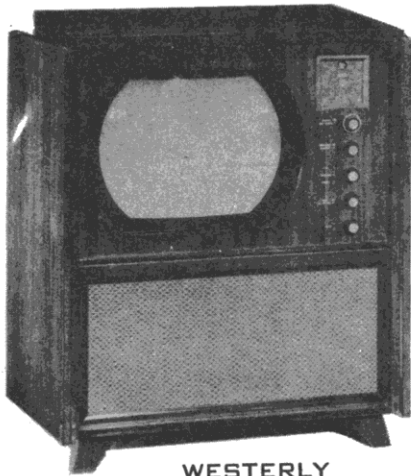


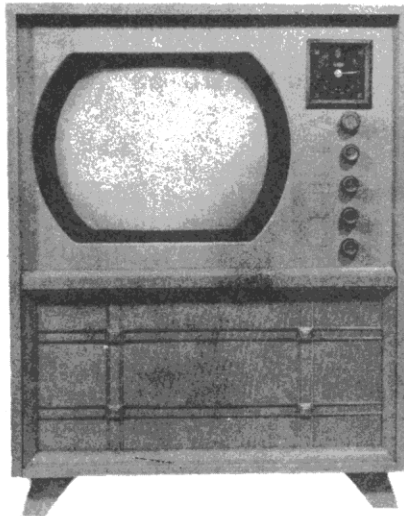
## INDEX

	PAGE		PAGE
ALIGNMENT INSTRUCTIONS . . .	17	SCHEMATIC . . . . .	23, 24
CIRCUIT DESCRIPTION . . . . .	3	SPECIFICATIONS . . . . .	3
INSTALLATION DATA . . . . .	6	TOP VIEW — TUBE LAYOUT . . .	20
PARTS LAYOUT . . . . .	20	TRIMMER LOCATIONS . . . . .	19, 20
PARTS LIST . . . . .	21	TROUBLESHOOTING . . . . .	6
PRODUCTION CHANGES . . . . .	12	VOLTAGE MEASUREMENTS . . .	23, 24
RESISTANCE MEASUREMENTS . .	19	WAVEFORMS . . . . .	23, 24

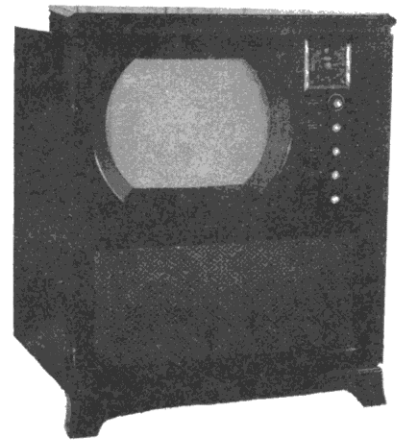
### RA-112A CABINET STYLES



WESTERLY

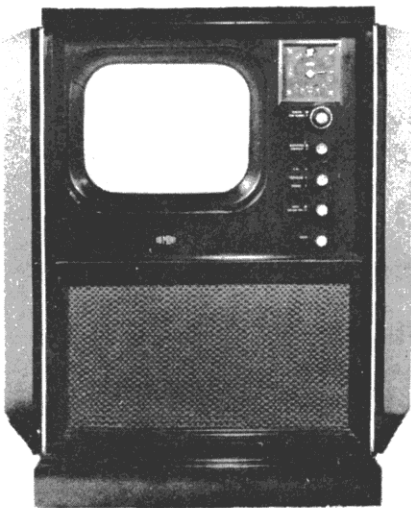


ARDMORE

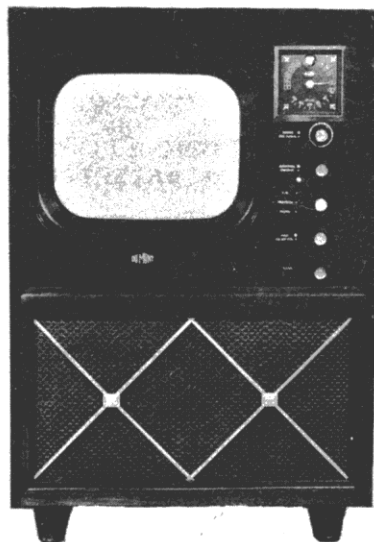


MT. VERNON

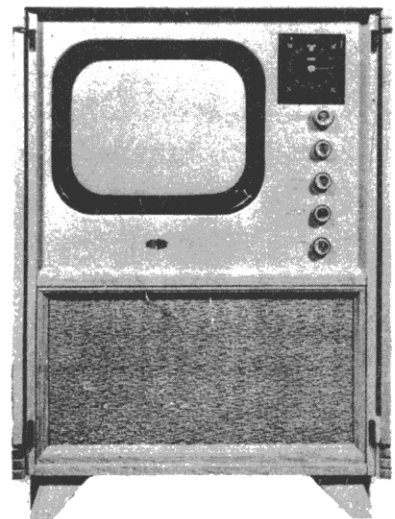
### RA-113 CABINET STYLES



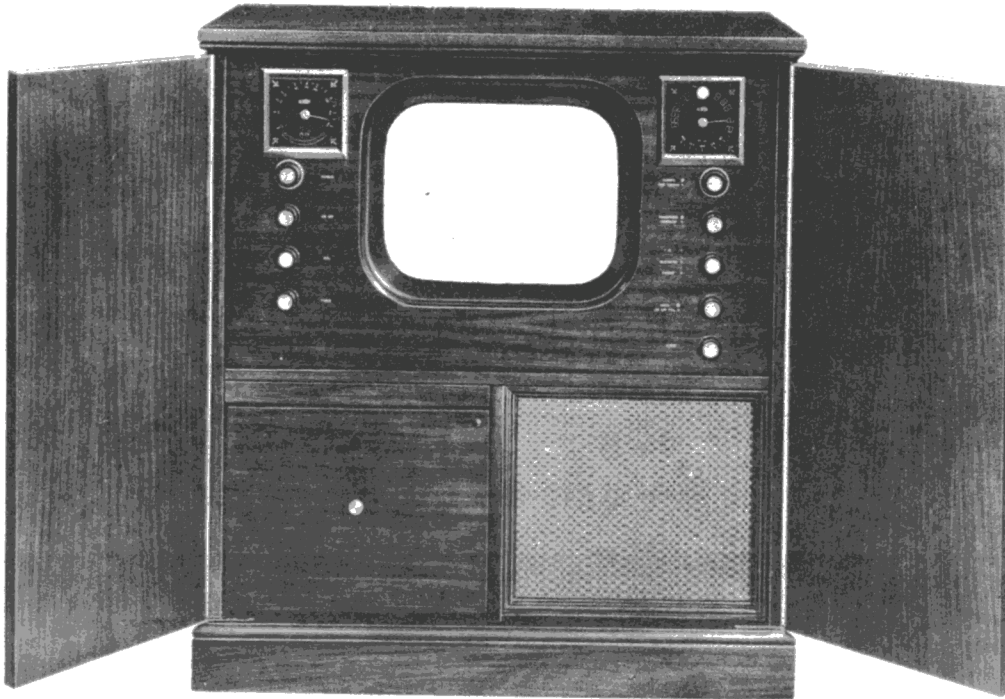
Revere



Brookville



Burlingame



## TARRYTOWN

<u>Model Number</u>	<u>Cabinet</u>	<u>Services</u>
RA-113-B7	Mahogany Console/Doors	AM, FM, TV and 3 Speed Record Player
RA-113-B8	Blonde Console/Doors	AM, FM, TV and 3 Speed Record Player

### RA-113 Combination Section

The Tarrytown tube complement is the same as that of the other RA-113 models plus six additional tubes used in the AM tuner chassis making a total of 32 tubes.

### RA-113 TARRYTOWN AM TUNER TUBE COMPLEMENT

<u>Tube Symbol</u>	<u>Tube Type</u>	<u>Tube Function</u>
V401	6BA6	RF Amplifier
V402	6BE6	Converter
V403	6BA6	IF Amplifier
V404	6SQ7	Detector and 1st Sound Amplifier
V405	6V6-GT	Audio Output
V406	5Y3-GT	Rectifier

MODELS RA-112-A1, RA-112-A2, RA-112-A3,  
RA-112-A4, RA-112-A5, RA-112-A6, RA-113-  
B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-  
113-B5, RA-113-B6, RA-113-B7, RA-113-B8

RA-113 TARRYTOWN ELECTRICAL CHARACTERISTICS

Average Power Ratings - (Line Voltage - 117 volts AC)

Television and FM positions - 200 watts

AM position - 70 watts

CRT High Voltage - (Line Voltage - 117 volts AC)

13 KV  $\pm$  1.5 KV at zero brightness.

Audio Power Output - (400 cycles)

1 watt across 3.2 ohm resistive load in place of speaker.

RA-112A RA-113 Section

INTRODUCTION

The Model RA-112A Teleset is produced in the following styles:

<u>Name</u>	<u>Model No.</u>	<u>Cabinet</u>	<u>Services</u>
Ardmore	RA-112-A1	Mahogany Open Console	FM and TV
	RA-112-A4	Blonde Open Console	FM and TV
Westerly	RA-112-A2	Mahogany Console/Doors	FM and TV
	RA-112-A5	Blonde Console/Doors	FM and TV
Mt. Vernon	RA-112-A3	Mahogany Console/Doors	FM and TV
	RA-112-A6	Blonde Console/Doors	FM and TV
	<u>Picture Tube</u>	<u>Speaker</u>	
All Models	19"	10"	

The Model RA-113 Teleset is produced in the following styles:

<u>Name</u>	<u>Model No.</u>	<u>Cabinet</u>	<u>Services</u>
Brookville	RA-113-B1	Mahogany Open Console	FM and TV
	RA-113-B2	Blonde Open Console	FM and TV
Revere	RA-113-B3	Mahogany Console/Doors	FM and TV
	RA-113-B4	Blonde Console/Doors	FM and TV
Burlingame	RA-113-B5	Mahogany Console/Doors	FM and TV
	RA-113-B6	Blonde Console/Doors	FM and TV
Tarrytown	RA-113-B7	Mahogany Console/Doors	AM, FM, TV and 3 Speed Record Player
	RA-113-B8	Blonde Console/Doors	AM, FM, TV and 3 Speed Record Player

MODELS RA-112-A1, RA-112-A2, RA-112-A3,  
 RA-112-A4, RA-112-R5, RA-112-R6, RA-  
 113-B1, RA-113-B2, RA-113-B3, RA-113-  
 B4, RA-113-B5, RA-113-B6, RA-113-B7,  
 RA-113-B8

Picture

Speaker

All Models 17 in. Rectangular 10" (Except Tarrytown 12")

The chassis used in the RA-112A and RA-113 Telesets is basically the same chassis that was used in the RA-111 models. The horizontal output and high voltage circuits have been modified to supply adequate sweep and high voltage to the larger picture tubes. Certain other circuit improvements as outlined in the circuit description portion of these notes have been made.

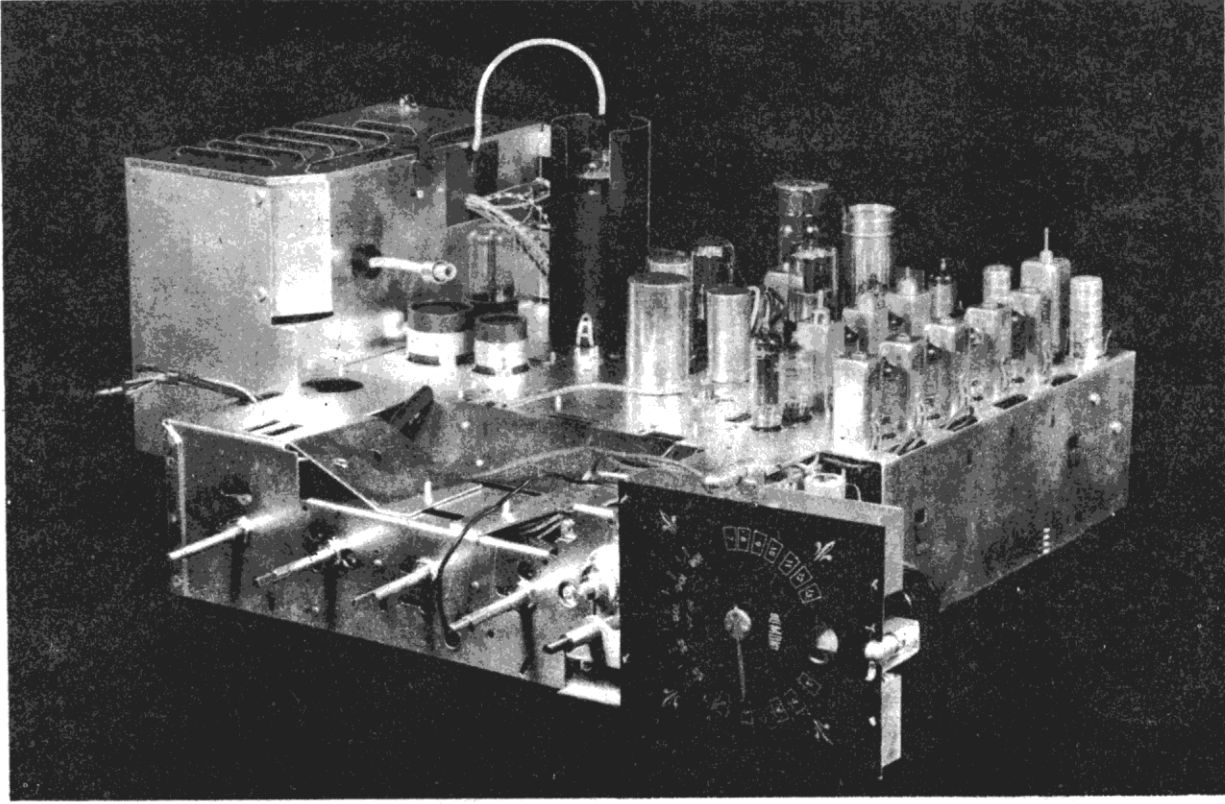


Figure 1 - RA-112A - RA-113 Chassis

RA-112A RA-113 TUBE COMPLEMENT

A total of twenty-six tubes, including the cathode-ray tube, the tuning indicator and three rectifiers are incorporated in this chassis.

<u>Tube Symbol</u>	<u>Tube Type</u>	<u>Tube Function</u>
V101	6J6	R.F. Amplifier
V102	6AK5	Mixer
V103	6AB4	V.H.F. Oscillator
V201	6AU6	1st Sound IF
V202	6AU6	2nd Sound IF
V203	6T8	Sound Discriminator, First Sound Amplifier and A.G.C. Clamp
V204	6AQ5	2nd Sound Amplifier
V205	6AU6	1st Video IF

V206	6AU6	2nd Video IF
V207	6AU6	3rd Video IF
V208	6BC5	4th Video IF
V209A	1/2 6AL5	Video Detector
V209B	1/2 6AL5	D.C. Restorer
V210	6AH6	Video Amplifier
V211	19AP4	Picture Tube (Used in RA-112A)
V211	17AP4	Rectangular Picture Tube (Used in RA-113)
V212	6BA6	Narrow Band Sync Amplifier
V213	6AL5	Sync and A.G.C. Detector
V214	6SN7-GT	Horizontal A.F.C. and Saw Generator
V215	6BG-6	Horizontal Deflection Amplifier
V217	6W4-GT	Damper
V218	5U4G	Rectifier
V219	6AU6	1st Sync Clipper
V220A	1/2 6SN7-GT	2nd Sync Clipper
V220B	1/2 6SN7-GT	Vertical Saw Generator
V221	6SN7-GT	Vertical Deflection Amplifier
V222	6AL7-GT	Tuning Indicator
V401	1X2	High Voltage Rectifier
V402	1X2	High Voltage Rectifier

RA-112A RA-113 ELECTRICAL CHARACTERISTICS

Average Power Ratings (Line Voltage - 117 volts AC)  
Television and FM positions - 200 watts

CRT High Voltage (Line Voltage - 117 volts AC)  
13 KV+ 1.5 KV at zero brightness

Audio Power Output (400 cycles)  
1 watt across 3.2 ohm resistive load in place of speaker.

RA-112A Picture Size

Dimensions: 13" x 17 3/8"  
Area: 208 square inches

RA-113 Picture Size

Dimensions: 11 1/8" X 14 1/2"  
Area: 150 square inches

RA-112A PHYSICAL CHARACTERISTICS

Cabinet Size

	<u>Height</u>	<u>Width</u>	<u>Depth</u>
Ardmore	40"	31 1/8"	22 11/16"
Westerly	40"	31 1/8"	23 3/4"
Mt. Vernon	40 1/2"	33"	24 1/2"

RA-113 PHYSICAL CHARACTERISTICS

Cabinet Size

	<u>Height</u>	<u>Width</u>	<u>Depth</u>
Brookville	39 3/8"	26 3/4"	20 15/16"
Revere	39 7/8"	26 3/4"	22 1/2"
Burlingame	39 3/8"	26 3/4"	21 7/8"
Tarrytown	39"	35 3/4"	22 1/2"

2.0 Circuit Description

2.1 RF Tuning Assembly

The RA-112A RA-113 Telesets incorporate the latest Du Mont Four

Section Inputuner. Up to and including serial no. 122695 in the RA-112A models and serial no. 132211 in the RA-113 models, the Inputuner used is electrically the same as that used in the RA-111A Telesets.

Starting with serial no. 122696 in the RA-112A models and serial no. 132212 in the RA-113 models the IF transformer in the plate circuit of the mixer is different than that in the above-mentioned tuner. The Inputuner schematic diagram appearing on the RA-112A RA-113 Service Sheet includes the new IF transformer in the mixer plate circuit.

The essential differences between this transformer and that previously used are as follows:

1. The coupling is fixed in the transformer. ( The coupling adjustment now consists of an adjustable coil on the receiver chassis.)
2. An additional trap to attenuate the sound carrier of the lower adjacent channel to which the Teleset is tuned is included in this transformer. This is an absorption type trap and is tuned in the alignment procedure for maximum attenuation of 27.75 mc. With the new IF's of 21.75 mc for sound and 26.25 mc for picture, the beat produced between the local oscillator and the lower adjustment channel sound carrier is now 27.75 mc instead of 27.9 mc.

All post war Du Mont Telesets normally utilized a 26.4 mc IF for the video carrier and 21.9 mc for sound. In some receivers, this resulted in strong beat interference on channel 7 as a result of the 8th harmonic (175.2 mc) of the sound IF (21.9 mc) beating against the video carrier of channel 7, (175.25 mc) and producing a 50 kc beat. The result was a streaking of the picture. Although this condition could be cured by certain modifications, a change to a lower IF (21.75 mc) resulted in the complete elimination of the beat.

All RA-112A Telesets beginning with serial no. 12702 and all RA-113 Telesets beginning with serial no. 13580 are aligned to the new IF's as outlined in the enclosed alignment sheet. The new IF's are 26.25 mc for video and 21.75 mc for sound.

## 2.2 Video IF Strip

The video IF strip used in the RA-112A - RA-113 Telesets is basically the same as is used in the RA-111A chassis. The important differences which can be readily be seen by comparing the two schematics are as follows:

A. All RA-112A Telesets starting with serial number 122696 and all RA-113 Telesets starting with serial number 132212 utilize a different type of transformer at Z204, the input to the IF strip. The important difference in this transformer is that the method of coupling from the Inputuner output to the IF strip input has been changed. This transformer change took place at the same time that the IF transformer in the plate circuit of the mixer stage was changed. The coupling adjustment in the receiver is now made by adjusting L213, which is mounted on the receiver chassis proper.

