHS-016	Screw—Phillips, flat-head, mounts bottom of escutcheon

The following procedure is recommended for repairing broken antenna loop connecting straps.

The broken straps should be cut back flush with the inside edge of the notch on the loop. The flexible wire is then used to make connections from the loop to the inside of the receiver. Consult the accompanying diagrams for loop connecting details and wire specifications. Carefully lift the section of the loop to allow connecting the specified pieces of wire and solder



WIRE DETAILS



2 REQUIRED PER SET

Above, the loop connecting details of the General Electric Model 140. The wire details for the antenna loop connections are shown in the lower figure.

wires to remainder of loose straps. Remove the fibre strap guide which originally insulated the loop straps within the cabinet. Remove original wire leads and pieces of loop strap connected inside the cabinet to the chassis terminal strip and pin 6 of the 1R5 oscillator-converter tube socket. Solder the new leads from the antenna loop directly to the terminal board and tube socket. Make certain that the inside of the loop is connected to pin 6 of the 1R5 tube socket. The following procedure is recommended to replace a speaker in this model.

1—Unsolder leads on speaker, using small tip iron.
2—Unsolder 90-μf capacitor (C14) at terminal strip.
3—Without unsoldering, remove dual 40-μf capacitor (C20) from mounting clip.
4—Using long screwdriver (8 inches or longer) loosen screws holding speaker to chassis.
5—Remove nuts holding speaker to front panel.
6—Lift up left end of resistor mounting plate and then lift out speaker.

If the antenna straps which interconnect the antenna in the receiver cover with the radio chassis circuit break, the following replacement procedure is recommended:

1—Bend up insulating material covering set end of antenna strips by inserting the tip of a long-nose pliers and twisting gently so as not to tear material.
2—Unsolder wires from loop strips in receiver.
3—Remove screws holding door cover.
4—Lift loop at point midway between hinges to expose strip rivets and unsolder loop from loop strips.
5—Remove rivet or rivets as needed, taking care not to damage loop or loop back.
6—Replace broken straps by new members, Cat. No. RCE-002, and rivet it in place with eyelets, Cat. No. RHE-003.

In order to replace the rectifier disc assembly, SR, proceed as follows:

1—Remove two mounting screws from the power switch, S1 (door switch).
2—Dress power switch away from mounting plate, providing more access to underside of top chassis deck.
3—Unsolder leads to rectifier disc assembly.
4—Push aside components underneath rectifier assembly mounting screw until screw can be loosened.

General Electric 210, 211, 212

These models appear on *pages 18-21 through 18-25 of Rider's Volume XVIII.* Change the third column (Signal Input Point) of the alignment charts on *page 18-23* to read: 12BE6 grid (pin 7 of V2). See note 7.

The parts list on *page 18-25* should be changed as follows: Change catalogue number UOP-557 to UOP-558 for Speaker 5¼-inch PM. Add the reference symbol R32 to Cat. No. URD-141—Resistor—6.8 meg., ½w., carbon.

The following changes have been made in the schematic diagram on *page 18-21.* Where capacitor C38 is shown terminating at ground on this schematic, later model receivers have this ground connection removed and the capacitor is terminated at the junction of the antenna input and capacitor C14. Capacitor C36 should be added and connected from the junction point of R29, pilot lamp I1, and pin 4 of V7 to ground. Resistor R32, which has been added to replacement parts list above, is connected from the junction of R8 and C4 (AVC filter) to the cathode, pin 2, of output tube V6.

This resistor, R32, has been added to increase the converter stage gain when operating in the A-M position because of a change in performance characteristics relative to grid cut-off of the 12BE6 tube.

General Electric 230 Kaiser-Frazer

This model appears on *pages 18-26 through 18-28 of Rider's Volume XVIII.* The change involves a substitution of catalog numbers in the replacement parts list as follows:

Cat. No. URE-035 and URF-055 are catalogued for carbon-type resistors. These numbers are to be replaced for numbers specifying wirewound resistors, RRW-037 becoming the Cat. No. for R13 and RRW-036 the number for R18.

General Electric 502

This model appears on *pages 17-4 through 17-8 and pages 17-39,40 through 17-47 of Rider's Volume XVII.* The changes involve a schematic correcton and a correction in the value of a component in the replacement parts list.

The schematic diagram which shows an open circuit in the screen grids of the 6V6 tubes, V10 and V11, should be corrected to show the screen grids connected to the 260-volt B-plus line.

In the listing of Cat. No. RCW-1028, the capacitor value was mistakenly given as 22-$\mu\mu$f. The capacitors listed are actually 100-$\mu\mu$f and RCW-1028 should be changed to read 100-$\mu\mu$f.

GE 210, 211, 212

These models appear in *Rider's Volume XVIII, pages 18-21 through 18-25.* In the schematic diagram C12 is shown as 22 μμf. This should be corrected to read 20 μμf. C12 is listed correctly in the replacement parts list as Cat. No. RCW-3016, 20 μμf.