B. The fourth video IF tube (V208) has been changed from a 6AU6 to a 6BC5. The purpose of this change is to improve the overall sen-

MODELS RA-112-A1, -A2, -A3, -A4, -A5,  
-A6, RA-113-B1, -B2, -B3, -B4, -B5,  
-B6, -B7, -B8

sitivity and signal-to-noise ratio. In conjunction with this change the cathode resistor R231 was changed from a 120 ohm resistor to a 220 ohm resistor. In order to obtain proper alignment of this stage using a 6BC5, it was necessary to replace the transformer Z208 with a different type.

Other than the changes mentioned above, this strip is identical to the RA-111A.

### 2.3 Video Detector and Amplifier

The same tube lineup is used in this section as was used in the RA-111A.

R234, the 10K resistor that was connected across L202 in the early RA-111A models, was deleted. (All RA-111A models effective with chassis serial number 112214 also contained the same change.) In addition to the deletion of the resistor, the coil L202 was changed.

The purpose of these changes is to improve picture quality.

### 2.4 Sound IF Strip

As in the RA-111A, the sound take-off point is from the plate circuit of the first video IF stage. The coupling capacitor C280 has a value of 2.5 mmf in these models whereas it was 1.7 mmf in the early RA-111A models. The reason for this change is to improve sound attenuation.

The discriminator transformer Z203 has been changed. The purpose of the change is to produce more sound output. Examination of the schematic indicates the following changes:

The secondary winding of the discriminator is not center-tapped. Instead, two capacitors are connected across the secondary winding and the tap is taken off at the junction of these capacitors.

### 2.5 Audio Amplifier Section

The Audio Amplifier Section is practically identical to the RA-111A circuit.

The triode section of the 6T8 (V203) functions as the voltage amplifier. The output from this tube is then used to drive the sound output stage (V204) which uses a 6AQ5.

This chassis will also be used in a combination model to be known as the Tarrytown (includes AM radio and three speed record changer). Certain provisions have been made in the audio output stage for use in the Tarrytown only.

The AM radio used in the Tarrytown will include a tone control. The shielded lead shown between pin #1 of V204 and pin #1 of the connector J201 is used to connect the tone control in the AM tuner back to the grid of the audio output stage, thus permitting control of tone in the television chassis.

The short shown across R323 (grid circuit of V204) is not an error. This will be removed when the AM tuner is used. R323 is a new resistor and was not used on the RA-111A models. C279 (plate circuit of V204) will also be removed when this chassis is used in the Tarrytown.

### 2.6 Composite Sync Section

MODELS RA-112-A1, RA-112-A2, RA-112-A3,  
RA-112-A4, RA-112-R5, RA-112-R6, RA-113-  
B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-  
113-B5, RA-113-B6, RA-113-B7, RA-113-B8

The composite sync section is substantially the same as it was in the RA-111 Telesets.

The differences in the circuit between the RA-111A and the RA-112A and RA-113 Telesets are as follows:

The video IF signal is coupled from the cathode (pin 1) of the video detector (V209A) to the grid of the narrow band sync amplifier (V212) through a 20 mmf capacitor, C298. In the RA-111A Telesets, this connection was direct with no capacitor. A coil, identified as L214, is connected from grid to ground in the narrow band sync amplifier stage (V212). C298 and L214 were added to reduce sync compression. The remainder of the narrow band sync amplifier is identical to the RA-111A.

The sync detector half of V213 remains unchanged but the AGC circuit is slightly different. The change consists of the addition of a "Local-Distant" switch to permit the reduction of AGC voltage when operating the Teleset in fringe areas. This circuit was included in the later RA-111 Telesets.

## 2.7 Vertical Sweep Section

The vertical sweep circuit is practically identical to that used in the RA-111A.

The differences in the circuit between the RA-111A and the RA-112A and RA-113 Telesets are as follows:

R288 in the plate circuit of V220A, is changed from 2.7K to 3.3K to improve vertical sync.

C271 in the grid circuit of V220B is changed from .003 to .01 mf and R293 is changed from 1.8 meg to 390K to reduce the pulse voltage on the vertical deflection amplifier plate.

R296 in the plate circuit of V220B, is changed from 5.1K to 4.7K in order to reduce the packing at the top of the raster.

A 30 mf capacitor (C294) shown below V220B is added in series with C248A to reduce the possibility of C248A breaking down inasmuch as this part of the circuit is connected to the boosted B+ line.

The plate circuits of the vertical saw generator (V220B) and vertical deflection amplifier (V221) are returned to the boosted B+ line from terminal 5 of the flyback transformer (T401). This source of voltage has improved regulation under varying operating conditions. It also provides a higher voltage for the plates of the vertical deflection amplifier than is available from the low voltage supply. This insures adequate vertical size for the larger picture tube sizes.

The vertical output transformer usually used in Du Mont Telesets had a turns ratio from primary to secondary of 10 to 1. The vertical output transformer used in these Telesets has a turns ratio of 11 to 1. The specifications of the vertical output transformer were changed to accommodate the yoke used with these models.



## 2.8 Horizontal Sync, Sweep and High Voltage Section

Five tubes are responsible for the function of horizontal sync, sweep and high voltage. The horizontal AFC and saw generator circuit (V214) is practically identical to that used in the RA-111A. The horizontal deflection amplifier (V215) has been replaced with a 6BG6 because of the greater sweep requirements of the Teleset. The circuitry of the high voltage section has been modified by the incorporation of cascade voltage doublers utilizing two 1X2 tubes (V401 and V402). This is necessary because of the increased high voltage required in the larger Teletron sizes. A single 6W4 (V217) performs the function of damping, as in the RA-111A.

## 2.9 Horizontal Deflection Circuit

The horizontal deflection amplifier circuit is substantially the same as that used in the RA-111A except that the cathode bias resistor and its associated condenser has been deleted and the value of the screen dropping resistor R271 has been changed due to the different operating characteristics of the 6BG6.

Examination of the simplified schematic shown on the following page shows that the secondary of the flyback transformer T401 (terminals 5 and 6) is essentially in series with primary, thus forming an auto-transformer circuit. This configuration permits tighter coupling between primary and secondary windings, resulting in a highly efficient output circuit and thus permitting the use of smaller wire size in order to produce a more compact transformer. Tighter coupling also reduces the possibility of Barkhausen oscillation. The screen voltage for the 6BG6 (V215) is taken from terminal 5 of T401. This source of voltage has improved regulation under varying operating conditions.

V215  
6BG6

A horizontal size switch (S401) is used in this circuit. With this switch in the position shown in the schematic, maximum picture size will be obtained, but there will be no control of the size because L401 is not in the circuit. Somewhat reduced size will be obtained when S401 is turned to connect its pins 1 and 3 together, but then the horizontal size control, L401, will be effective. Further reduction in size will occur when S401 is turned to connect L403 in parallel with L401 and the size winding of T401.

Boos  
for l  
& AF  
defl

The sweep signal is capacitively coupled to the horizontal deflection coil in order to prevent DC from flowing through the yoke and depositing the beam. A 68 mmf capacitor is shunted across one-half of the horizontal deflection coil to prevent ringing in the yoke. If ringing persisted beyond the time required for horizontal retrace, vertical white and black bars would appear on the left side of the raster.

No static damping resistors are needed across the secondary of the horizontal output transformer because the application of the boosted voltage to the vertical deflection circuit provides adequate damping.

The horizontal linearity control adjusts the point at which the damper tube stops providing the sweep energy and the 6BG6 starts. Therefore, this control affects the linearity at the center of the picture where this effect takes place.

## 2.10 High Voltage Supply

The high voltage supply used in this Teleset is a voltage doubler type using two 1X2 rectifiers in cascade. The method of operation



A separate filament transformer (T205) insulated for 5000 volts is used for the 6W4 (V217) due to the higher peak voltage found in this circuit.

A 100K resistor (R324) has been added from one side of the AC line to ground to reduce the shock hazard.

Three dial lamps (I201, I202 and I203), rather than one, are used and the dial lamp dropping resistor (R309) found in the RA-111A has been deleted in order to adequately light the different type of dial used in these Telesets.

The values of R280 and R281 have been changed due to the different focus coil (L209) used in these Telesets.

### 3.0 Installation Section

The serviceman should encounter no particular difficulty when installing one of the RA-112A or RA-113 Telesets. It is suggested, however, that if these are the first Du Mont Telesets he will install, that reference be made to the Installation Section of the RA-111A Service Notes for further information.

Particular attention should be given to the use of the proper coaxial cable. This will depend upon the signal strengths of the stations at the location where the set is to be installed.

### 4.0 Service Sheets

Although the basic RA-111A chassis is used in these models, sufficient changes warranted the issuance of a special schematic diagram.

As indicated on the RA-112A - RA-113 Alignment Sheet, the procedure will apply to the RA-111A Telesets as well as these models.

No new block diagram was issued since the block diagram will be the same as the RA-111A except for the additional tubes and, in the case of the 4th video IF and horizontal deflection amplifier, different tubes.

All adjustments on this model are identical to those in the RA-111A and the servicemen should refer to the "Block Diagram, Adjustments and Trouble Shooting Sheet for the model RA-111A".

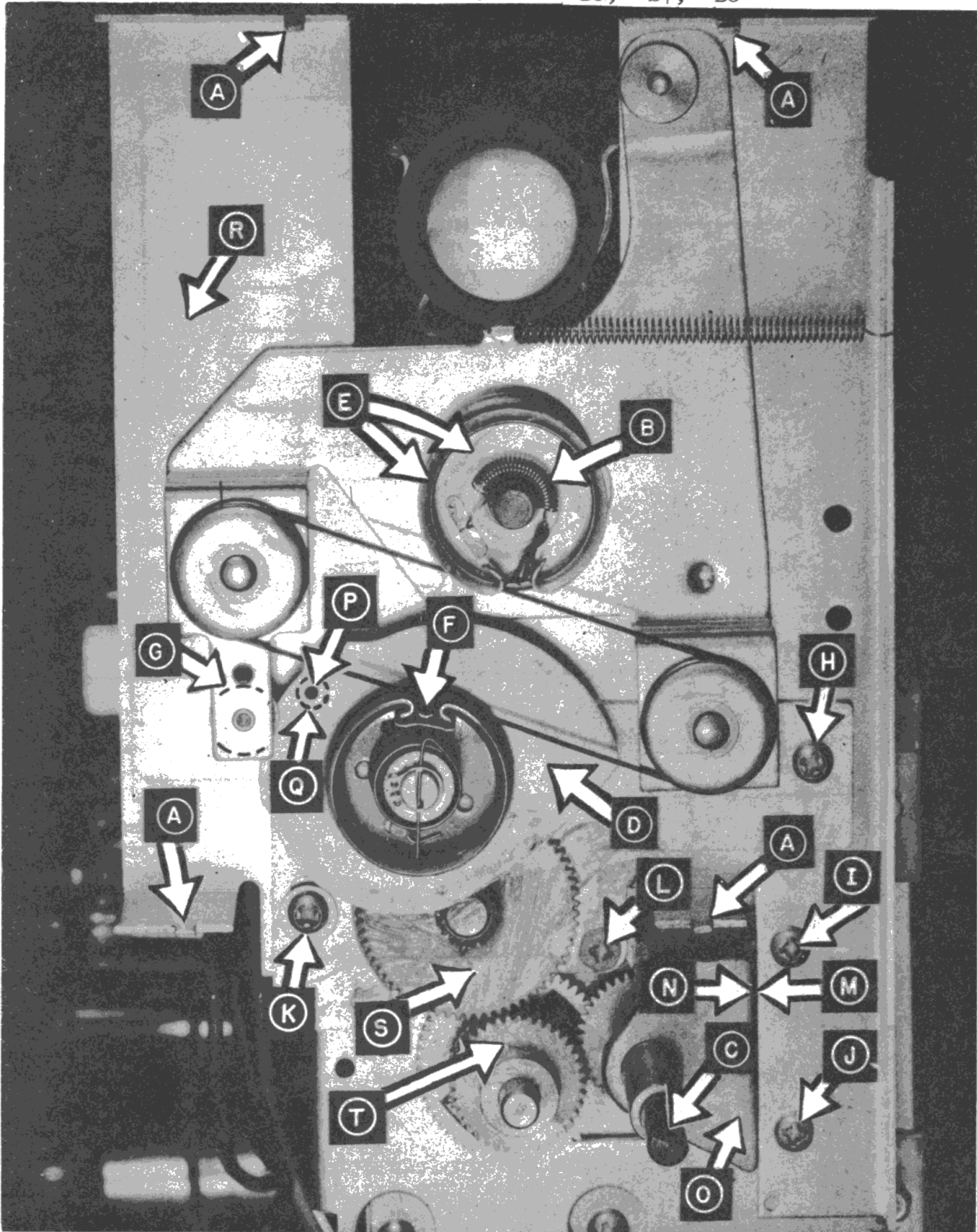
### 5.0 Service Procedures and Troubleshooting Hints

This section of the service notes for the RA-112A RA-113 Telesets will include information pertaining to various servicing and troubleshooting procedures that require detailed information. Additions to this section will be made whenever necessary.

#### NOISY INPUTUNER

(See Section 5 of the RA-111A service notes for information on cleaning the Inputuner.)

MODELS RA-112-A1, -A2, -A3, -A4, -A5,  
-A6, RA-113-B1, -B2, -B3, -B4, -B5,  
-B6, -B7, -B8



INPUT TUNER DIAL MECHANISM

(for serial numbers below 126293 and 135323)

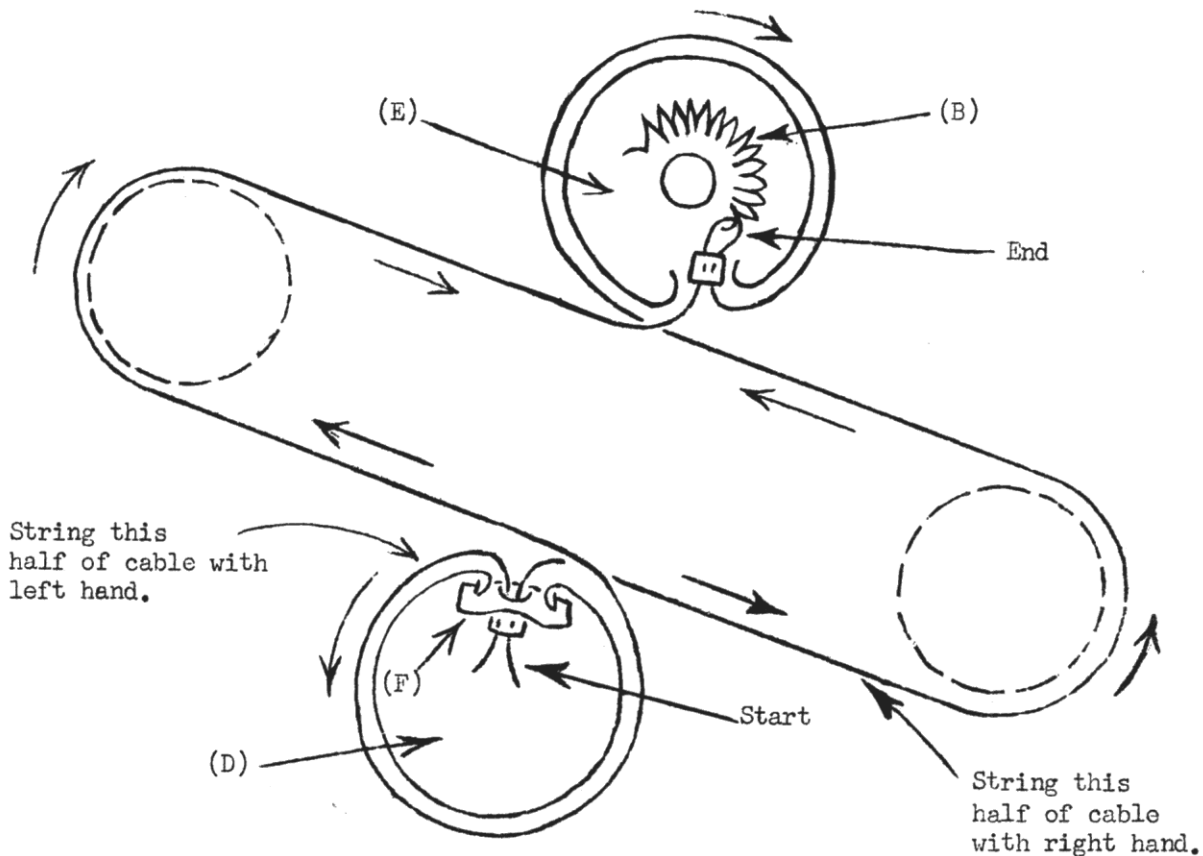
8/4/50

PROCEDURE FOR REPLACEMENT OF DIAL CABLE (30008310)

1. Remove three pilot lights, with their clips.
2. Remove dial pointer by pulling outward.
3. Twist four tabs (A) holding dial to mounting plate, and remove dial.
4. Remove defective dial cable, taking care to retain cable tension spring (B). If spring is missing, it may be obtained by ordering part #30014461.
5. Rotate Inputuner tuning shaft (C) full counter-clockwise. This will place the cam assembly (D) in the position shown.
6. Place pointer pulley (E) in position shown.
7. Fasten cable tension spring (B) to loop at end of dial cable.
8. String dial cable as shown, starting by placing cable guard (F) in position. Use both hands and string two halves of cable as illustrated. Make sure that cam follower (G) is not disengaged from cam (D).

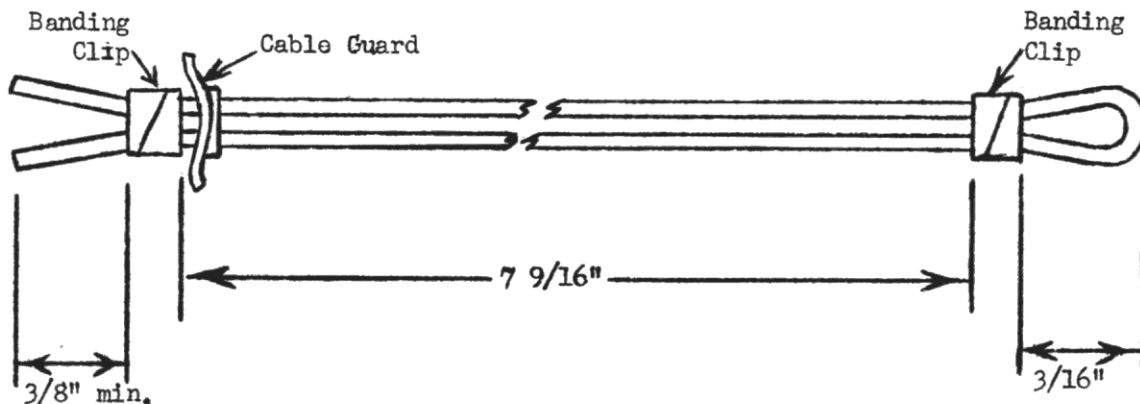
Note: If insufficient tension in cable, run cable tension spring (B) around pointer pulley (E) hub in direction opposite to that shown.

9. Replace dial, fastening by slight twisting of four tabs (A).
10. Replace three pilot lights.
11. Place Teleset in operation, tune in a known high channel station, and place dial pointer in correct position. Pointer should then fall in proper calibration for lower channels. If, necessary, minor adjustment of pointer position may be made to correct calibration. Take care that pointer does not rub against dial at any point.



DIAL STRINGING SKETCH

If dial cable not readily available, make up as follows:



#### PROCEDURE FOR DIAL CALIBRATION

(RA-112A below serial #126293 and RA-113 below serial #135323)

1. Remove three pilot lights, with their clips.
2. Remove dial pointer by pulling outward.
3. Slightly twist four tabs (A) holding dial to mounting plate, and remove dial. Care should be exercised not to break tabs(A).
4. If dial cable requires restringing, follow procedure shown previously.
5. If side (M) of dial mechanism is not parallel with side (N) of bearing bracket (O), loosen screws (I), (J) and (L) and square dial mechanism by aligning sides (M) and (N). Then tighten screws (I), (J) and (L).
6. Loosen screws (H) and (K).
7. Turn tuning shaft (C) fully counter-clockwise.
8. Turn cam (D) one turn clockwise until hole (P) in cam is aligned with hole (Q) in dial plate (R) behind cam (D).
9. Push gear (S) downwards until gears (S) and (T) mesh completely. Back gear (S) off slightly to prevent binding.
10. Re-check alignment of holes (P) and (Q).
11. Tighten screws (H) and (K).
12. Cautiously rotate tuning shaft (C) to check for binding of gears (S) and (T). If binding occurs, repeat steps 8, 9, 10 and 11.
13. Replace dial, fastening by slight twist of four tabs (A)!
14. Replace three pilot lights.
15. Return tuning shaft (C) to fully counter-clockwise position. Replace dial pointer so that it falls on high frequency side of channel 13 box by the width of the pointer.
16. Place Teleset in operation. Pointer should fall in proper calibration on all channels. Minor adjustment of pointer position may be made to correct calibration, if necessary, or four flanges at (A)(not tabs) may be bent slightly downwards. This will move calibration upwards on high channels (7-13) and downwards on low channels (2-6). Take care that neither pointer shaft nor pointer rubs against dial at any point.

Note: Calibration has been altered in some cases reported from the field due simply to the pointer sticking against the plastic dial window. To overcome this condition, the bolts holding the chassis mounting boards should be loosened and the chassis moun-

MODELS RA-112-A1, RA-112-A2, RA-112-A3, RA-112-A4, RA-112-A5, RA-112-A6, RA-113-B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-113-B5, RA-113-B6, RA-113-B7, RA-113-B8

ting board moved backward as far as possible. The bolts should then be re-tightened. This will provide sufficient clearance between the dial pointer and the plastic window. The pointer should then be reset according to steps 15 and 16 above.

PROCEDURE FOR REPLACEMENT OF DIAL CABLE ON SKIP BAND TUNER 89003911  
(used in RA-112A above serial #126293 and RA-113 above serial #135323)

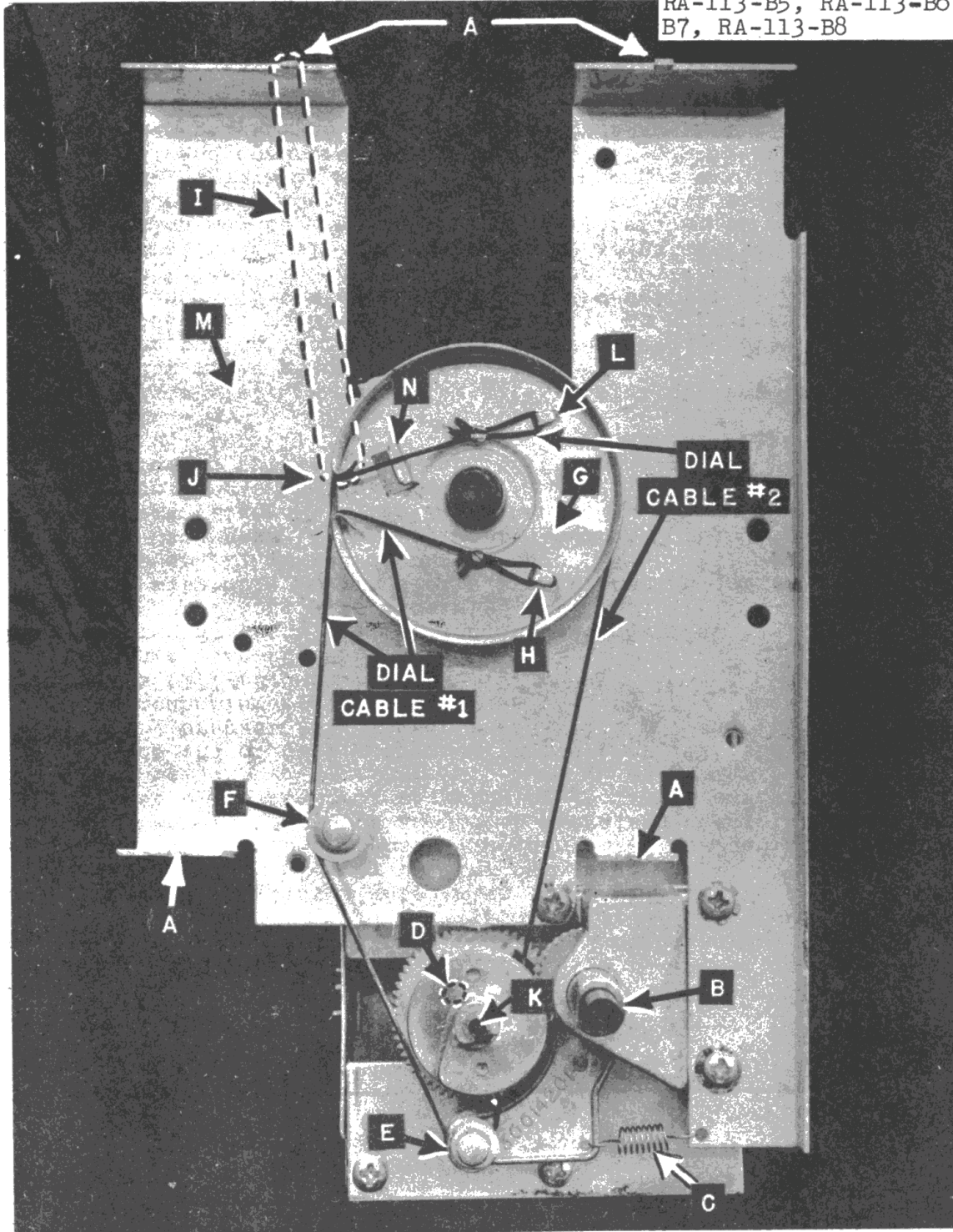
1. Remove three pilot lights with their clips.
2. Remove dial pointer by pulling outward.
3. Twist four tabs (A) holding dial to mounting plate and remove dial.
4. Remove defective dial cable. (It consists of two identical cables, referred to as #1 and #2.)
5. Rotate the Inputuner tuning shaft (B) fully counter-clockwise (extreme high frequency position) and place pointer pulley (G) in position shown in dial stringing sketch.
6. Be sure that idler tension spring (C) is in place. If it is missing, it may be obtained by ordering part #30015901.
7. Wedge knotted end of dial cable #1 so that it is held in place by post on gear behind spiral pulley at (D).
8. String dial cable (1 in direction of arrows shown on dial stringing sketch. Dial cable #1 must ride in idler pulleys at (E) and (F) and must be strung on inside of groove of pointer (G) towards dial plate (M), making one complete turn around pointer pulley (G). Make sure that idler pulleys (E) and (F) are free to turn end move in and out.
9. Insert loop end of dial cable #1 over lance (H).
10. Hold pointer pulley (G) in position shown in photograph with rubber band (I) placed temporarily between (J) and upper left-hand tab (A).
11. Insert knotted end of dial cable #2 in hole at (K) and string in counter-clockwise grooves approximately four turns as shown in sketch.
12. String dial cable #2 in direction of arrows around pointer pulley (G) approximately one-half turn, as shown. Dial cable #2 must be strung on outside of groove of pointer pulley (G) away from dial plate (M).
13. Insert loop end of dial cable #2 over lance (L). Center dial cable #2 over extrusion(N).
14. Remove rubber band (I).
15. Cement knotted end of dial cable #2 in plate at (K).
16. Replace dial, fastening by slight twist of four tabs (A).
17. Replace three pilot lights.
18. With tuning shaft (B) fully counter-clockwise, replace dial pointer so that it falls just inside of high frequency side of channel 13 box by the width of the pointer.
19. Place Teleset in operation. Pointer should fall in proper calibration on all channels. Minor adjustment of pointer position may be made to correct calibration, if necessary. Take care that pointer does not rub against dial at any point.

PROPER POSITION OF AGC LOCAL-DISTANT SWITCH

If a condition is encountered in a strong signal area where the strongest station rolls vertically, whereas other stations hold sync properly, the trouble may be caused by improper setting of the local-distant switch. If the local-distant switch is set at the distant position in a strong signal area, it is possible that sync compression may result on the strongest stations, thus causing the picture to roll.

MODELS RA-112-A1, RA-112-A2, RA-112-A3, RA-112-A4, RA-112-A5, RA-112-A6, RA-113-B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-113-B5, RA-113-B6, RA-113-B7, RA-113-B8

RA-112A - RA-113 Section



SKIP BAND TUNER DIAL MECHANISM  
(for serial numbers above 126293 and 135323)

8/4/50



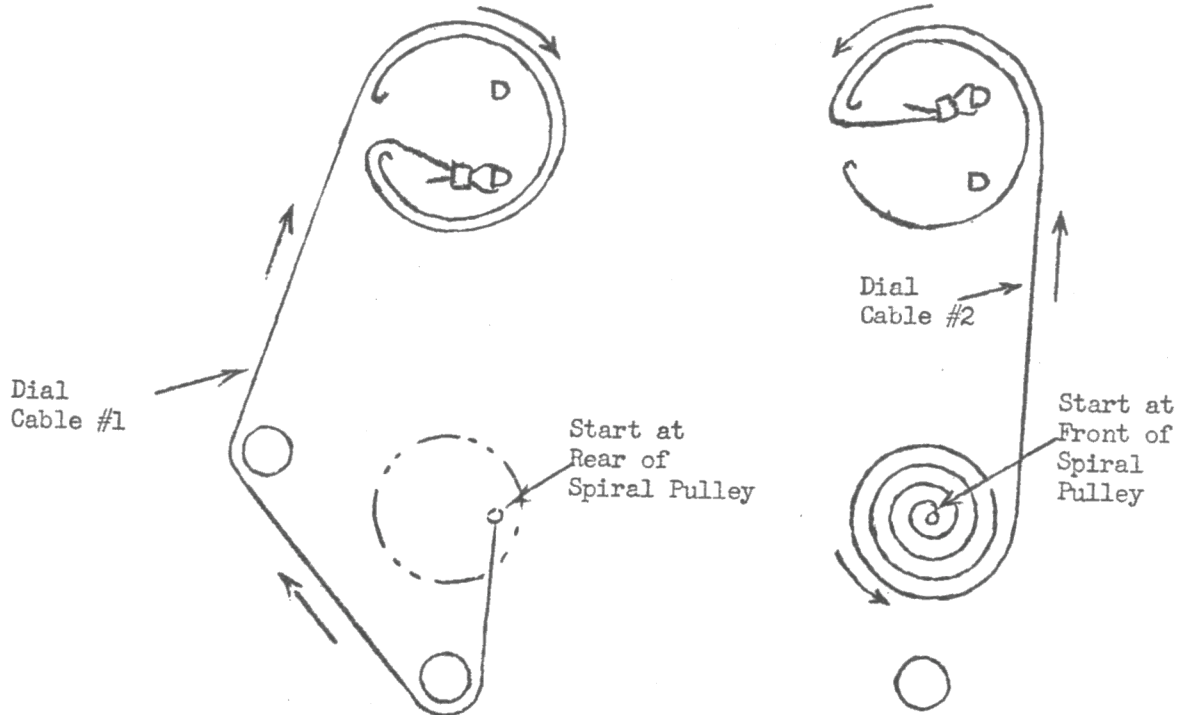
### REDUCTION OF AM RADIO INTERFERENCE

Several cases of AM radio interference caused by sweep radiation have been reported. By-passing each side of the AC line at the Teleset with .02 mfd, 600 volt capacitors will reduce this interference. The capacitor leads should be kept as short as possible. The part number of these capacitors is 03018570. This change is incorporated in RA-112A Telesets beginning with serial number 1211601 and RA-113 Telesets beginning with serial number 1313901.

### IMPROVEMENT OF SOUND SENSITIVITY

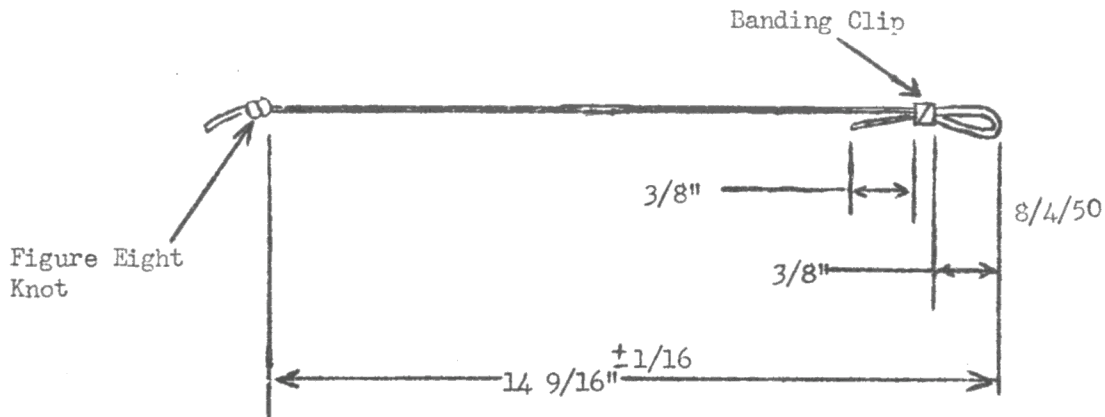
In any location where it is found that the sound output is insufficient, it may be substantially increased by making the following simple modification:

Connect a 10 mfd (or larger), 25 volt capacitor in parallel with R126 the cathode resistor of the 6AQ5 sound output stage. The part number for the 10 mfd, 25 volt capacitor is 03016730. This capacitor is being installed in current production.



DIAL STRINGING SKETCH  
(above serial #126293 and #135353)  
(Skip Band Tuner)

If dial cables are not readily available, make up as follows (two required):



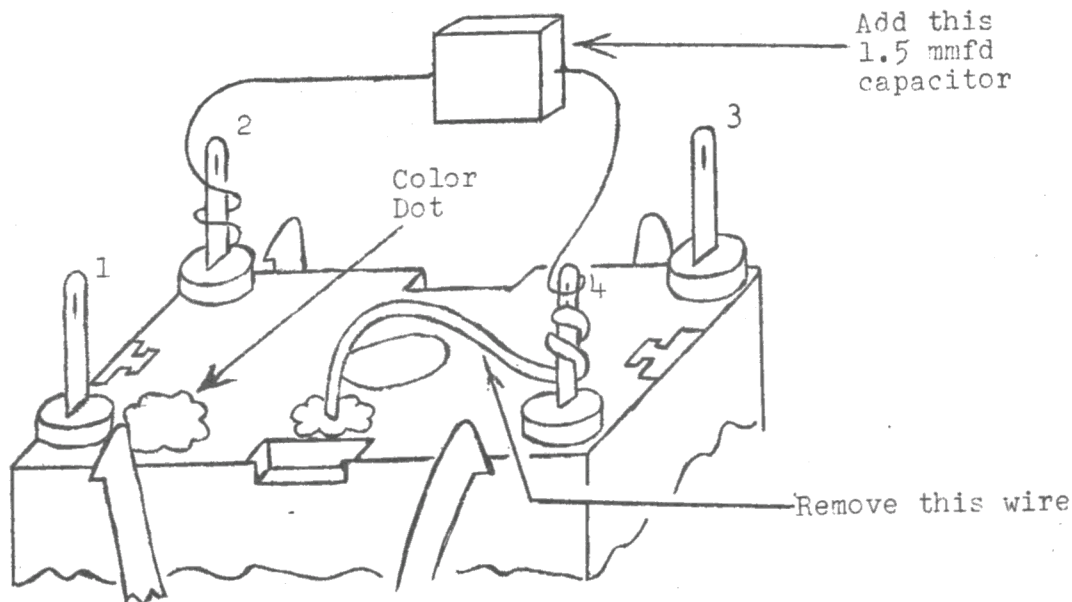
## ION TRAP MAGNET ADJUSTMENT

You have probably noticed that on current Telesets it is necessary to place the ion trap magnet over the base of the cathode-ray tube in order to get the correct adjustment for maximum brightness.

Although contrary to the installation instructions, this new position is the result of a slight change in the design of the electron gun in the cathode-ray tube. Due to this design change, the magnetic field necessary for proper beam bending is decreased. Therefore, the position of the magnet indicates that it is too strong to be placed on the glass neck and, therefore, must be placed back over the base. Under no conditions should this magnet be placed next to the focus coil.

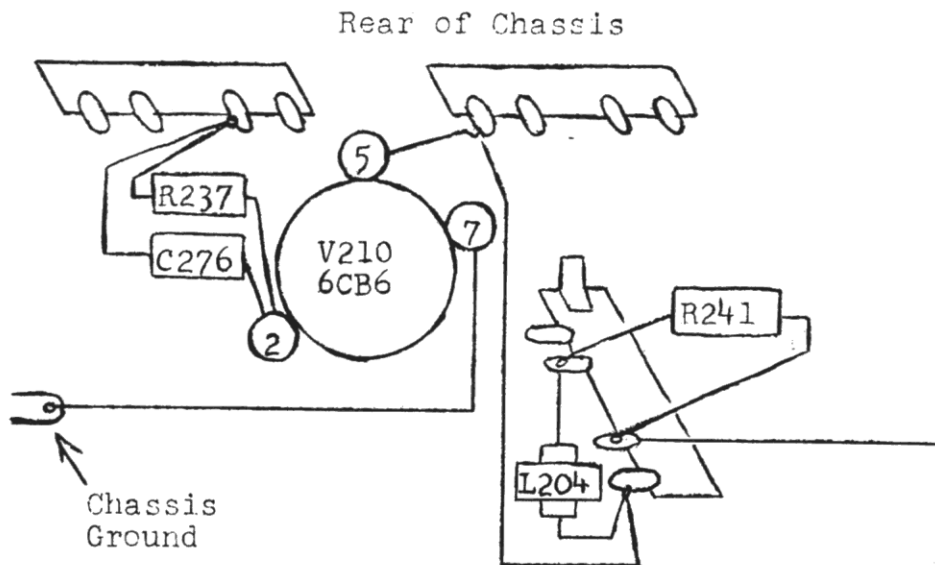
## DEFECTIVE VIDEO IF TRANSFORMERS

Some complaints of breakdown of the ceramic coupling condenser in the video IF transformers have been received. The condition encountered was an arc-over between the end of the silvered ceramic tube and the bare wire that fits in it. These transformers are used in the RA-112A and RA-113 Telesets. The condition was corrected by the use of a synthetic coated wire. It is not necessary to replace the entire transformer to correct this defect. Instead, the bare wire should be removed from the ceramic tube and a 1.5 mmfd 400 volt type GA-3 Stackpole capacitor, or equivalent, should be connected between terminals 2 and 4 (grid to plate) of the transformer. After making this change, a slight amount of rephasing of the grid and plate coils of the respective transformers will usually be necessary.