The following items should be added to the replacement parts list:

RII-021—Insulator — Textolite (to insulate the volume control from chassis)

RII-022—Insulator — Textolite (to insulate the band switch from chassis)

In the tube and trimmer location shown on page 18-25, the secondary tuning slug of T6 is available through the top of the can, while the primary tuning slug of T6 is available through the holes in the bottom of the can.

General Electric 219, 220, 221

These models appear on *pages 15-28 through 15-31 of Rider's Volume XV.* In the parts list, catalog number RLL-003 should be identified as a replacement loop assembly only for Models 219 and 220. Catalog number RLL-025 should be added as the loop assembly for Model 221.

General Electric 250, 260

Model 250 appears on *pages 15-32 through 15-36 of Rider's Volume XV.* Model 260 appears on *pages 16-6 through 16-12 of Rider's Volume XVI.* The following should be added to the parts list for both models: Hinge pin for cover, catalog number RMP-011.

General Electric 321A

This model is the same as Model 321 Late, appearing on *pages 15-46 and 15-52 of Rider's Volume XV.*

General Electric 356, 357, 358

These models appear on *pages 18-40 through 18-44 of Rider's Volume XVIII.* The following changes should be made in the parts list. Under UCC-025, remove symbols C43, C65, C70. Add to UCC-026 symbols C43, C65, C70.

General Electric 356, 357, 358; 376, 377, 378

Models 356, 357, and 358 appear on *pages 18-40 through 18-44 of Rider's Volume XVIII.* Models 376, 377, and 378 appear on *pages 19-36 through 19-41 of Rider's Volume XIX.* When an old type construction 6BE6 (date coded 8/17 or before) is replaced with a new type construction 6BE6 (dated 8/22 or later) it is necessary that the f-m oscillator choke coil L8 be a 13½-turn coil (catalogue number RLF-012) instead of the 17-turn coil that was used in early production models.

General Electric 376, 377, 378

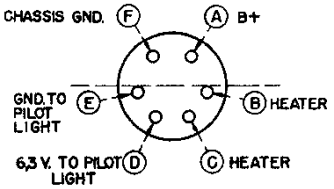
These models appear on *pages 19-36 through 19-41 of Rider's Volume XIX.* The f-m choke, L8, in the cathode circuit of the 6BE6 oscillator converter tube, V2, was listed under catalog number RLF-007. Due to a production change, this choke now becomes RLF-012.

Delete URD-033, R12, Resistor—220 ohms, ½ w., carbon. Add URD-037, R12, Resistor—330 ohms, ½ w., carbon. Add RCW-3009, C37, Capacitor—20.5 μμf. ±5%, ceramic. Delete UCW-2011, C37, Capacitor —20 μμf, ceramic. Add symbol number P4 to RJP-003. Delete P3 and P4 (Plug—preamplifier power plug) from RJP-004. Add RJP-005, P3, Plug—preamplifier power plug.

General Electric 417, 417A

Model 417 appears on *pages 16-16 through 16-19,* and *pages 16-21 through 16-24 of Rider's Volume XVI.* Model 417A appears on *pages 17-27,28 through 17-38 of Rider's Volume XVII.* These changes are in reference to the wiring of Phono Preamp Plug RJP-005.

Since some of the plugs supplied are inconsistent with specifications regarding the identification notch often referred to in wiring guides, this notch must be disregarded for indentification purposes to avoid confusion. While in some receiver productions the position of this key notch will differ from others, nevertheless, all receiver productions are wired the same in respect to the polarized system of prong arrangement.



Phone Preamp Plug RJP-005 in the GE 417, 417A should be wired as shown.

When replacing the plug RJP-005, it is only necessary to follow the simple wiring rule as used in all receiver production where the cluster of four prongs is first located within one-half the area of the plug base as determined by the imaginary center line. Next, locate the two remaining prongs as viewed from the prong end of the plug and begin the wiring in a clockwise direction as indicated by the letter designations in the accompanying diagram. The letters A, B, C, etc., in the diagram, are keys to wiring points, as referred to in the various published receiver circuit diagrams.

Magnavox AMP-101C

This model is the same as Model AMP-101A on *pages 17-1 and 17-2 of Rider's Volume XVII,* except for the following changes in parts values.

Ref. No.	Description	Part. No.
2-1	Capacitor, paper, 0.1 μf 600 v.	250152G33
2-2	Capacitor, paper, 0.1 μf, 600 v.	250152G33
8	Resistor, composition, 15,000 ohms, ±10%, ½ w.	230084G76
9	Resistor, composition, 100,000 ohms, 10%, ½ w.	230084G86

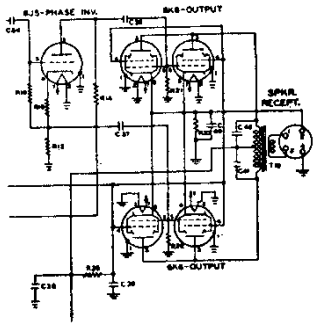
Magnavox AMP 111D, AMP 111E

These models are the same as Model AMP 111, appearing in *Rider's Volume XVIII, pages 18-4 through 18-7,* except for the following parts value changes:

Ref. No.	Description	Part. No.
9	Capacitor, paper, 0.03 μf, 400 V	250152G25
22	Resistor, composition, 22,000 ohms, ±10%, ½W	230084G78