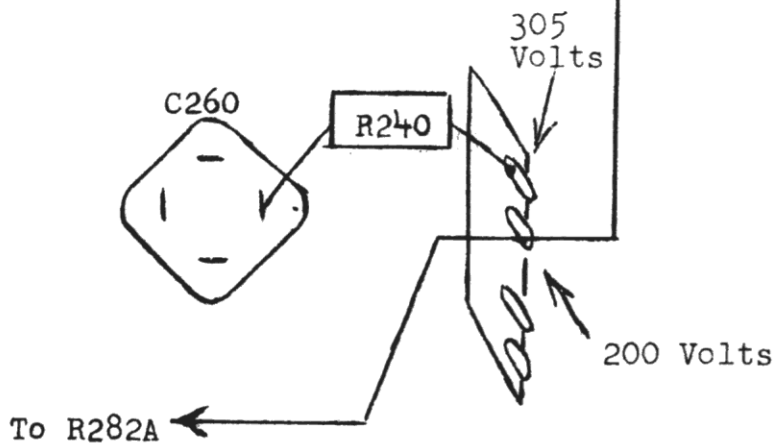


MODELS RA-112-A1, RA-112-A2, RA-112-A3,  
RA-112-A4, RA-112-A5, RA-112-A6, RA-113-  
B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-  
113-B5, RA-113-B6, RA-113-B7, RA-113-B8

GENERAL SECTION  
SUBSTITUTION OF TUBES



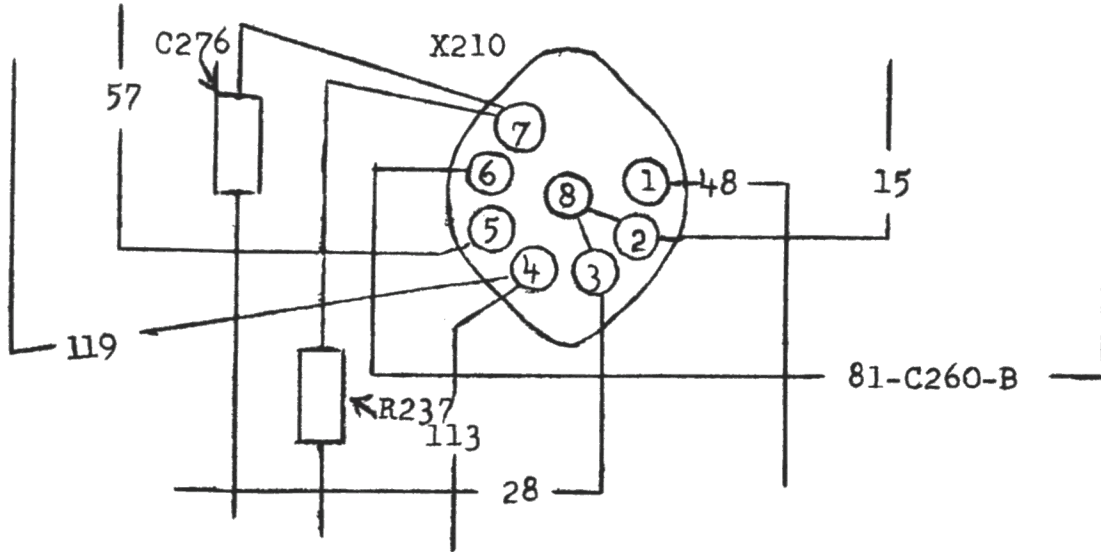
This wire is removed from 305 volts and reconnected to 200 volts. →



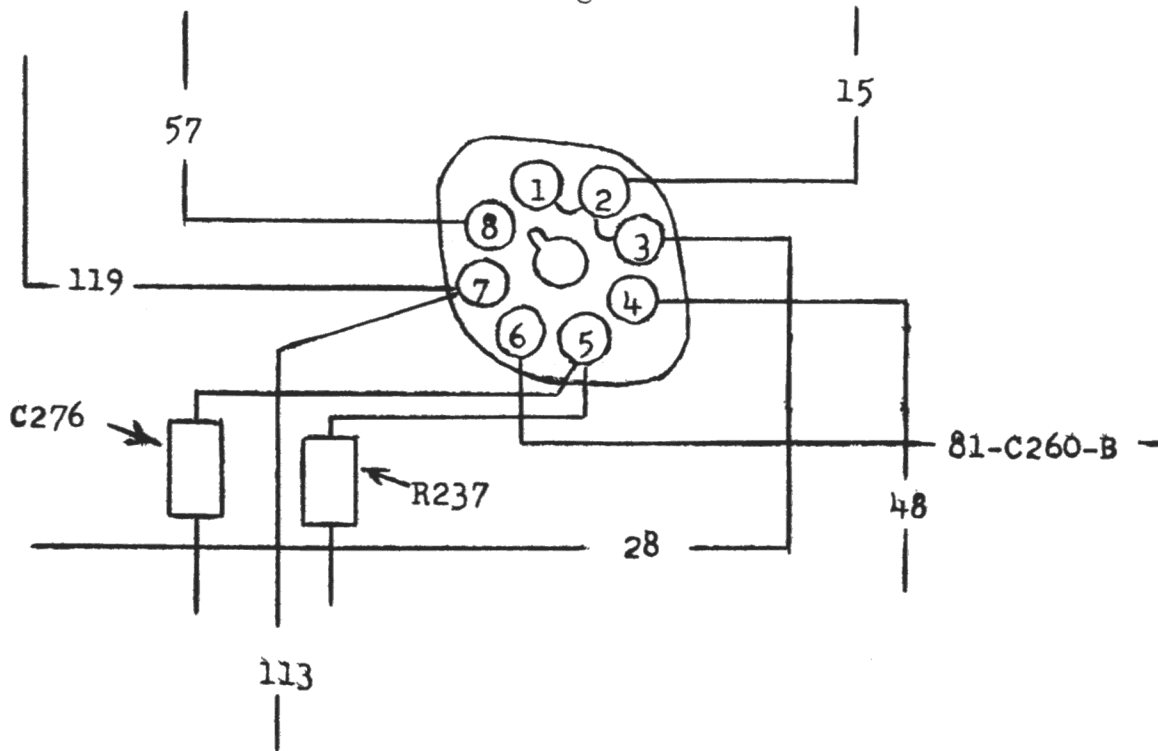
Rewiring for 6CB6 Substitution  
In Video Amplifier Stage

GENERAL SECTION

The wiring and circuit changes are shown on this page, G-14C and the following page, G-14D.



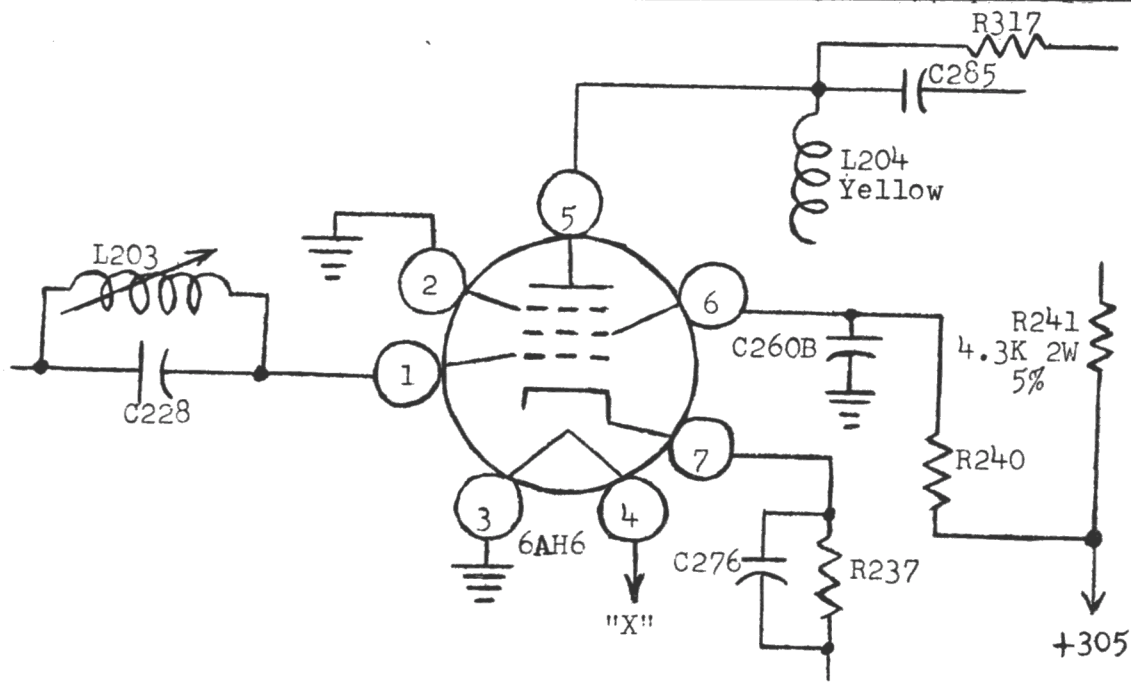
Present Wiring of 6AH6



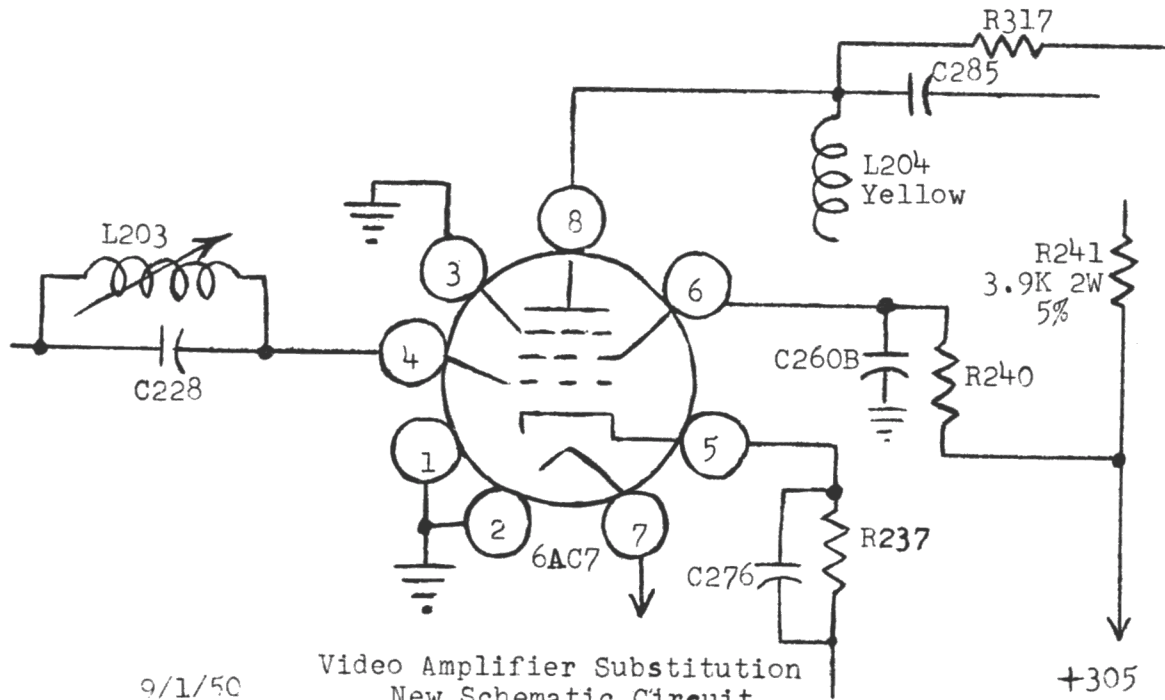
New Wiring for 6AC7

G-14C

9/1/50



Video Amplifier Substitution  
Present Schematic Circuit



Video Amplifier Substitution  
New Schematic Circuit

9/1/50

CRITICAL TUBE SUBSTITUTIONS

(4811) 1. The type 6BA6 tube may be used as a replacement for the type 6AU6 in the first and second video IF stages, providing that both 6AU6's are replaced by two 6BA6's simultaneously. (This substitution may be made in the field in any of the current Tele-sets.)

(4812) 2. A type 6CB6 tube may be substituted for the 6AU6 in the second sound IF amplifier of the RA-112A and RA-113. This substitution requires the addition of a tube shield, part number 42002530, and a shield base, part number 42002540. The latter may be readily soldered in place in the field, rather than riveted or bolted.

(4813) 3. A 6CB6 may be substituted for the 6AH6 video amplifier, V210, in the RA-112A and RA-113 without any component changes but with a simple wiring change. Pins 2 and 7 must be interchanged and the plate circuit must be tied to a 200 volt point rather than 305 volts, as shown in the sketch following.

(4814) 4. A 6BC5 may be substituted for the 6AU6 first sync clipper, V219, in the RA-112A and RA-113. This change does not require the addition of parts or wiring.

(4789) 5. The type 6AC7 may be substituted for the 6AH6 video amplifier in the RA-112A and RA-113 Telesets. This tube is not a direct substitute and several items will have to be changed. These are as follows:

- (a) The socket is to be changed from a miniature (part number 34001220) to an octal (part number 34002380).
- (b) R241 is to be changed from 4.3K 5% 2W (part number 92036631) to 2 3.9K 5% 2W (part number 02036620 alternate parts are: 02046620 and 02056620).

Any of the above substitutions that have been made can be determined by identifying the code number stamped on the back of the chassis and referring to the following table. Normally, you will find a large letter stamped on the rear of the chassis. Alongside of this letter will be a number. The significance of the letter designation will be found in the service notes pertaining to the model Teleset in question, providing it has a bearing on the service information. The numerical designation refers to one of those listed below and thus indicates the substitutions that are made.

Obviously, future additional substitutions will result in higher code numbers (5, 6, etc. for example). However, these code numbers will apply each time the substitution is made.

<u>Substitution</u>	<u>Code Stamped on Chassis</u>	<u>Model</u>	<u>Teleset Serial Numbers Affected</u>
4813	1	RA-113	1311027 to 1311736, Incl. 1312719 to 1312999 "
4813, 4814	2	RA-113	1311737 to 1312718 "
4811, 4814	3	RA-112A	1213901 to 1214650 "
4811	4	RA-112A	1214651 - still in effect.

Although any of the above substitutions may be made in the field to Telesets not already incorporating these changes, it is important that the combination of substitutions 4811 and 4813 not be made together. The reason is that if both substitutions are applied to one set, a loss of gain will result. This will not be apparent in the strong signal areas. However, in the weak signal areas, the decrease in sensitivity will be noticed.

The substitution listed below has been incorporated in the chassis designated under the heading "Serial Numbers". No code number appears on these chassis as this procedure was not in effect at the time the substitution was made.

<u>Substitution</u>	<u>Model</u>	<u>Serial Numbers</u>	<u>MODELS</u>
4789	RA-112A	1210824 to 1212823	RA-112-A1, RA-112-A2, RA-112-A3, RA-112-A4, RA-112-A5, RA-112-A6, RA-113-B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-113-B5, RA-113-B6, RA-113-B7, RA-113-B8

## 6.0 Production Changes

### Change #1 (M-117)

On Some early runs of RA-112A and RA-113 chassis, the sound discriminator transformer Z203 which was used was the same as that used in the RA-111A chassis. The circuit diagram of the discriminator circuit using the old type transformer is the same as that shown on the RA-111A Schematic Diagram (second edition, May 8, 1950).

This change with the addition of C299, coupling capacitor, is shown on the RA-112A, RA-113 Schematic Diagram (first edition, July 3, 1950) and was first incorporated in the following chassis starting with the serial number shown:

RA-112A - #123594  
RA-113 - #132957

Purpose of Change - To increase the sound sensitivity.

### Change #2 (M-132)

This change was made to alleviate interference on channel 7 by adding capacitor C230, .005 mf from pin 4 of V203 to ground. This change is shown on the RA-112A and RA-113 Schematic Diagram (first edition, July 3, 1950).

This change was first incorporated in the following chassis starting with serial number shown:

RA-112A - #12029  
RA-113 -- #13497

### Change #3 (M154) (ECN-4418)

The following changes are made to relieve regeneration, and to increase accompanying sound attenuation.

1. Add a 10K, (R305) 1/2 watt resistor across L202.
2. Add resistor R272, 68K ohms, across Z208-1 and Z208-2.
3. Change a .005 capacitor C230 from present location, pin 4 of V203 to ground, and connect it from ground to pin 4 of V207.
4. Change L213 from part #21005902 to part #210066781. This coil has lower inductance range obtained by using fewer turns.
5. Redress and shorten lead from junction of R237, C276 (cathod circuit of video amplifier, V210) to contrast control R239A, as shown in the sketch. Keep this lead away from the Inputuner.
6. Capacitor C290, .005 mf condenser is connected at junction of R246 and S135 volt line to ground.
7. Change C238 from .001 paper to .001 ceramic or mica, part #03015810 or part #03020730; and move to AGC lead closest to narrow band sync shield.
8. Add L205, part #21004465 between video detector and video detector peaking coil.
9. Add tube shield on 6BC5 fourth video IF amplifier tube.
10. L201 is to be changed from part #21006629 to part #21006627.

MODELS RA-112-A1, RA-112-A2, RA-112-A3, RA-112-A4, RA-112-A5, RA-112-A6, RA-113-B1, -B2, -B3, -B4, -B5, -B6, -B7, -B8

New parts are identified as follows:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
C238	03015810	Cap Ce .001 mf 20% 350V
	03020730	
C290	03015610	Cap Ce .005 mf min
L201	21006627	Coil Video Peaking
L205	21004465	Coil Video Peaking
L213	21006781	Coil Coupling
R272	02031990	Res F C 68K 10% 1/2W
	02041990	
	02051990	
R305	02031890	Res F C 10K 10% 1/2W
	02041890	
	02051890	
	42002530	
	42002540	Base Shield

These changes were first incorporated in the following chassis starting with the serial number shown:

- RA-112A - #125274
- RA-113 - #134415

All Telesets which have the above changes made - from change #1 to change #3 are stamped with letter "F" on rear of chassis.

Change #4 (M-164)

The following change is made on the RA-113 chassis only:

Resistor R296 (Pin 2, V220B) is changed from 4.7K to 5.1K.

New part is identified as follows:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
R296	02030650	Res F C 5.1K 5% 1/2W
	02040650	
	02050650	

Purpose of Change

Change is made due to a difference in the DC resistance of the yokes used in the RA-112A and RA-113. This change was first incorporated in RA-113 chassis #138672 and letter "H" is stamped on rear of chassis.

Change #5 (M-169)

The following change is made in order to provide a glass window dial in place of the plastic window. The part should read as follows in the Miscellaneous Parts List for the RA-112A and RA-113.

<u>Part Number</u>	<u>Description</u>
45002491	Window dial



Change #6 (M-172)

Capacitor C216, 10 mf is added in parallel with R216, 270 ohm, cathode resistor of 6AQ5 second sound amplifier.

New part is listed as follows:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
C216	03016730	Cap E 10 mf 25V
	03014100	
	03015310	

Purpose of Change - To increase the sound sensitivity.

Change #7 (M-188)

Add capacitors C304 and C305, .02 mf condensers from each side of the AC line to ground.

New parts are identified as follows:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
C304	03018570	Cap Pa .02 mf 20% 600V
	03100230	
C305	Same as C304	

Purpose of Change - To reduce sweep radiation.

This change was first incorporated in the following chassis starting with the serial numbers shown:

RA-112A - #1213901

RA-113 - #1311795

These chassis are identified by a letter "J" stamped on rear of chassis.

Change #8 (ECN-4396)

The following changes are made to the RA-112 - RA-113 Schematic Diagram (first edition, July 3, 1950):

Color of peaking coil L201 changed from red to white...

Color of peaking coil L202 changed from white to orange.

Color of peaking coil L204 changed from yellow to blue.

New parts are identified as follows:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
L201	21006627	Coil Video Peaking
L202	21006624	Coil Video Peaking
L204	Same as L201	

Change #9 (ECN-4406)

Delete coupling capacitor C299 connected from pin 1 of V203 to ground.

Purpose of Change - Part is not required.

Change #10 (ECN-4419)

Inputuner assembly is replaced by new Skip Band Inputuner.

(See Note)

New unit is identified as follows:

<u>Old Part Number</u>	<u>New Part Number</u>	<u>Description</u>
89003902	89003911	Inputuner Assembly

The new Skip Band Inputuner was first incorporated in the following chassis starting with the serial numbers shown:

RA-112A - #126293

RA-113 - #135323

Note: If the tuner (Part #89003902) being replaced is in an RA-112A Teleset the serial number of which is 122696 or later, or if it is in an RA-113, the serial number of which is 132212 or later, the Skip Band Tuner is directly replaceable. However, if the tuner (Part #89003901) being replaced is in a Teleset the serial number of which is under those mentioned above, it will be necessary to remove the IF transformer mounted on the defective Input-tuner and substitute it in place of the IF transformer mounted on the replacement tuner. The reason for this change is that the method of coupling with the new type tuner is different from that in earlier tuner.

Change #11 (ECN-4428)

Change value of capacitor C237 (V213-1 to ground) from 150 mmf to .05 mf.

New part is identified as follows:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
C237	03000950	Cap Pa .05 mf 20% 200V
	03100030	

Purpose of Change - To reduce tuneable hum.

This change was first incorporated in the following chassis starting with the serial numbers shown:

RA-112A - #1214676

RA-113 - #1312685

These chassis are identified by a letter "K" stamped on rear of chassis.

Change #12 (ECN-4391)

Specifications for the 19" CRT (V215) used in RA-112 models are changed due to change in color of face plate.

Cathode ray tube is now identified as follows:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
V211	25002640	Tube CRT 19AP4A

Change #13 (M-192)

The following changes in fuse connections (F202 are made as shown in sketch. This is done to reduce AC current through the fuse.

Dotted lines indicate old fuse connections.

Solid lines indicate new connections

7.0 PARTS LIST CHANGES

The following changes of part numbers and additions of alternate part numbers (items 1 - 4) are to be made to the Parts List of the first edition (July 3, 1950) of the Schematic Diagram for the RA-112A, RA-113 (issue #4 through M-146).

1. Part number changes in Main Chassis Parts List (June 17, 1950)

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
C216	03016730	Cap E 10 mf 250
	13014100	
	03015310	
C238	03015810	Cap Ce .001 mf 20% 350V
	03020730	MODELS RA-112-A1, -A2, -A3, -A4, -A5, -A6, RA-113-B1, -B2, -B3, -B4, -B5, -B6, -B7, -B8

C290	03015610	Cap Ce .005 mf min
L201	21006627	Coil Video Peaking
L205	21004465	Coil Video Peaking
L213	21006781	Coil Coupling
R250	01029620	Res V C 25K 1/4W
R272	02031990	Res F C 68K 10% 1/2W
	02041990	
	02051990	
R292	01029660	Res V C 1 meg 1/4W
R295	01030140	Res V C 4 meg 40% 1/4W
R296	02030650	Res F C 5.1K 5% 1/2W
	02040650	
	02050650	
R299	01030200	Res V C 1.5K 20% 2W
R305	02031890	Res F C 10K 10% 1/2W
	02041890	
	02051890	
.Z208	20005381	Trans Video IF
V211	25002640	Tube CRT 19AP4A
	42002530	Shield Tube
	42002540	Base Shield

<u>Old Part Number</u>	<u>New Part Number</u>	<u>Description</u>
34002375	34002378	Socket Assembly

2. Part number changes in Miscellaneous Parts List, RA-113  
(June 9, 1950)

<u>Symbol</u>	<u>Old Part Number</u>	<u>New Part Number</u>	<u>Description</u>
	38003431	38003441	Cushion CRT Strap
	64003211	64003551	Mask CRT
L206	21005711	21006091	Yoke Deflection 70°

3. Part Number changes in Miscellaneous Parts List, RA-112A  
(June 9, 1950)

<u>Old Part Number</u>	<u>New Part Number</u>	<u>Description</u>
45001883	45001901	Knob Control (Mahogany)
45001961	45001971	Knob Control (Mahogany)
64002871	64003221	Dial Bezel
45001891	45001911	Knob Dual (Mahogany)
45001892	45001912	Knob Dual (Mahogany)
45001884	45001902	Knob Control (Blonde)
45001962	45001972	Knob Control (Blonde)
45001893	45001913	Knob Dual (Blonde)
45001894	45001914	Knob Dual (Blonde)
09003730	09003790	Connector, Male, 1 Contact

Addition:

C300	03015610	Cap Ce 5000 mmf min
------	----------	---------------------

Addition Alternate part number:

<u>Part Number</u>	<u>Added Alternate Part Number</u>	<u>Description</u>
21005711	21006191	Yoke Deflection

4. Part Number change in RF Tuning Assembly Parts List  
(May 22, 1950)

<u>Old Part Number</u>	<u>New Part Number</u>	<u>Description</u>
89003902	89003911	Inputuner Assembly





New Parts are identified as follows:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
C280	03016898	Cap Coupling 2.5 mmf
R220	02032480	Res F C 10K 10% 1/2W
	02042480	
	02052480	
R224	02031660	Res F C 120 ohm 10% 1/2W
	02051660	
R228	02031630	Res F C 68 ohm 10% 1/2W
	02051630	
R229	Same as R220	
R277	02032520	Res F C 47K 20% 1/2W
	02042520	
R278	02032540	Res F C 100K 20% 1/2W
	02042540	
	02052540	
V205	25000240	6BA6 1st video IF
V207	25000240	6BA6 3rd video IF
Z205	20004741	Trans video IF
Z206	20004711	Trans video IF

This change was first incorporated in the following chassis starting with the serial numbers as shown:

RA-112A - 1216694

RA-113 - 1314251

These chassis are identified by the letter "L" stamped on the rear of the chassis.

Change #16 (M-202)

The following changes are made in order to eliminate video smear in the video amplifier section of the RA-112A - RA-113 chassis.

1. Change value of R235 between L201 and ground from 4.3K to 3.9K 5% 1/2W.
2. Change value of R241 between L204 and +305 V from 4.3K to 3.9K 5% 2W.
3. Change value of R240 between V210-6 and +305 V from 62K to 68K 5% 1W.
4. Change value R305 between L205 and L203 from 10% to 10K 5% 1/2W. (See change #3).
5. Disconnect parallel combination of R305 and L202 and replace with solid connection.
6. Add R305 and L202 in series with V210-5 and the junction of R317, C285 and L204.
7. Change value of L202 from orange to red.
8. Disconnect C231 from junction of L204, C285, R317, and connect to V210-5.

New parts are identified as follows:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
R235	02030620	Res F C 3.9K 5% 1/2W
	02040620	
	02050620	
R240	02033920	Res F C 68K 5% 1W
	02043920	
	02053920	
R241	Same as R235	
R305	02030720	Res F C 10K 5% 1/2W MODELS RA-112-A1,
	02040720	-A2, -A3, -A4, -A5,
	02050720	-A6, RA-113-B1,
L202	21006623	Coil video peaking. -B2, -B3, -B4, -B5,
		-B6, -B7, -B8

This change was first incorporated in the following chassis starting with serial numbers as shown:

RA-112A - 1213684

RA-113 - 1314090

These chassis are identified by the letter "L" or "N" stamped on the rear of the chassis.

Change #17 (M-204)

The following change is made to eliminate video from sync which is occurring in some receivers and causing slight displacement of some parts of the picture. This condition can also cause a "whip" in the picture.

Change value of C298 between V212-1 and V209A-1 from 20 mmfd to 47 mmfd 10% 500V ceramic.

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
C298	03012730 03015300 03020080	Capacitor Ce 47 mmfd 10% 500V.

This change was first incorporated in the following chassis starting with serial numbers as shown:

RA-112A - 1213684

RA-113 - 1314090

These chassis are identified by the letter "L" or "N" stamped on the rear of the chassis.

Change #18 (M-208)

The following change is desirable to provide greater surge protection for capacitor C291.

Change value of C291 from .02 mfd 10% 400V to .02 mfd 20% 600V.

New part numbers:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
C291	03015550 03100230	Cap .02 mfd 20% 600V

Change #19 (M-206)

In order to minimize horizontal frequency drift the present capacitor C246 is to be replaced by an oil impregnated type of the same value.

New part number:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
C246	03101540	Cap .01 5% 600V

Change #20 (M-212)

The following change is made in order to increase the sensitivity of the AM Tuner (in RA-113 Tarrytown).

Procedure:

Delete R419, 270K resistor replacing it with a wire jumper.

MODELS RA-112-A1,-A2,-A3,-A4,-A5,-A6, RA-113-B1,-B2,-B3,-B4,-B5,-B6,-B7,-B8

Change #21 (M-215)

The following change is to be made to reduce the possibility of vertical frequency drift.

Procedure:

Change value of C271 from .01 10% 400V to .01 5% 600V.

New part numbers:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
C271	03101540	Cap Pa .01 mfd 5% 600V

All production changes prior to this point are incorporated in the Main Chassis Schematic RA-112A RA-113, Second Edition, 10/2/50, and Tarrytown AM Tuner Schematic, First Edition, 8/15/50.

Change #22 (M-222)

The following change was made in order to decrease audio distortion at rated output.

Procedure:

1. Delete R308.
2. Change value of R307 from 3.9K to 1K 2W 10%.  
Both these resistors are located near V204-6.

New Part numbers:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
R307	02037770	Resistor F C 1K 2W 10%

Change #23 (M-239)

The following change should be made to prevent the shrinkage or complete loss of vertical size due to the increasing resistance of R294 caused by overheating.

Procedure:

Change R294, near V220B, from 910K 5% 1/2W to 910K 5% 1W.

Part Numbers affected:

<u>Symbol</u>	<u>Part Number</u>	<u>Description</u>
R294	02034190	Res F C 910K 5% 1W

Change #24 (M-213)

Several wiring changes have been made to simplify the manufacturing process and eliminate certain difficulties that existed due to lead dress and component location. None of these changes require new mechanical parts or electrical components.

The most significant change as far as servicemen are concerned is the relocation of R324 and C305. The new location will reduce sweep radiation and improve the audio noise level.

These parts have been removed from the front of the chassis (formerly connected from the terminal of power switch to ground) to a terminal strip at the rear of the chassis near the power transformer.

The chassis containing these changes are identified by a large letter "P" on the rear fold of the chassis. The serial numbers of the chassis containing these changes are:

RA-112A - 1216766      RA-113 1314928

The number 5 which follows the letter P signifies that a 6BC5 is substituted for a 6AU6 in the first sync clipper stage.



## PRELIMINARY STEPS

**CAUTION:** IT IS IMPORTANT THAT ALL NOTES BE READ IN CONJUNCTION WITH ALIGNMENT.

The following preliminary steps should be followed:

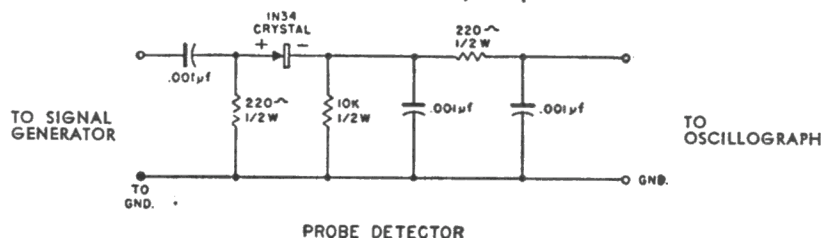
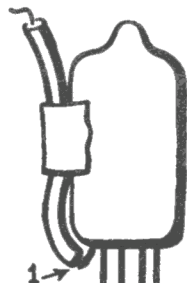
Remove 6W4 (V217) damper, 6AK5 (V102) mixer, 6AB4 (V103) oscillator, 6AQ5 (V204)

AF output (note 1) and 6AU6 (V219) first sync clipper.

Adjust AGC control (R250) fully counter-clockwise. Turn selector switch to tele. position.

## ALIGNMENT NOTES

1. 6AQ5 (V204) may be left in position only if speaker is connected.
2. Insert 6AU6 adapter at V219. This is a 6AU6 with pins 3 & 4 clipped off and an extension attached to pin 1. (Pin 1 is not clipped.)
3. If the sweep generator has no internal marker, a signal generator may be connected to the output cable of the sweep generator through a 100 mmf condenser to act as a marker generator.
4. Insert 6AK5 adapter at the mixer, V102. This adapter is a 6AK5 with pin 1 clipped off and an extension attached to the remainder of pin 1, as shown.
5. Inputuner should be tuned to channel 7, or higher.  
L213 adjusts the coupling. The bottom adjustment of T202 is reached through top of can with hex head alignment tool. Whenever the Inputuner is replaced, Steps 7 and 8 must be performed. RA-112A chassis bearing a serial number below 122696, and RA-113 below 132212, do not contain L213 and the following pertains: The bandwidth of the 1st stage of video IF is controlled by a coupling loop in the mixer transformer, T202. This is adjusted and sealed in position at the factory and should not be touched. However, in case of replacement of the Inputuner, it should be adjusted for the curve shown in Step No. 8. Steps No. 7 and 8 may have to be performed in order to obtain the proper curve. After adjustment, fasten the coupling loop in T202 with Miracle Adhesive C2M55 (obtainable from Du Mont Spare Parts Sales).
6. Maximum possible output of the sweep generator should be used, checking for overload.
7. If this curve cannot be obtained, proceed to Step 7, followed by Step 6.
8. If difficulty is encountered obtaining the proper bandwidth, heat the wire protruding from the bottom of this transformer with a soldering iron to soften the adhesive. Then slide the wire in (for increased bandwidth) or out (for decreased bandwidth) of the sleeve. Seal the wire in place with Miracle Adhesive C2M55 (obtainable from Du Mont Spare Parts Sales).
9. Reference is made in the Alignment Table to the use of a crystal probe. This device is merely a crystal rectifier with the necessary filter. The polarity of the curve will be reversed if the terminals of the 1N34 crystal are reversed. This will cause no difficulty. The circuit of the crystal probe detector is as follows:



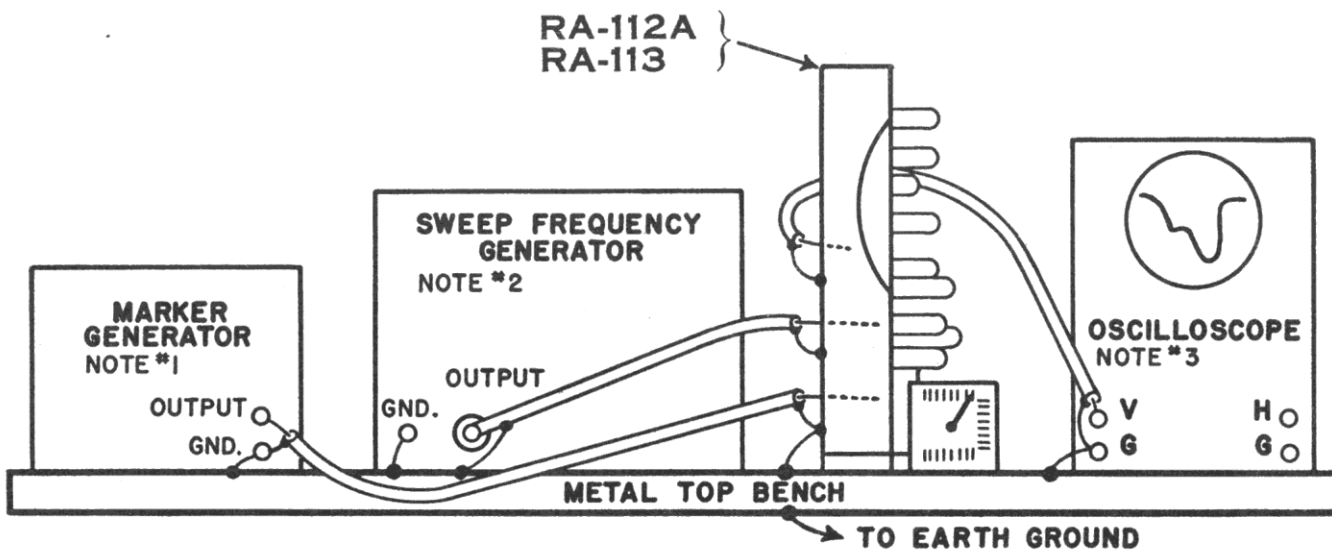
10. Tune by tuning eye to the strongest station. Turn AGC control fully clockwise. Then turn this control counter-clockwise until the picture brightens. Finally, turn slowly clockwise to point where picture just starts to dim.
11. Even though the alignment has been performed properly, it is usually necessary to correct the phase response of the video IF strip in order to remove smearing and ringing from the picture. This is done in the factory by applying a 61.25 mc signal modulated by a 100 kc square wave to the front end of the Teleset and displaying the detected square wave (which has passed through the video strip) on an oscillograph after amplifying it by means of a special wideband amplifier. The alignment is checked by observation of the square wave and SLIGHTLY re-adjusted, if necessary. If slight re-adjustment does not correct the square waveform, the chassis is completely re-aligned. A practical approach to this method in the shop (after completing the alignment procedure) is to tune in a strong test

pattern known to be of good quality and ghost-free (by observation on several normal Telesets). If smearing or ringing is observed, the following adjustments are recommended. No other adjustments should be made. Limit adjustments only to those absolutely necessary.

- SMEAR:** Re-adjust Z204 bottom slug not more than 1 turn.  
 Re-adjust Z208 bottom slug not more than 1/2 turn.
- RING:** Re-adjust Z205 top slug not more than 1/2 turn.  
 Re-adjust Z207 top slug not more than 1/2 turn.

### ALIGNMENT SET-UP

1. Keep all coax cables as short and as well shielded as possible.
2. Ground metal bench to a good earth ground.
3. To test set-up feed signal into grid of mixer thru a 100 mmf condenser. If placing hand on any chassis or adding additional grounds at any point affects waveform or if Teleset has a tendency to oscillate, grounding must be added until these effects disappear.





















#### NOTES:

1. Unmodulated and amplitude modulated RF should cover 20 to 30 mc range. Also 4.5 mc. Not necessary if marker is built into sweep frequency generator.
2. Should have center frequency range from 20 to 30 mc. Sweep should be adjustable up to 6 mc at least.
3. We recommend use of internal saw-tooth sweep. Waveforms shown were taken using this sweep. External sweep from sweep frequency generator may be used if preferred.

MODELS RA-112-A1, RA-112-A2, RA-112-A3,  
 RA-112-A4, RA-112-A5, RA-112-A6, RA-113-  
 B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-  
 113-B5, RA-113-B6, RA-113-B7, RA-113-B8

## ALIGNMENT TABLE

Step. No.	Connect Sweep Generator (Note 3)	*Marker Gen. Freq. (mc.)	*Sweep Gen. Center Freq. (mc.)	Connect Oscilloscope To:	Adjust	Remarks
1	Pin 1 V208 	21.75, 22.25 22.75, 25.5 26.25	24 mc. 8 mc. dev. min.	Junction L201, L202, L203 Direct 	Z208	Adjust for curve shown. N
2	Pin 1 V207 	21.75 AM mod.	Not used	Pin 5 V208 thru crystal probe 	L212	Adjust for minimum scope indication.
3	As above	22.25, 22.75 25.5, 26.25	24 mc. 8 mc. dev. min.	As above	Z207	Adjust for curve shown. N
4	Pin 1 V206 	21.75, 22.25 22.75, 25.5 26.25	As above	Pin 5 V207 thru crystal probe 	Z206	Adjust for curve shown. No
5	Pin 1 V205 	21.65, 21.75 21.85	21.75 mc. 1 mc. dev. min.	Pin 5 V201 thru crystal probe 	Z201	Adjust for curve shown. N
6	As above	21.75, 22.25 22.75, 25.5 26.25	24 mc. 8 mc. dev. min.	Pin 5 V206 thru crystal probe 	Z205	Adjust for curve shown. Notes 7, 8 & 9
7	Pin 1 V102 	27.75 AM mod.	Not used	Pin 5 V205 thru crystal probe 	Top Z204 Top T202	Adjust for minimum scope indication. Note 4
8	As above	21.75, 22.25 22.75, 25.5 26.25	24 mc. 8 mc. dev. min.	As above	Bottom Z204 & T202, L213	Adjust for curve shown. Notes 5 & 9
9	Pin 1 V201 	21.65, 21.75 21.85	21.75 mc. 1 mc. dev. min.	Pin 5 V202 thru crystal probe 	Z202	Adjust for curve shown. No
10	As above	As above	As above	Junction R211 and C270 direct 	Z203	Adjust for curve shown.
11	Pin 1 V208 	25.5, 26.25	24 mc. 2 mc. dev. min.	Pin 1 V219, direct. Note 2 	Z209	Adjust for curve shown.
12	Pin 7 V209 	4.5 AM mod.	Not used	CRT cathode thru crystal probe 	L203	Adjust for minimum scope indication.
13	Replace original tubes.					
14	Adjust AGC control, R250. Note 10					
15	Phase correction. Note 11					

CP indicates that oscillograph is connected through crystal probe.