Hoffman C501 and C511, Chassis 108

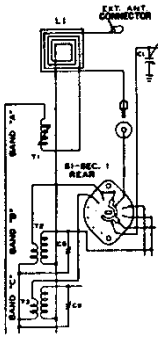
These models are the same as Model A501, Ch. 108S, appearing on *pages 15-6 through 15-10 of Rider's Manual Volume XV,* except that four 6K6 beam-power tubes are used in push-pull parallel in the output stage instead of the two push-pull 6V6's. The change is indicated in the accompanying diagrams. The alignment is still the same as given on *page 15-9.*



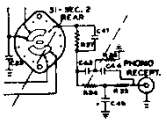
6K6 tubes for Hoffman C501 and C511.

The parts list should be changed to read as follows:

Symbol	Description	Hoffman Number
C47, C23, C24, C25	100μμf, ± 20%, mica	4000
C28, C32	0.005μf, 600 volt, tubular paper	4102
C29, C30	10μf, 450 volt, tubular electrolytic	4203
C31, C33, C34	0.01μf, 400 volt, tubular paper	4112
C41, C46	0.001μf, 600 volt, tubular paper	4104
C43	0.01μf, 600 volt, tubular	4103
C42, C44	330μμf, ± 10%, mica or ceramic	4010
C45	650μμf, ± 10%, mica or ceramic	4011
L1	Loop antenna	55210
LS	12" speaker, electrodynamic	9044
R2, R17	22,000 ohm, ± 20%, ½ w	4501
R3, R27	2.2 megohm, ± 20%, ½ w	4502
R4	10,000 ohm, ± 10%, 2 w	4503
R11	4,700 ohm, ± 20%, ½ w	4543
R12, R18	47,000 ohm, ± 20%, ½ w	4504
R23	500 ohm, ± 20%, 3 w	4550
R28	1,500 ohm, ± 5%, 6 ½ w	4701
R13, R14, R24, R25	47,000 ohm, ± 5%, ½ w	4537
R26	22,000 ohm, ± 5%, ½ w	4538
T10	Output transformer	5108



Antenna connection changes for Hoffman C501 and C511.



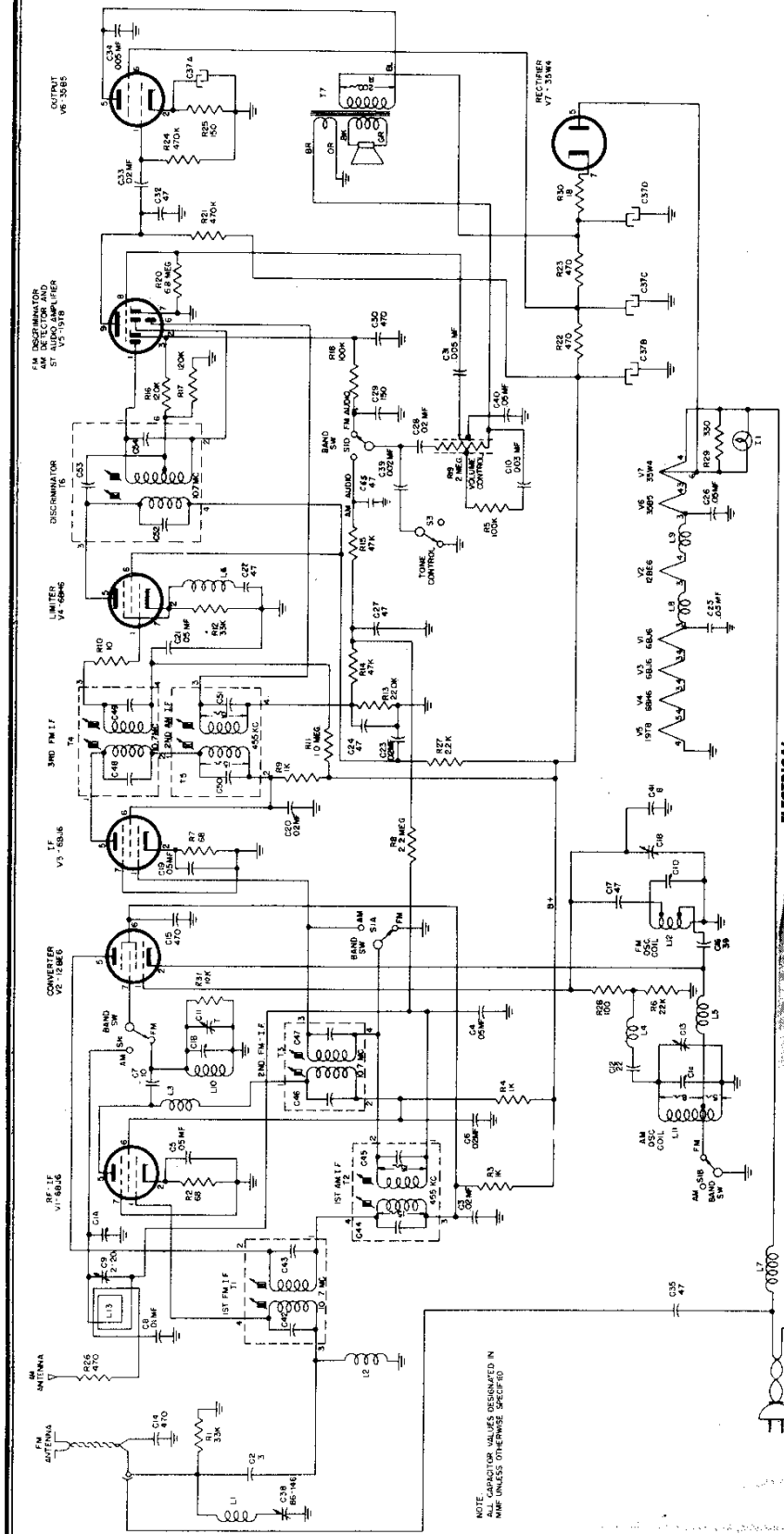
Circuit changes for Hoffman C501 and C511.

Ketay RP570T

This model appears in the *Miscellaneous section, page 15-8 of Rider's Manual Volume XV.* This model is listed in the Indexes as RP507T. It should read RP570T.

GENERAL ELECTRIC CO.

MODELS 210, 211, 212



TUBE COMPLEMENT:

(V1) FM RF and 1st I-F Amplifier . . . 6BJ6
(V2) Oscillator-Converter . . . 12BE6
(V3) I-F Amplifier . . . 6BJ6
(V4) Limiter . . . 6BH6
(V5) FM Discriminator, AM Detector, and 1st Audio Amplifier . . . 19T8
(V6) Power Output . . . 35B5
(V7) Rectifier . . . 35W4
(I1) . . . Mazda #47, 6-8 v.

ELECTRICAL:

Voltage . . . 105–125 volts A-c or D-c
Frequency . . . 50–60 cps
Wattage . . . 33 watts

TUNING BAND:

AM . . . 540–1600 kc
FM . . . 88–108 mc

INTERMEDIATE FREQUENCIES:

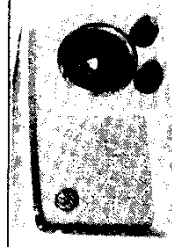
AM . . . 455 kc
FM . . . 10.7 mc

POWER OUTPUT (117 volts line)

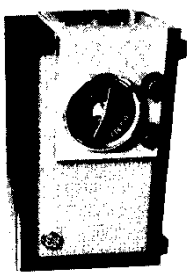
Undistorted . . . 1.1 watts
Maximum . . . 1.8 watts

LOUDSPEAKER:

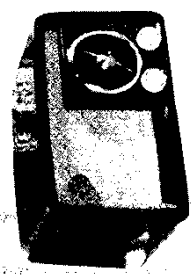
Type . . . "Alnico" permanent magnet
Outside Diameter of Cone . . . 5¼ inches
Voice Coil Impedance at 400 Cycles . . . 3.2 ohms



212—Wood



211—Ivory



210—Mahogany

MODELS 210, 211, 212

GENERAL ELECTRIC CO.

GENERAL

Models 210, 211 and 212 are alike except for cabinets. Model 210 is a mahogany-colored plastic cabinet. Model 211 is an ivory plastic cabinet, while 212 is a wood cabinet.

These models are designed to operate either from built-in antennas or from an external AM antenna or FM dipole antenna. On AM it is merely necessary to connect an external antenna to the terminal screw marked "Antenna." On FM, to operate the receiver from the built-in power line antenna, it is necessary to connect the green wire coming out the back of the cabinet back, to the right-hand terminal screw of the antenna terminal strip.

For operation from a 300-ohm FM dipole (G. E. Cat. No. UKA-006 or UKR-006), remove this green wire from the terminal and connect the 300-ohm transmission line (G. E. Cat. No. UWT-002) to the terminals marked "DIPOLE."

On AM operation, the set operates as a five-tube set with the signal being fed directly into the converter grid.

On FM, the set uses a reflex circuit, the Armstrong type discriminator and a special limiter circuit.

In the reflex circuit, V1 (6BJ6) acts both as an r-f amplifier and as the 1st i-f amplifier. The r-f signal is fed into the grid of V1 through the secondary of T1. It is amplified by V1 and tuned at the converter grid by L10, C1B and trimmer C11. In the converter, the r-f is changed to 10.7 mc i-f, and fed into the primary of T1 and again inserted into the grid of V1, which now acts as an i-f amplifier. The i-f signal is fed from the plate of V1 through choke L3 into the second i-f transformer. L1 and C38 form a 10.7 mc wave trap to eliminate any i-f signal from the antenna circuit to prevent interference. C2 and L2 are designed to peak at 98 mc with strays to increase the FM r-f sensitivity. At the FM r-f frequencies, the capacitor C42 offers little series impedance to the r-f signal. L3 and C7 form a high-pass filter to pass the FM r-f signal into the converter grid and to shunt the FM i-f frequency into the primary of the second FM i-f transformer.