DIR indicates that oscillograph is connected directly.

Refer to top and bottom photos on reverse side of this sheet for reference points.

\*RA-112A chassis bearing a serial number below 12702 and RA-113 below 13580 utilize a sound IF of 21.9 mc. and a video IF of 26.4 mc. For re-alignment of these chassis, use the RA-111A Alignment Procedure. In areas where the 8th harmonic of the 21.9 mc. sound IF causes a beat pattern on channel 7, these early chassis may be re-aligned to a sound IF of 21.75 mc., using this Alignment Procedure.

**NOTE: THIS PROCEDURE MAY BE USED ON THE RA-111A WHENEVER THE 8TH HARMONIC OF THE 21.9 MC. SOUND IF CAUSES A BEAT PATTERN ON CHANNEL 7.**

Remarks

r curve shown. Note 8

r minimum scope

r curve shown. Note 9

r curve shown. Notes 8 & 9

r curve shown. Note 9

r curve shown.  
8 & 9

r minimum scope  
Note 4

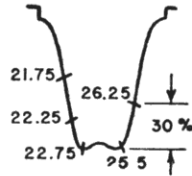
r curve shown.  
& 9

r curve shown. Note 9

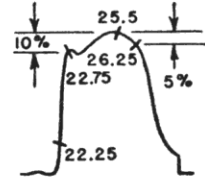
r curve shown.

r curve shown.

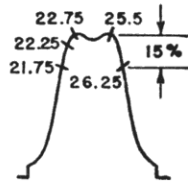
r minimum scope



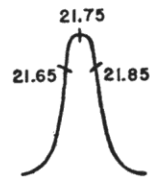
Step 1



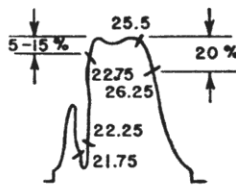
Step 3



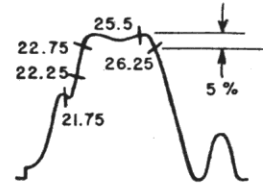
Step 4



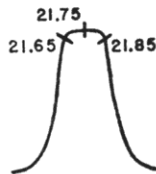
Step 5



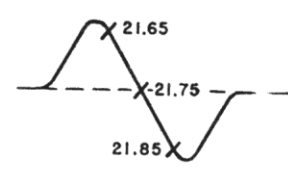
Step 6



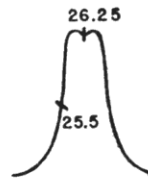
Step 8



Step 9



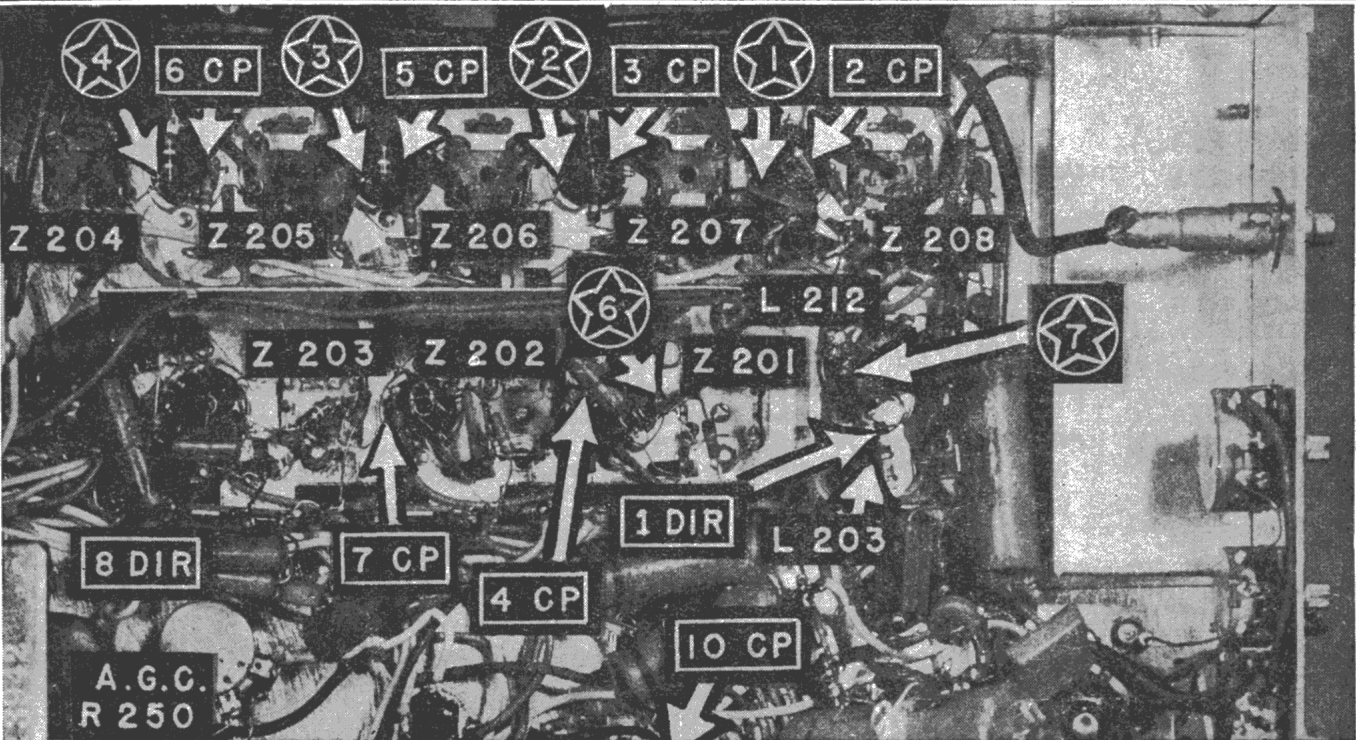
Step 10



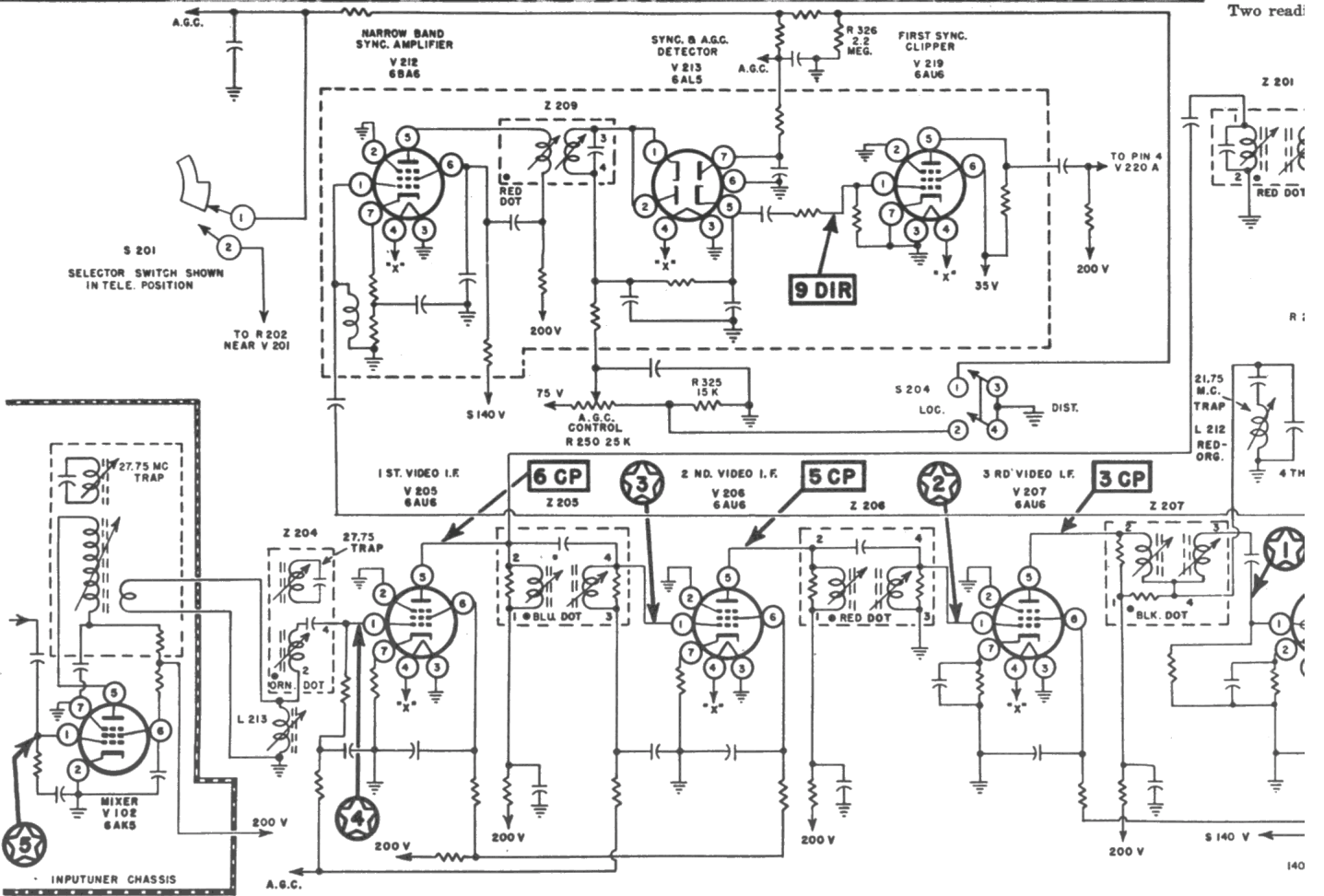
Step 11

9 mc. and a video  
the 8th harmonic  
ound IF of 21.75

EVER THE  
TTERN ON



- RES  
TUBE
- V201
  - V202
  - \*V203
  - V204
  - V205
  - V206
  - V207
  - V208
  - V209
  - V210
  - \*V211
  - V212
  - V213
  - V214
  - \*\*V215
  - V217
  - V218
  - V219
  - V220
  - V221
  - V222
  - †V401
  - ††V402
- \*V203
- †V401
- Sel  
Ins  
All



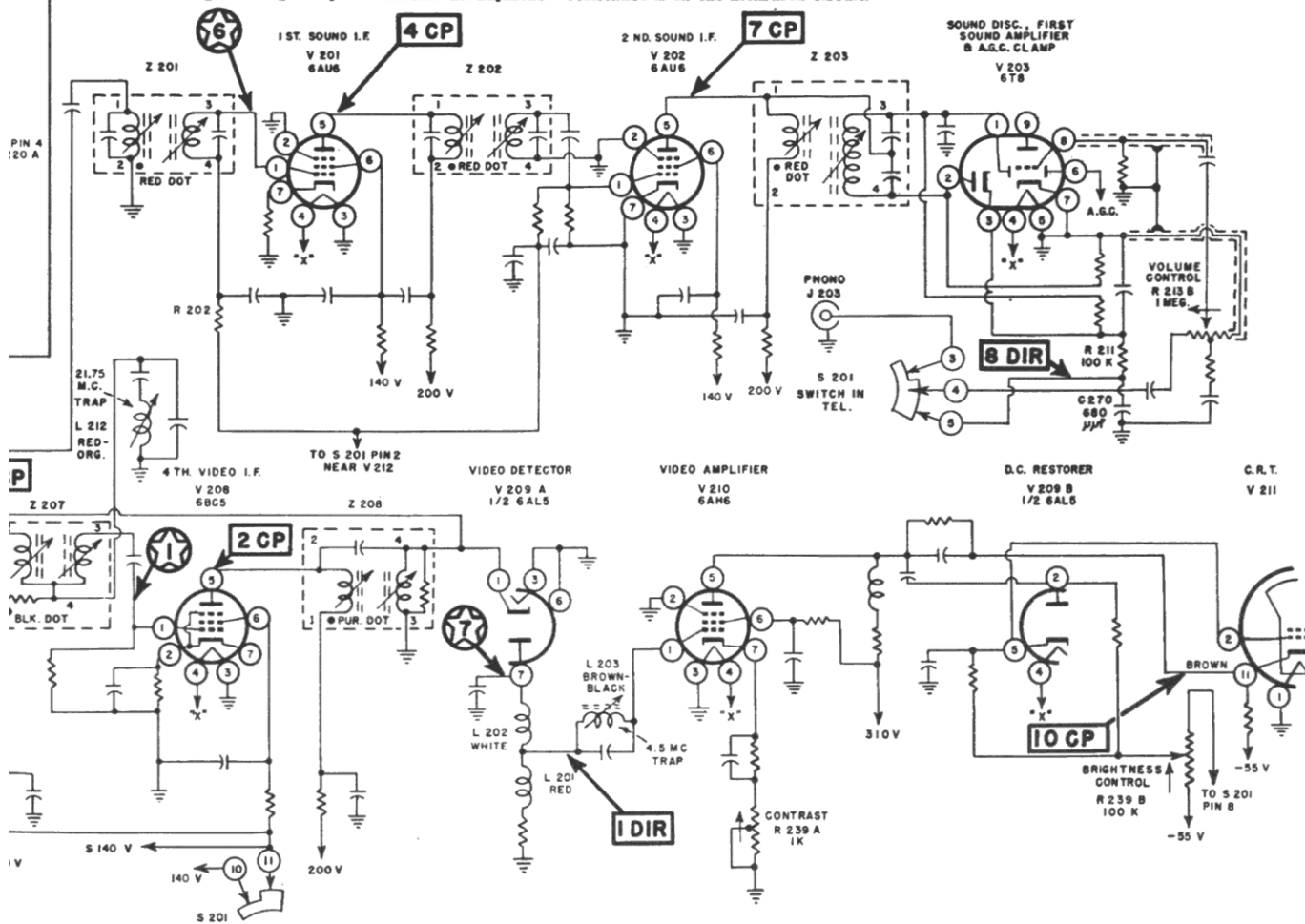
### RESISTANCE MEASUREMENTS — ALL READINGS TO GROUND

TUBE	1	2	3	4	5	6	7	8
V201	1.5M	0	0	Fil	8K	6.7K	39	
V202	270K	0	0	Fil	8K	6.7K	0	
*V203	100K	100K	200K	Fil	0	1.8M	0	10M
V204	470K	270	Fil	0	9.5K	9K	NC	
V205	1.5M	0	0	Fil	8K	18K	39	
V206	1.5M	0	0	Fil	8K	18K	39	
V207	.7	0	0	Fil	10K	6.8K	120	
V208	6.8K	220	0	Fil	8K	6.7K	NC	
V209	.6	105K	0	Fil	1M	0	4.5K	
V210	4.5K	0	0	Fil	12K	73K	1K	
*V211	0	1M						
V212	1.5	0	0	Fil	8K	6.7K	340	
V213	3.5K	3.5K	0	Fil	23K	0	1M	
V214	1M	110K	330K	276K	280K	427	Fil	
**V215	NC	0	427	NC	1M	1M	Fil	280K
V217	NC	NC	280K	NC	8K	NC	260K	260K
V218	NC	8K	NC	470	NC	470	NC	8K
V219	1M	0	0	Fil	27K	2.4K	0	
V220	470K-1.4M	1.6M-7M	625	1.3M	5K	427	Fil	0
V221	2.3M	250K	2K	2.3M	250K	2K	0	Fil
V222	3.3K	Fil	7K	1.5M	0	0	0	3.3K
†V401	Inf	NC	Inf	NC	Inf	Inf	NC	NC
††V402	Inf	Inf	Inf	NC	NC	Inf	NC	NC

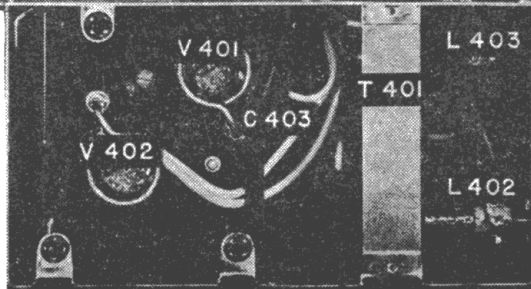
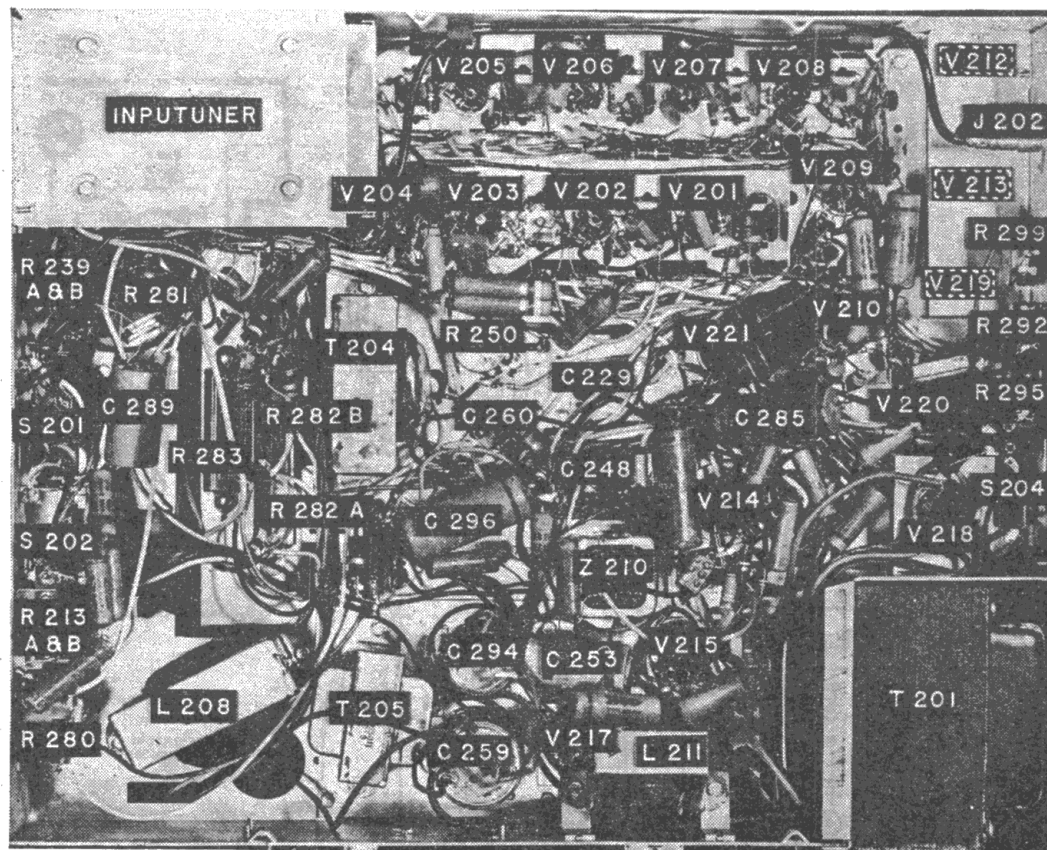
*V203	9	360K	*V211	10	8K	11	70K	12	Fil	**V215	Cap	350K
†V401	9	Cap		9	Cap							
		350K										

Selector switch in "Television" position.  
 Instrument Used — RCA Model 195-A Voltohmmyst (for voltage and resistance).  
 All readings in ohms K= thousand M= million

Two readings for a given point indicate an adjustable resistance is in the measured circuit.