It should be noted that the FM oscillator coil L12 is a section of 300-ohm line shorted at one end to form a one-turn loop. C16 and C17 are tapped in at each side of the shorted end.

L6 and C22 in the cathode circuit of the limiter tube are series tuned to 10.7 mc. This effectively grounds the cathode for IF. The presence of R12, however, provides a highly degenerative condition for any amplitude modulation applied to the limiter grid. The cathode bias developed by R12 is approximately 50 volts, which makes it necessary to insert onto the grid of V4 from B+ 50 volts through R11.

STAGE GAIN AND VOLTAGE CHECKS

Stage gain measurements by a vacuum tube voltmeter or similar measuring device may be used to check circuit performance and isolate trouble. The gain values listed may have tolerances of ±20%. Readings should be taken with low signal voltage so that AVC is not effective.

1. R-F AND I-F STAGE GAINS

Signal applied through IRE dummy antenna:

Antenna Post to V2 Grid	4.0 at 1000 kc
V2 Grid to V3 Grid	38 at 455 kc
Dipole Terminals to V1 Grid	1.3 at 98 mc
V1 to V2 Grid	8.0 at 98 mc
V2 to V1 Grid	1.6 at 10.7 mc
V1 to V3 Grid	22 at 10.7 mc
V3 to V4 Grid	26 at 10.7 mc

2. AUDIO GAIN

.09 volts at 400 cps across volume control with volume control set at maximum will give approximately ½ watt output across the speaker voice coil.

3. OSCILLATOR GRID BIAS

D-c voltage developed across R6:
4.8 volts at 1000 kc.
2.2 volts at 98 mc.

4. SOCKET PIN VOLTAGES

Figure 3 shows typical tube pin voltages. All readings should be made from the pins to ground, unless otherwise indicated.

5. HUM MEASUREMENT

Hum measured across the voice coil of the speaker with volume control at minimum and Band switch on AM should not exceed 10 millivolts.

On FM, ground limiter grid and measure hum across voice coil with volume control at maximum. Hum should not exceed 20 millivolts.

ANTENNA:

AM	Loop antenna, or outside antenna
FM	Power cord antenna, or 300-ohm FM dipole antenna

ALIGNMENT

Two methods of alignment are given: (1) The regular meter alignment as previously used; and (2) Visual alignment, which allows for more precision in aligning the i-f transformers and particularly the discriminator alignment where it is necessary that the negative and positive half cycles of the output wave have equal amplitude and symmetry.

EQUIPMENT REQUIRED FOR METER ALIGNMENT:

1. Test oscillator with tone modulation.
2. 20,000 ohm-per-volt voltmeter or microammeter.
3. A-c voltmeter, 2 volts.
4. .01 mfd., paper capacitor.
5. 200,000 ohm resistor, ½ watt.

EQUIPMENT REQUIRED FOR VISUAL ALIGNMENT:

1. General Electric YGS-3 AM and FM signal generator, or equivalent.
2. General Electric CRO-5A oscilloscope, or equivalent.
3. 200,000 ohms ½ watt resistor.
4. 20,000 ohm-per-volt meter.
5. .01 mfd paper capacitor.
6. 8 to 10 mfd Pyranol capacitor.

NOTES IN CONNECTION WITH VISUAL ALIGNMENT TABLE:

1. Connect vertical plates of scope to the limiter cathode (pin 2 or 7 of V4) through 200,000-ohm resistor and ground. Connect an 8 to 10 mfd. pyranol capacitor between junction of C21 and R11 and ground.

2. Connect vertical plates of scope to junction of R18 and C29 (FM audio).

3. Connect vertical plates of scope at junction of R15 and C27 (AM audio).

4. Use a 60-cycle, amplitude-modulated signal.

5. In some cases tuning of the converter grid will cause "pulling in" of the oscillator and will change the oscillator frequency. After centering the response curve, if peaking of C11 causes the curve to move off the screen, it is necessary to recalibrate the oscillator as in Step 9.

6. The termination impedance of the signal generator should be 300 ohms to properly match the FM imput impedance of this receiver.

7. To align the 1st i-f transformer (T1), it is necessary to disconnect the copper strap from the 12BE6 at the tube pin connection. After aligning T1, resolder the copper strap to pin 7 of the 12BE6.

8. To position the dial pointer, close the gang condenser completely and place the dial pointer on the shaft such that it is parallel to the chassis.

9. For alignment of the AM oscillator and r-f trimmers, the signal should be inductively coupled to the loop antenna by connecting a four-turn, six-inch diameter loop of bell wire to the signal generator terminals, and then locate this loop about one foot from the radio loop antenna. To prevent possible errors in peak readings, the position of the loop with respect to the radio loop antenna should not be changed during any one set of adjustments.

NOTES IN CONNECTION WITH METER ALIGNMENT CHART:

1. Use unmodulated signal.

2. Connect a 20,000 ohm-per-volt meter from junction of C29 and R18 to chassis. Use ten-volt scale.

3. Connect a 20,000 ohm-per-volt meter from cathode of limiter (pin 2 or 7 of V4) to junction of C21 and R11 in series with 200,000-ohm resistor. The resistor should be connected directly to the cathode to minimize capacity loading and to isolate the i-f signal voltage from the meter. Keep signal generator level down so that meter indicates not more than one volt at the cathode (5 microamps through 200,000 ohms).

4. Use 400-cycle modulation.

5. Connect a standard output meter across speaker voice coil. Turn volume control full on. Keep signal generator output down so that meter indicates not more than ½ watt.

6. For alignment of the AM oscillator and r-f trimmers, the signal should be inductively coupled to the loop antenna by connecting a four-turn, six-inch diameter loop of bell wire to the signal generator terminals, and then locate the loop about one foot from the radio loop antenna. To prevent possible errors in peak readings, the position of the loop with respect to the radio loop antenna should not be changed during any one set of adjustments.

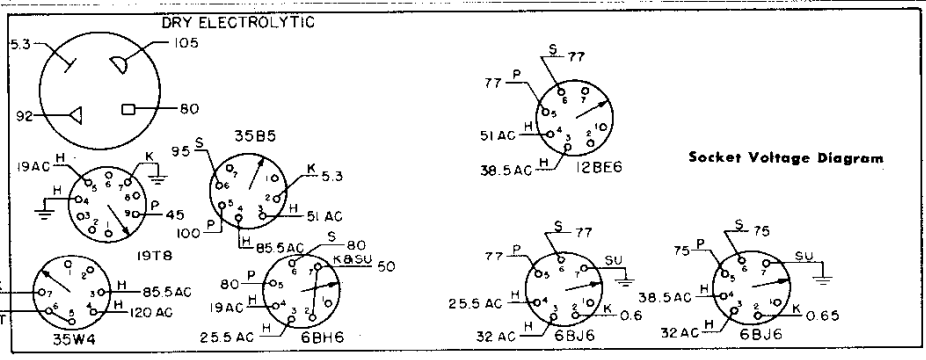
7. To align the first FM i-f transformer (T1), it is necessary to disconnect the copper strap from the tube grid connection (pin 7 of 12BE6). Resolder the strap after T1 is aligned.

8. The AM r-f alignment should be made before the FM r-f alignment. With the gang condenser fully closed or meshed, the dial pointer should be parallel to the top of the chassis.

9. Termination impedance of the signal generator should be 300 ohms.

ALIGNMENT CHARTS

STEP	SIGNAL GENERATOR FREQUENCY	SIGNAL INPUT * POINT	BAND SWITCH SETTING	DIAL SETTING	ADJUST	SEE NOTE
			AM I-F METER ALIGNMENT			
1	455 kc	12BE6 grid (Pin 7 of V2) thru .01 mfd.	AM	550	Two slugs of T5 for maximum.	4, 5
2	455 kc	Same as Step 1.	AM	550	Two slugs of T2 for maximum.	4, 5
			FM I-F AND DISCRIMINATOR METER ALIGNMENT			
3	10.7 mc	6BJ6 grid (Pin 1 of V1)	FM	....	Adjust tuning slugs of T4 for maximum.	1, 3
4	10.7 mc	6BJ6 grid (Pin 1 of V1)	FM	....	Adjust tuning slugs of T3 for maximum.	1, 3
5	10.7 mc	12BE6 grid (Pin 1 of V2). See Note 7.	FM	....	Adjust tuning slugs of T1 for maximum.	1, 3, 7
6	10.7 mc	6BJ6 grid (Pin 1 of V3)	FM	....	Adjust T6 secondary for minimum 400-cycle output. Three null points will be noticed (the center one is correct). When T6 is tuned either side of this point, the sound output will increase.	4, 5
7	*	Same as Step 6.	FM	....	*Detune signal generator to smaller of two peaks found, one on each side of 10.7 mc.	1, 2
8	Same as Step 4.	Same as Steps 6 and 7.	FM	....	Adjust T6 primary for maximum.	1, 2
			AM R-F METER ALIGNMENT			
9			Repeat Step 6			
10	1500 kc	Inductively coupled. (Note 8)	AM	*1500 kc	Adjust C13 for maximum.	4, 5, 6, 8*
11	1500 kc	Inductively coupled.	AM	For max. output	Adjust C9 for maximum while rocking dial.	4, 5, 6
			FM R-F METER ALIGNMENT			
12	108 mc	**Dipole terminals	FM	108 mc	Adjust for C18 for maximum.	1, 3, 9**
13	98 mc	Dipole terminals	FM	For maximum output	Adjust C11 for maximum while rocking generator.	1, 3
14	10.7 mc	Dipole terminals	FM	....	Adjust C38 for minimum.	1, 3



ALL VOLTAGES ARE +DC UNLESS OTHERWISE SPECIFIED
ALL VOLTAGES TO CHASSIS

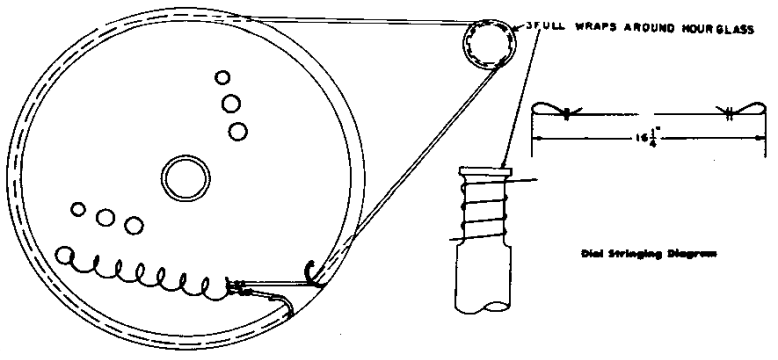
BACK OF CHASSIS
BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH E_L = 120 V
DC VOLTAGES WITH 20,000 OHMS PER VOLT METER
AC VOLTAGES WITH 1,000 OHMS PER VOLT METER

MODELS 210, 211, 212

GENERAL ELECTRIC CO.