MODELS RA-112-A1, RA-112-A2, RA-112-A3,  
 RA-112-A4, RA-112-A5, RA-112-A6, RA-113-  
 B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-  
 113-B5, RA-113-B6, RA-113-B7, RA-113-B8



- V 222 6AL7-1
- V 103 6AB4 V
- V 102 6AK5 I
- V 101 6J6 R.I
- V 204 6AQ5
- V 205 6AU6 I
- V 203 6T8 S
- 1ST. SOUND
- V 206 6AU6 I
- V 202 6AU6 I
- V 207 6AU6 I
- V 201 6AU6 I
- V 208 6BC5 I
- V 209 6AL5 I
- & D.C. RESTO
- V 212 6BA6 I
- V 213 6AL5 I
- V 221 6SN7-1
- V 219 6AU6 I

**RESISTANCE READINGS OF COILS**

(All readings in ohms)

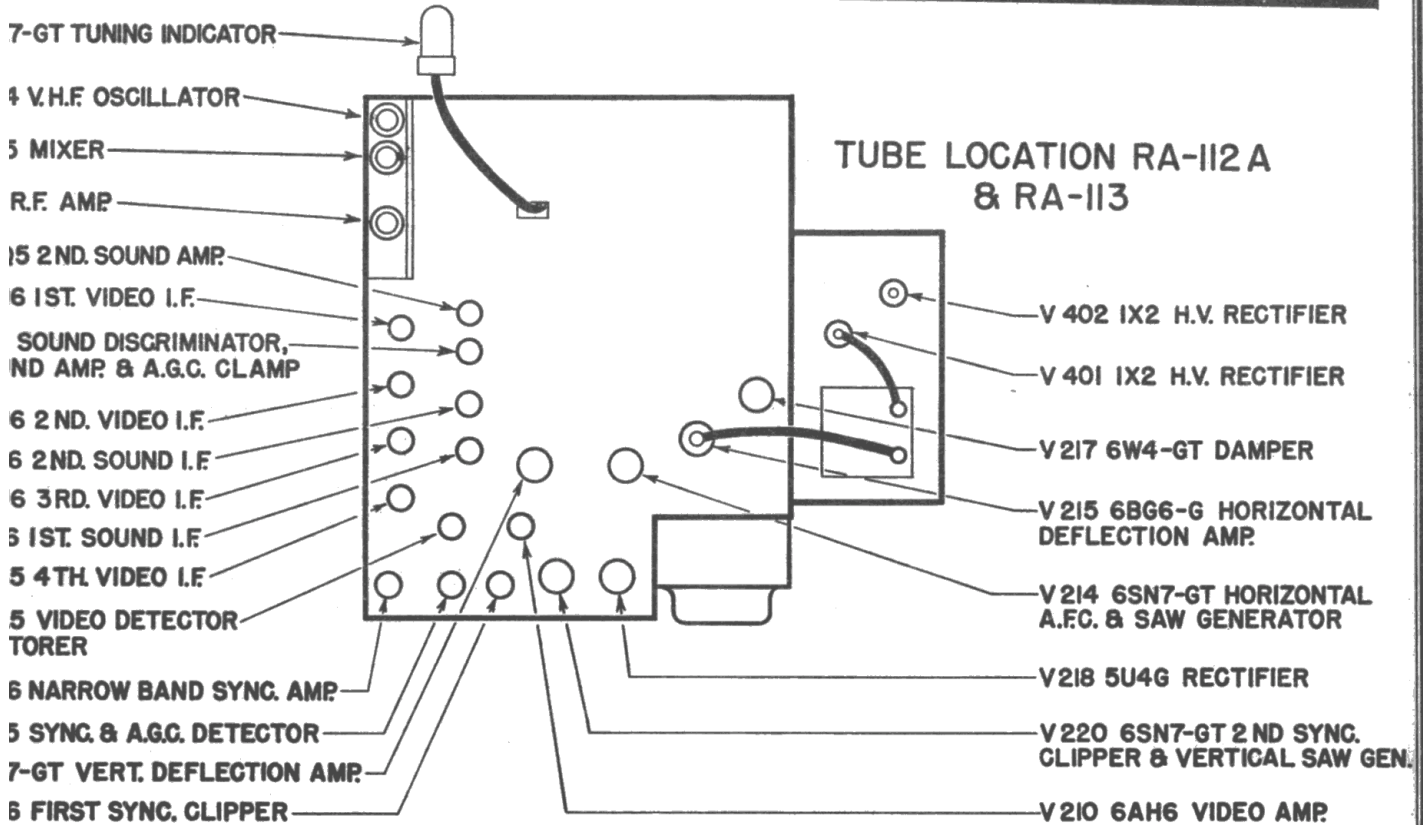
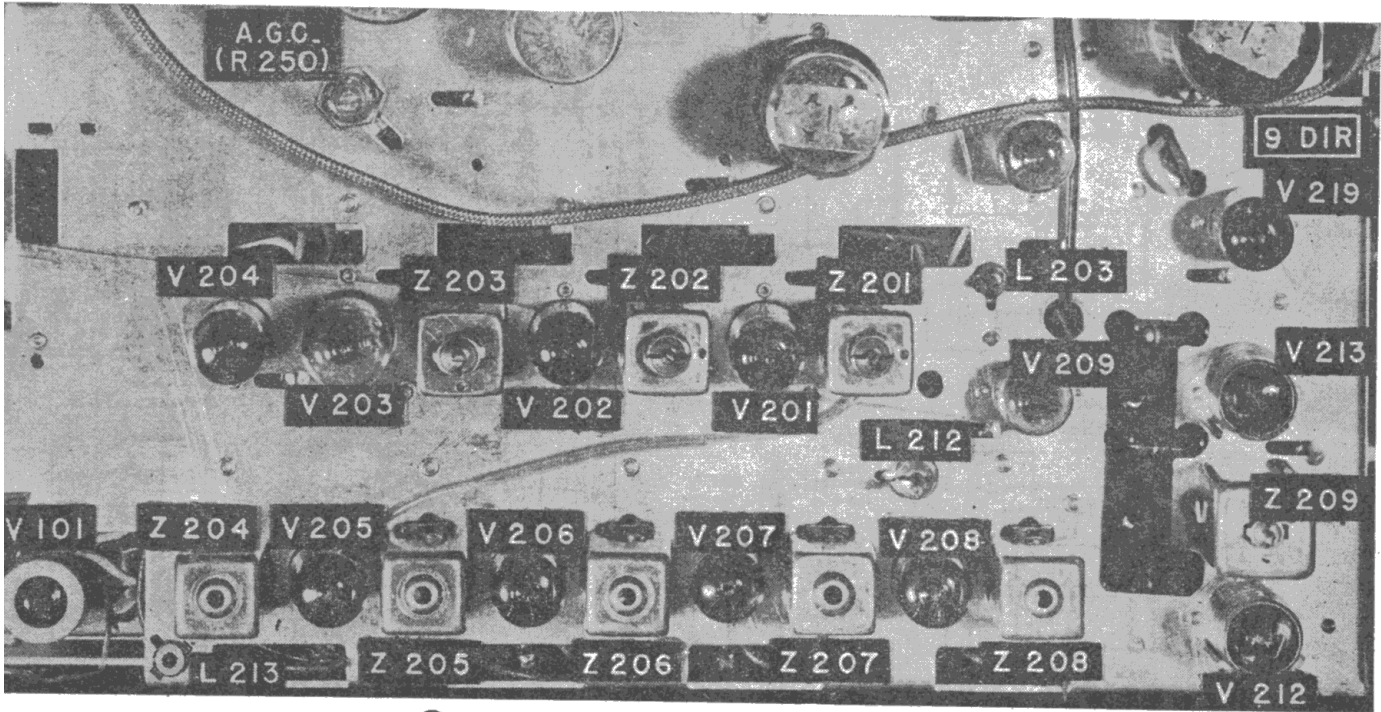
All coil readings shown were taken with coils disconnected.

Symbol	Reading
L201	10.5
L202	7.3
L203	2.5
L204	5.6
L212	.2
L214	1.5
L215	3

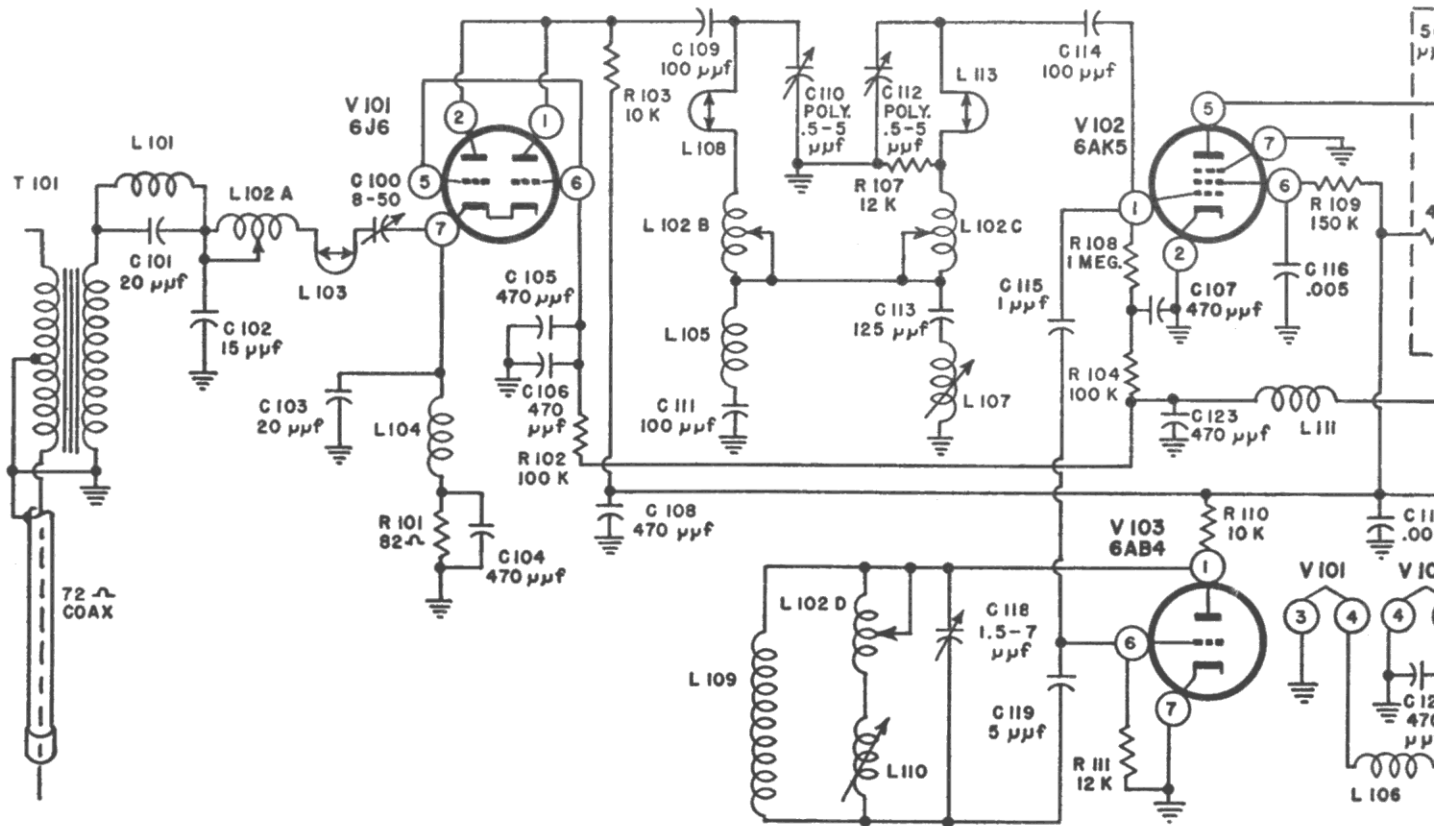
**NOTES**

1. Issue No. 4 through M-146.
2. Voltage, resistance and waveform measurements.
  - a. Instrument used—RCA Model 195-A Volttohmyst (for voltage and resistance).
  - b. Voltage measurements taken to ground, no signal input.
  - c. Voltage measurements made with switch in TV position; contrast and brightness minimum.
  - d. All coil readings were taken with coils disconnected.
  - e. Video waveforms measured with contrast set for 30 volts p-p at cathode of CRT.
  - f. Local-Distance Switch in local position.
3. Selector Switch section viewed from front end of switch. Rotor in TV position. Switch positions: 1. Phono, 2. TV, 3. F.M.

MODELS RA-112-A1, RA-112-A2, RA-112-A3, RA-112-A4, RA-112-A5, RA-112-A6, RA-113-B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-113-B5, RA-113-B6, RA-113-B7, RA-113-B8







R.F. ASSEMBLY  
(FOUR CIRCUIT BOTTOM COUPLED INPUT TUNER)

### RF TUNING ASSEMBLY PARTS LIST

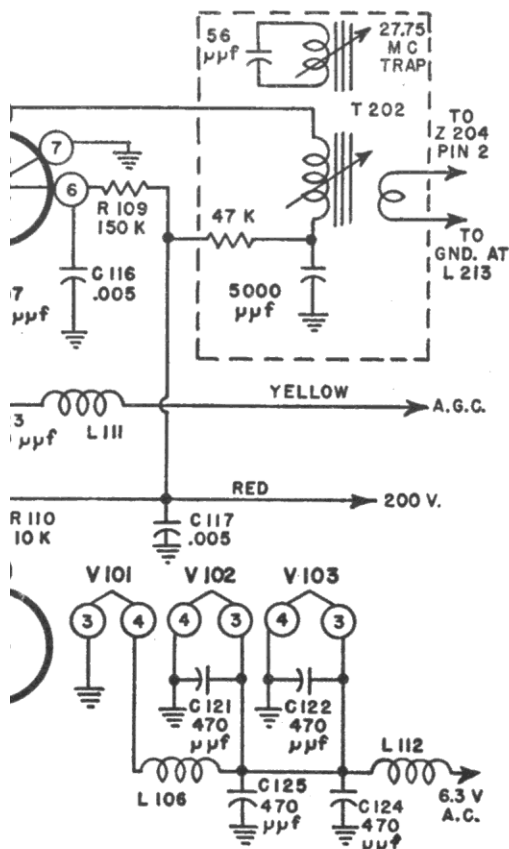
Date of Issue May 22, 1950  
89003902 Inputtuner Assembly

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description	Syn N
C100	03017500	Cap V Ce 8/50 mmf 350V	L105	21005731	Coil Bandpass Coup	J 4/
C101	03015790	Cap F Ce 20 mmf 10%	L106	21005421	Inductor Filter	L2(
C102	03012050	Cap F Ce 15 mmf 10%	L107	21005521	Inductor Bandwidth	L2(
	03012180		L108	21005722	Inductor End	R5(
C103	Same as C101		L109	21005131	Coil Shunt	C5(
C104	03016470	Cap F Ce 470 min 350V	L110	21005111	Inductor End Osc	V2(
C105	Same as C104		L111	Same as L106		
C106	Same as C104		L112	Same as L106		
C107	Same as C104		L113	Same as L108		
C108	03016480	Cap F Ce 470 min 600V	R101	02031640	Res F 82 10% 1/2 W	
C109	03016700	Cap F Ce 100 mmf 500V	R102	02032010	Res F 100K 10% 1/2 W	
C110	03016650	Cap V P .5/5 mmf 500V	R103	02037890	Res F 10K 10% 2W	
C111	Same as C109			02057890		
C112	Same as C110		R104	Same as R102		
C113	03018020	Cap F Mica 125 mmf	R107	02031900	Res F 12K 10% 1/2 W	
C114	Same as C109			02041900		
C115	03012150	Cap F C 1 mmf 500V	R108	02032130	Res F 1 meg 10% 1/2 W	
C116	03015610	Cap F Ce 5000 mmf 450V		02042130		
C117	Same as C116		R109	02032030	Res F 150K 10% 1/2 W	
C118	03016870	Cap V Ce 1.5/7 N300		02042030		
C119	03014730	Cap F Ce 5 mmf NPO	R110	Same as R103		
C121	Same as C104		R111	Same as R107		
C122	Same as C104		T101	20004592	Ant Trans Asy	
C123	Same as C104		T202	21005911	IF Link Asy	
C124	Same as C104		V101	25000190	Tube 6J6	
C125	Same as C104		V102	25000180	Tube 6AK5	
L101	21005801	Coil Antenna	V103	25001760	Tube 6AB4	
L103	21005721	Inductor End	V108	09003730	Connector Male	
L104	21005741	Coil Antenna		42001250	Shield Tube	
				42002860	Shield Tube	

## MISCELLANEOUS PARTS LIST

Ardmore, Westerly, and Mt. Vernon - RA-112A

June 9, 1950



Symbol No.	Part No.	Description
R501	02031740 02041740 02051740	Res F C 560 ohms 10% 1/2 W
R502	Same as R501	
C501	03019310	Cap M 68 mmf 10% 1500V
V211	25000870	Tube CRT 19AP4
L209	21005342	Focus Coil Assembly
L206	21005711	Yoke Deflection
	09003730	Connector Male 1 Cont
	09007491	Connector Pin
	09016480	Connector Male 7 Cont
	18002791	Assembly Loudspeaker
	21004473	Magnet Ion Trap
	21004853	
	35002141	Strap Bonding
	35008231	Mounting Defl Coil
	35008431	Mounting Focus Coil
	35008781	Strap Support
	35008783	Strap Support
	35009241	Plate 19 CRT Rear Mtg
	36000650	Clip Tube Contact
	37002241	Clamp CRT
	41001951	Sleeve Insulating
	42002091	Insulator Shield
	45001461	Window Safety Glass
	62000605	Washer Felt
	64001292	Mask CRT 19
	64002871	Dial Bezel
	45001881	* Knob Dial Vernier
	45001882	**Knob Dial Vernier
	45001883	* Knob Control
	45001884	**Knob Control
	45001891	* Knob Dual
	45001892	* Knob Dual
	45001893	**Knob Dual
	45001894	**Knob Dual
	45001921	* Knob Dial Main
	45001922	**Knob Dial Main
	45001961	* Knob Control
	45001962	**Knob Control