STEP	SIGNAL GENERATOR FREQUENCY	SIGNAL INPUT POINT	BAND SWITCH SETTING	DIAL SETTING	ADJUST	SEE NOTE
			AM I-F VISUAL ALIGNMENT			
1	455 kc ±20 kc at 60-cycle sweep rate	12BE6 grid (Pin 7 of V2) thru .01 mfd.	AM	....	Two slugs of T5 for maximum amplitude and minimum distortion.	3
2	455 kc ±20 kc at 60-cycle sweep rate	Same as Step 1.	AM	....	Two slugs of T2 for maximum.	3
			FM I-F AND DISCRIMINATOR VISUAL ALIGNMENT			
3	10.7 mc ±300 kc at 60-cycle rate	6BJ6 grid (Pin 1 of V1)	FM	....	Adjust tuning slugs of T4 for maximum amplitude of wave.	1
4	10.7 mc ±300 kc at 60-cycle rate	6BJ6 grid (Pin 1 of V1)	FM	....	Tuning slugs of T3 for maximum amplitude of wave.	1
5	10.7 mc ±300 kc at 60-cycle rate	12BE6 grid (Pin 1 of V2) See Note 7	FM	....	Tuning slugs of T1 for maximum amplitude of wave.	1, 7
6	10.7 mc ±300 kc at 60-cycle rate	6BJ6 grid (Pin 1 of V3)	FM	....	Adjust primary of T6 for maximum amplitude.	2
7	10.7 mc ±300 kc at 60-cycle rate	Same as Step 6.	FM	....	Adjust secondary of T6 for vertical symmetry with respect to midpoint horizontal trace.	2
8	10.7 mc ±300 kc at 60-cycle rate	Same as Steps 6 and 7.	FM	....	Adjust primary of T6 for straightest line between positive and negative peaks.	2
			AM R-F VISUAL ALIGNMENT			
9	1500 kc	*Inductively coupled	AM	1500 kc	Adjust C13 for steepest slope of straight-line trace on scope.	3, 4 * 9, 8
10	1500 kc ±20 kc at 60 cps rate	Inductively coupled	AM	For max. output	Adjust C9 for maximum amplitude and minimum distortion.	3, 5 9
			FM R-F VISUAL ALIGNMENT			
11	108 mc	Dipole** terminals	FM	108 mc	Adjust C18 for steepest slope of straight-line trace on scope.	1, 4 6**
12	98 mc ±300 kc at 60 cps rate	Dipole terminals	FM	For max. output	Adjust C11 for maximum amplitude and minimum distortion.	1, 6
13	10.7 mc ±300 kc at 60-cycle rate	Dipole terminals	FM	....	Adjust C38 of minimum amplitude.	1, 6



Dial Stringing Diagram

GENERAL ELECTRIC CO.

MODELS 210, 211, 212

UNIVERSAL REPLACEMENT PARTS

Cat. No.	Symbol	Description
UCC-621	C39	CAPACITOR—.002 mfd., 600 v., paper
UCC-623	C10	CAPACITOR—.003 mfd., 600 v., paper
UCC-625	C31, 34	CAPACITOR—.005 mfd., 600 v., paper
UCC-630	C8	CAPACITOR—.01 mfd., 600 v., paper
UCC-631	C3, 6, 20, 23, 28, 33	CAPACITOR—.02 mfd., 600 v., paper
UCC-635	C4, 5, 19, 25, 26, 21, 36, 40	CAPACITOR .05 mfd., 600 v., paper
UCU-020	C24, 27, 32, 35	CAPACITOR 47 mmf., ±20%, mica
UCU-032	C29	CAPACITOR—150 mmf., ±20%, mica
UCU-044	C30	CAPACITOR—470 mmf., ±20%, mica
UOP-557		SPEAKER—5¼-inch PM speaker
URD-001	R10	RESISTOR—10 ohms, ½ w., carbon
URD-025	R2, 7, 28	RESISTOR—100 ohms, ½ w., carbon
URD-037	R29	RESISTOR—330 ohms, ½ w., carbon
URD-041	R26	RESISTOR—470 ohms, ½ w., carbon
URD-049	R3, 4, 9	RESISTOR—1000 ohms, ½ w., carbon
URD-057	R27	RESISTOR—2200 ohms, ½ w., carbon
URD-081	R6	RESISTOR—22,000 ohms, ½ w., carbon
URD-085	R1, 12	RESISTOR 33,000 ohms, ½ w., carbon
URD-089	R14, 15	RESISTOR—47,000 ohms, ½ w., carbon
URD-097	R5, 18	RESISTOR 100,000 ohms, ½ w., carbon
URD-099	R16, 17	RESISTOR 120,000 ohms, ½ w., carbon
URD-105	R13	RESISTOR 220,000 ohms, ½ w., carbon
URD-113	R21, 24	RESISTOR 470,000 ohms, ½ w., carbon
URD-121	R11	RESISTOR—1.0 meg., ½ w., carbon
URD-129	R8	RESISTOR—2.2 meg., ½ w., carbon
URD-141	R20	RESISTOR—6.8 meg., ½ w., carbon
URE-029	R25	RESISTOR—150 ohms, 1 w., carbon
URE-041	R22, 23	RESISTOR—470 ohms, 1 w., carbon

SPECIALIZED REPLACEMENT PARTS

RAA-007		ARM—Switch arm for tone control
RAB-074	L13	LOOP AND BACK ASSEMBLY FOR MODELS 210 AND 211
RAB-075	L13	LOOP AND BACK ASSEMBLY FOR MODEL 212
RAU-036		CABINET—White plastic cabinet for Model 211
RAU-037		CABINET—Brown plastic cabinet for Model 210
RAV-057		CABINET—Wood cabinet for Model 212
RCE-065	C37A, B, C, D	CAPACITOR—Electrolytic capacitor
RCT-031	C1A, B, C, D, C11, 13	CAPACITOR—Tuning capacitor
RCW-176	C14, 15	CAPACITOR—470 mmf., ±20%, max. neg., ceramic
RCW-1052	C17	CAPACITOR 47 mmf., ±20%, max. neg., ceramic
RCW-1057	C16	CAPACITOR—39 mmf., ±10%, max. neg., ceramic
RCW-1060	C7	CAPACITOR—10 mmf., ±20%, zero temp. coef., ceramic

SPECIALIZED REPLACEMENT PARTS (Cont'd)

Cat. No.	Symbol	Description
RCW-2010	C22	CAPACITOR—47 mmf., ±5%, zero temp. coef., ceramic
RCW-2033	C41	CAPACITOR—8 mmf., ±10%, max. neg., ceramic
RCW-3004	C2	CAPACITOR—3 mmf., ±20%, zero temp. coef., ceramic
RCW-3016	C12	CAPACITOR—20 mmf., ±5%, max. neg., ceramic
RCY-016	C9	CAPACITOR—2-20 mmf., trimmer capacitor
RCY-029	C18	CAPACITOR—FM oscillator trimmer
RCY-044	C38	CAPACITOR—86 146 mmf., trimmer capacitor
RDE-031		ESCUTCHEON
RDK-130		KNOB—Fawn for Model 210 tone control
RKD-131		KNOB—Fawn for Model 210 tuning control
RDK-132		KNOB—Fawn for Model 210 volume control and band switch
RDK-133		KNOB—Maroon for volume control and band switch on Models 211, 212
RDK-134		KNOB—Maroon for tone control on Models 211, 212
RDK-135		KNOB—Maroon for tuning on Models 211, 212
RDP-039		POINTER ASSEMBLY
RDS-071		SCALE, DIAL SCALE
RDW-009		WINDOW
RHG-015		GROMMET—Rubber grommet
RJS-033		SOCKET—For dial light
RJS-105		SOCKET—7-prong tube socket
RJS-118		SOCKET 9-prong tube socket
RJX-019		SOCKET—Female interlock socket on power cord
RLA-012	L4	CHOKE—FM oscillator grid choke
RLB-026	L10	COIL FM R-F coil
RLC-066	L11	COIL—AM oscillator coil
RLC-067	L12	COIL—FM oscillator coil (length of 300-ohm line between tuning condenser and terminal board tapped at the converter tube)
RLI-005	L3, 8, 9	CHOKE—FM choke
RLI-044	L7	CHOKE—Power line choke
RLI-056	L2	CHOKE—FM antenna choke
RLI-057	L5	CHOKE—FM oscillator cathode choke
RLI-058	L6	CHOKE—Limiter cathode choke
RLI-062	L1	CHOKE—FM Choke
RMG-009		GEAR SEGMENT—For tone control
RMS-004		SPRING Dial cord tension spring
RRC-082	R19, S2	VOLUME CONTROL AND POWER SWITCH
RRW-008	R30	RESISTOR—Flexible resistor, 18 ohms, 1 w., ±10%
RSJ-003		SOCKET—Male interlock on chassis
RSW-056	S1	SWITCH—Bandchange switch
RSW-057	S3	SWITCH—Tone control switch
RTD-006	T6	TRANSFORMER—Discriminator transformer
RTL-054	T5	TRANSFORMER—AM-2nd I-F transformer
RTL-077	T1, 3, 4	TRANSFORMER—1st, 2nd and 3rd FM I-F transformer
RTL-078	T2	TRANSFORMER—AM 1st I-F transformer
RTO-049	T7	TRANSFORMER—Output transformer