\* Mahogany  
\*\*Blonde

## MISCELLANEOUS PARTS LIST

Brookville, Revere, and Burlingame - RA-113

June 9, 1950

Description	Symbol No.	Part No.	Description
	J 401	50109001	Cable Assembly
	L206	21006091	Yoke Deflection 70°
	L209	21005342	Focus Coil Assembly
ndpass Coup	R501	02031740	Res F C 560 ohms 10% 1/2 W
or Filter		02041740	
or Bandwidth		02051740	
or End	R502	Same as R501	
unt	C501	03019310	Cap M 68 mmf 10% 1500V
or End Osc	V211	25002610	Tube CRT 17 Rect
		09003730	Connector Male 1 Cont
		09016480	Connector Male 7 Cont
		18002791	Assembly Loudspeaker
		21004473	Magnet Ion Trap
32 10% 1/2 W		21004853	
100K 10% 1/2 W		35008231	Mounting Defl Coil
10K 10% 2W		35008431	Mounting Focus Coil
		35008784	Strap Support
12K 10% 1/2 W		35009242	Plate CRT Rear Mtg
1 meg 10% 1/2 W		35009422	Strap CRT
150K 10% 1/2 W		35009561	Bracket CRT Mask Supp
		38003421	Cushion Rear Supp CRT
		38003431	Cushion CRT Strap
		45000049	Window Safety Glass
		62000605	Washer Felt
		62000606	Washer Felt
		64003551	Mask CRT
		64003221	Dial Bezel
ans Asy		45001881	* Knob Dial Vernier
Asy		45001882	**Knob Dial Vernier
f6		45001901	* Knob Control
AK5		45001902	**Knob Control
AB4		45001911	* Knob Dual
tor Male		45001912	* Knob Dual
Tube		45001913	**Knob Dual
Tube		45001914	**Knob Dual
		45001921	* Knob Dial Main
		45001922	**Knob Dial Main
		45001971	* Knob Control
		45001972	**Knob Control

\* Mahogany  
\*\*Blonde

## PARTS LIST HIGH VOLTAGE POWER SUPPLY RA-112A and RA-113 May 16, 1950

Symbol No.	Part No.	Description
C401	03029240 03024910 03033180	Cap M 1000 mmf 5% 500V
C402	03017450	Cap Pa 470 mmf 20% 10KV
C403	Same as C402	
C404	Same as C402	
C405	03018340	Cap M 10/160 40/250
L401	21005821	Inductor Hor Size Var
L402	21005491	Inductor Hor Lin
L403	21005811	Inductor Hor Size Fix
R402	02038090 02058090	Res F C 470K 10% 2W
R403	Same as R402	
R404	Same as R402	
R405	02100730	Res F W 2.2 ohms 10% 1/2 W
R406	Same as R405	
S401	05003431	Switch 3 position
T401	20005021	Transformer Hor Defl
V401	25001810	Tube Electron 1X2
V402	Same as V401	
	09007491	Connector Pin
	09016531	Connector Asy Tube
	34002471	Socket Asy HV
	36000650	Clip Tube Contact
	42002710	Shield Corona
	42003041	Shield Corona

MODELS RA-112-A1, RA-112-A2, RA-112-A3,  
RA-112-A4, RA-112-A5, RA-112-A6, RA-113-  
B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-  
113-B5, RA-113-B6, RA-113-B7, RA-113-B8

# MAIN CHASSIS PA

RA-112A and RA-

June 17, 1950

Abbreviations used:

C Composition Capacitor	E Elec F	Electrolytic Electronic Fixed
-------------------------------	----------------	-------------------------------------

Unless otherwise stated, the tolerance shown is plus and minus of the indicated the second and third numbers, if any, a

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description	Syml No
C201	03015610	Cap Ce 5000 mmf min	C291	03015940	Cap Pa .02 mf 10% 400V	R240
C202	03033180	Cap M 1000 mmf 5% 500V		03100330		R240
C204	03020000	Cap M 10 mmf 10% 500V	C294	03019570	Cap E 30 mf 450V	
C205	03000950	Cap Pa .05 mf 25% 200V	C296	03014260	Cap Pa .5 mf 25% 400V	R240
	03100030			03100160		R240
C206	Same as C201		C298	Same as C283		R240
C207	03017790	Cap 4000/4000 mmf min	C299	03016895	Capacitor Coupling	R240
C209	03020080	Cap M 47 mmf 10% 500V	F202	11001100	Fuse 1/4 amp	
C210	03001450	Cap Pa .01 mf 25% 400V	I 201	12001310	Lamp 6 to 8 V	
	03100090		I 202	12001310	Lamp Inc .15 amp 6.3V	R250
C211	03012560	Cap Pa .01 mf 25% 600V	Same as I202			R250
	03100220		J201	09016561	Connector Asy Speaker	R250
C212	03001570	Cap Pa .005 mf 25% 600V	J203	09002760	Connector Fem 1 Cont	
	03100400		J204	50017541	Cable Asy Yoke	
C214	Same as C201		L201	21004461	Coil Video Peaking	R250
C215	Same as C207		L202	21004463	Coil Video Peaking	R250
C217	Same as C201		L203	21004831	Coil 4.5 mc Trap	
C218	Same as C207		L204	21004467	Coil Video Peaking	
C219	Same as C201		L208	21005213	Choke Filter	R250
C221	Same as C207		L211	21005432	Choke Filter	
C222	Same as C201		L212	21004802	Coil Video IF Trap	
C223	Same as C201		L213	21005901	Coil Coupling	R250
C224	Same as C207		L214	21004465	Coil Video Peaking	
C226	Same as C205		L215	21006111	Inductor Fixed	
C227	03055500	Cap M 5 mmf 10% 500V	R201	02031600	Res F C 39 ohms 10% 1/2W	R250
C228	03012730	Cap Ce 47 mmf 10% 500V		02051600		
C229	03018440	Cap E 10/10/10 mf	R202	02032480	Res F C 10K 20% 1/2W	
C230	Same as C201			02042480		R250
C231	03015370	Cap Pa .05 mf 25% 600V		02052480		
	03100250		R203	02032420	Res F C 1K 20% 1/2W	
C232	Same as C205			02042420		R260
C233	03020560	Cap M 820 mmf 10% 500V		02052420		R260
C234	Same as C201		R204	Same as R203		
C235	Same as C201		R205	02032600	Res F C 1 meg 20% 1/2W	
C236	03020060	Cap M 33 mmf 10% 500V		02042600		R260
C237	03020140	Cap M 150 mmf 10% 500V		02052600		R260
C238	03019440	Cap Pa .001 mf 25% 600V	R206	02032060	Res F C 270K 10% 1/2W	
	03100380			02042060		
C241	03014430	Cap Pa .002 mf 10% 600V		02052060		R260
	03100300		R207	Same as R203		
C242	03018350	Cap Pa .02 mf 5% 400V	R208	Same as R203		
	03100450		R209	02032540	Res F C 100K 20% 1/2W	R260
C243	03018330	Cap Pa .2 mf 5% 400V		02042540		R260
	03100470			02052540		
C244	03019640	Cap Pa .05 mf 20% 400V	R210	Same as R209		
	03100120		R211	Same as R209		
C245	03021470	Cap M 270 mmf 5% 500V	R212	02032660	Res F C 10 meg 20% 1/2W	R260
C246	03003410	Cap Pa .01 mf 10% 400V		02042660		
	03100320		R213	01028210	Res V C 50K/1 meg SPST	R260
C247	Same as C202		R214	02032070	Res F C 330K 10% 1/2W	R260
C248	03019400	Cap E 30/25 mf		02042070		R270
C249	03020170	Cap M 270 mmf 10% 500V		02052070		
C251	03015370	Cap Pa .05 mf 20% 600V	R215	02032580	Res F C 470K 20% 1/2W	R280
	03100250			02042580		R280
C253	03018430	Cap E 50 mf 150V		02052580		R280
C255	03100360	Cap Pa .1 mf 10% 200V	R216	02031700	Res F C 270 10% 1/2W	
C256	03100340	Cap Pa .03 mf 10% 200V		02051700		
C259	03014130	Cap E 40/40 mf 450V	R218	Same as R202		R280
C260	03018450	Cap E 30/10/10 mf	R219	Same as R201		
C261	03014780	Cap Pa .1 mf 20% 200V	R220	Same as R203		R280
	03100040		R221	Same as R203		R280
C262	03014770	Cap Pa .1 mf 20% 400V	R222	02034880	Res F C 8.2K 10% 1W	R280
	03100130			02044880		R280
C264	03021430	Cap M 180 mmf 5% 500V		02054880		
C265	Same as C241		R223	Same as R202		
C266	03018640	Cap Pa .005 mf 10% 400V	R224	Same as R201		
	03100310		R225	Same as R203		R280
C267	03018470	Cap Pa .02 mf 25% 200V	R226	Same as R203		R290
	03100010		R228	02031660	Res F C 120 ohms 10% 1/2W	R290
C268	03014820	Cap Pa .1 mf 20% 600V		02051660		R290
	03100260		R229	Same as R203		
C269	Same as C268		R230	Same as R203		
C270	03020210	Cap M 680 mmf 10% 500V	R231	02031690	Res F C 220 ohms 10% 1/2W	R290
C271	03033660	Cap M .01 mf 10% 300V		02051690		R290
C276	Same as C212		R232	Same as R203		
C277	Same as C205		R233	Same as R203		
C278	Same as C205		R235	02030630	Res F C 4.3K 5% 1/2W	R290
C279	03020360	Cap F M 27 mmf 10% 500V		02040630		R290
C280	03016897	Capacitor Coupling		02050630		
C281	Same as C201		R237	02031570	Res F C 22 ohms 10% 1/2W	R290
C282	03055170	Cap M 100 mmf 5% 500V		02051570		
C283	03055000	Cap M 20 mmf 5% 500V	R239	01027020	Res V C 1K/100K 1/2W	R290
C285	03014260	Cap Pa .5 mf 25% 400V	R240	02036910	Res F C 62K 5% 2W	
	03100160			02046910		R290
C286	03014900	Cap Pa .01 mf 20% 200V		02056910		
	03100000		R241	02036630	Res F C 4.3K 5% 2W	R290
C287	Same as C205			02056630		
C288	03100020	Cap Pa .03 mf 20% 200V	R242	Same as R209		R290
	03101230		R243	Same as R205		
C289	03019410	Cap E 10 mf 450V				

# CHASSIS PARTS LIST

RA-112A and RA-113  
June 17, 1950

MODELS RA-112-A1, RA-112-A2, RA-112-A3,  
RA-112-A4, RA-112-A5, RA-112-A6, RA-113-  
B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-  
113-B5, RA-113-B6, RA-113-B7, RA-113-B8



TV PAGE 6-22 DUMONT

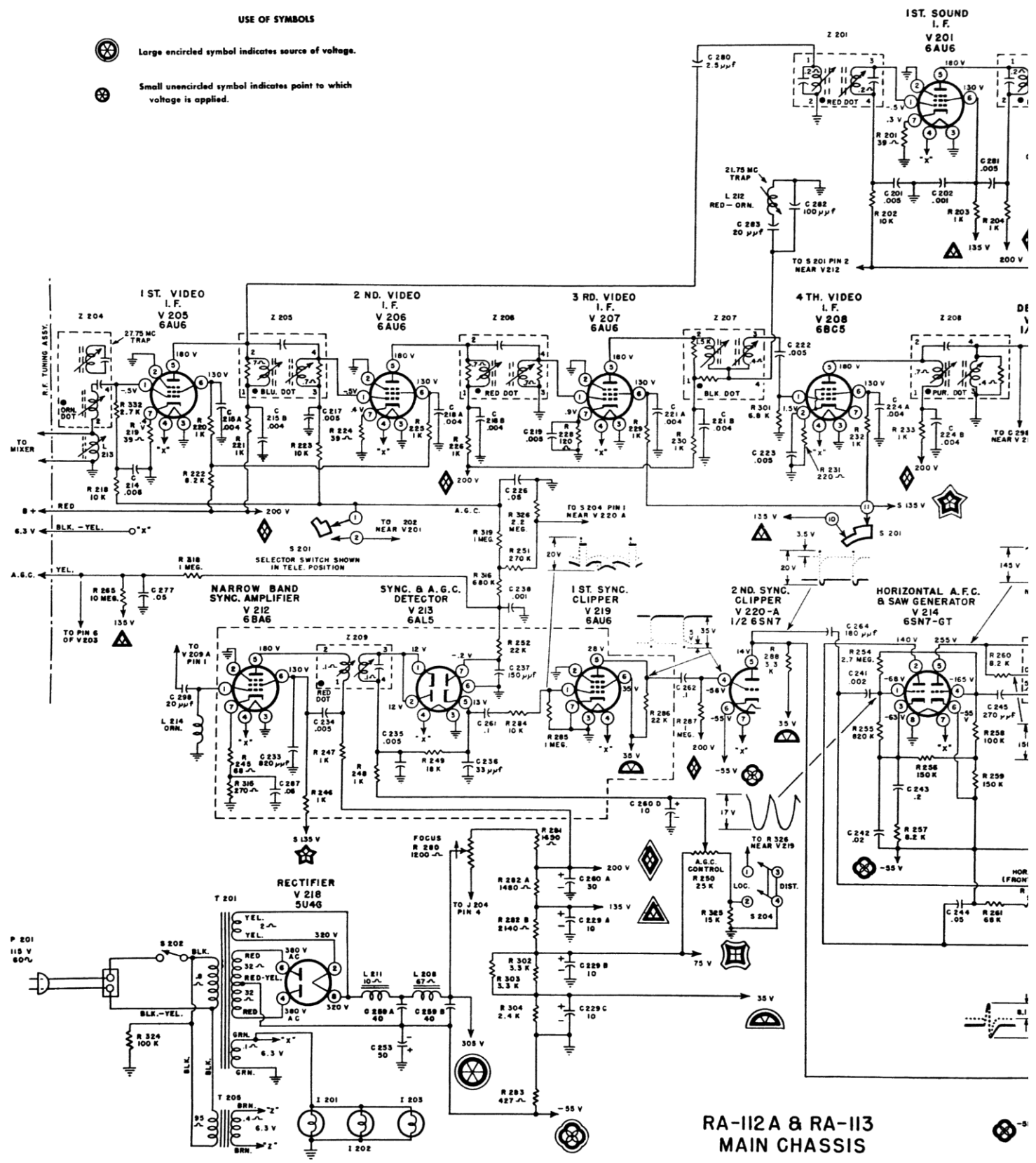
E Elec Electrolytic  
F Elec Electronic  
Fixed  
Pa Res Paper  
W Resistor  
Wire Wound

± and minus of the indicated value. Where two or more part numbers are shown,  
and third numbers, if any, are alternate parts.

	Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
V	R244	Same as R209		R300	02112340	Res F W 5000 ohms 10% 5W
	R245	02031630	Res F C 68 ohms 10% 1/2 W	R301	02030680	Res F C 6.8K 5% 1/2 W
		02051630			02040680	
	R246	Same as R203			02050680	
	R247	Same as R203		R302	02036600	Res F C 3.3K 5% 2W
	R248	Same as R203			02056600	
	R249	02031920	Res F C 18K 10% 1/2 W	R303	Same as R302	
		02041920			02036570	Res F C 2.4K 5% 2W
		02051920		R304	02046570	
	R250	01007540	Res V C 25K 1/4 W		02056570	
	R251	Same as R206		R307	02037840	Res F C 3.9K 10% 2W
	R252	02032500	Res F C 22K 20% 1/2 W		02047840	
		02042500			02057840	
		02052500		R308	Same as R307	
	R254	02034300	Res F C 2.7 meg 5% 1W	R310	Same as R205	
	R255	02031180	Res F C 820K 5% 1/2 W	R315	Same as R216	
		02041180		R316	02032590	Res F C 680K 20% 1/2 W
		02051180			02042590	
	R256	02031000	Res F C 150K 5% 1/2 W		02052590	
		02041000		R317	02035040	Res F C 180K 10% 1W
		02051000			02045040	
	R257	02030700	Res F C 8.2K 5% 1/2 W		02055040	
		02040700		R318	Same as R205	
		02050700		R319	Same as R205	
1/2 W	R258	02033960	Res F C 100K 5% 1W	R320	Same as R252	
		02043960			02032100	Res F C 560K 10% 1/2 W
		02053960			02042100	
	R259	02034000	Res F C 150K 5% 1W		02052100	
		02044000		R324	02035010	Res F C 100K 10% 1W
		02054000			02045010	
	R260	Same as R257			02055010	
	R261	02032530	Res F C 68K 20% 1/2 W	R325	02032490	Res F C 15K 20% 1/2 W
		02042530			02042490	
		02052530			02052490	
W	R262	Same as R209		R326	Same as R297	
	R263	02032030	Res F C 150K 10% 1/2 W	R332	02030580	Res F C 2.7K 5% 1/2 W
		02042030			02040580	
		02052030			02050580	
	R264	02034970	Res F C 47K 10% 1W	R344	02037790	Res F C 1.5K 10% 2W
		02044970			02047790	
		02054970			02057790	
	R265	Same as R212		S201	05004002	Switch Serv Selector
	R266	02032600	Res F C 1 meg 20% 1/2 W	S202	Same as R213	
		02042600		S204	05003690	Switch Toggle
		02052600			05003050	
W	R267	02034910	Res F C 15K 10% 1W	T201	20004771	Transformer Power
		02044910		T203	20004721	Trans Vert Block Osc
		02054910		T204	20005031	Transformer Vert Out
ST	R268	02032360	Res F C 100 ohms 20% 1/2 W	T205	20005011	Transformer Filament
		02052360		V201	25000050	Tube Elec 6AU6
	R269	Same as R268		V202	Same as V201	
	R271	02109380	Res F W 25K 5% 5W	V203	25001820	Tube Elec 6T8
		02108810		V204	25000340	Tube Elec 6AQ5
	R280	01028300	Res V W 1200 ohms 10% 25W	V205	Same as V201	
	R281	02122900	Res V W 1650 ohms 10% 11W	V206	Same as V201	
	R282	02120300	Res F W 1480/2140	V207	Same as V201	
		02123300		V208	25002020	Tube Elec 6BC5
	R283	02120210	Res F W 427 ohms 10% 10W	V209	25000020	Tube Elec 6AL5
		02123400		V210	25001510	Tube Elec 6AH6
	R284	Same as R202		V212	25000240	Tube Elec 6BA6
	R285	Same as R205		V213	Same as V209	
	R286	Same as R252		V214	25000110	Tube Elec 6SN7GT
	R287	Same as R205		V215	25000140	Tube Elec 6BG6 G
	R288	02032450	Res F C 3.3K 20% 1/2 W	V217	25000830	Tube Elec 6W4 GT
		02042450		V218	25000060	Tube Elec 5U4G
		02052450		V219	Same as V201	
	R289	Same as R202		V220	Same as V214	
	R290	Same as R202		V221	Same as V214	
1/2 W	R291	Same as R202		V222	25000200	Tube Elec 6AL7 GT
	R292	01007520	Res V C 1 meg 1/4 W	Z201	20004511	Transformer Sound IF
	R293	02032080	Res F C 390K 10% 1/2 W	Z202	Same as Z201	
		02042080		Z203	20005271	Trans Sound Disc
		02052080		Z204	20005211	Transformer Video IF
1/2 W	R294	02031190	Res F C 910K 5% 1/2 W	Z205	20004711	Transformer Video IF
		02041190		Z206	20004741	Transformer Video IF
		02051190		Z207	20004751	Transformer Video IF
	R295	01008570	Res V C 4 meg 40% 1/4 W	Z208	20005241	Transformer Video IF
	R296	02030640	Res F C 4.7K 5% 1/2 W	Z209	20005251	Transformer IF 26.4 mc
		02040640		Z210	20004611	Transformer Hor Osc
		02050640			09016411	Connector Female
	R297	02032620	Res F C 2.2 meg 20% 1/2 W		09016450	Connector Male 2 Cont
		02042620			34001220	Socket Min 7 Prong
		02052620			34001670	Socket Min 9 Prong
	R298	02034740	Res F C 560 ohms 10% 1W		34002875	Socket Assy
		02044740			34002380	Socket Tube Octal
		02054740			42002530	Shield Tube
	R299	01012400	Res V C 1.5K 20% 2W		42002960	Shield Tube
		01024620				
		01025420				

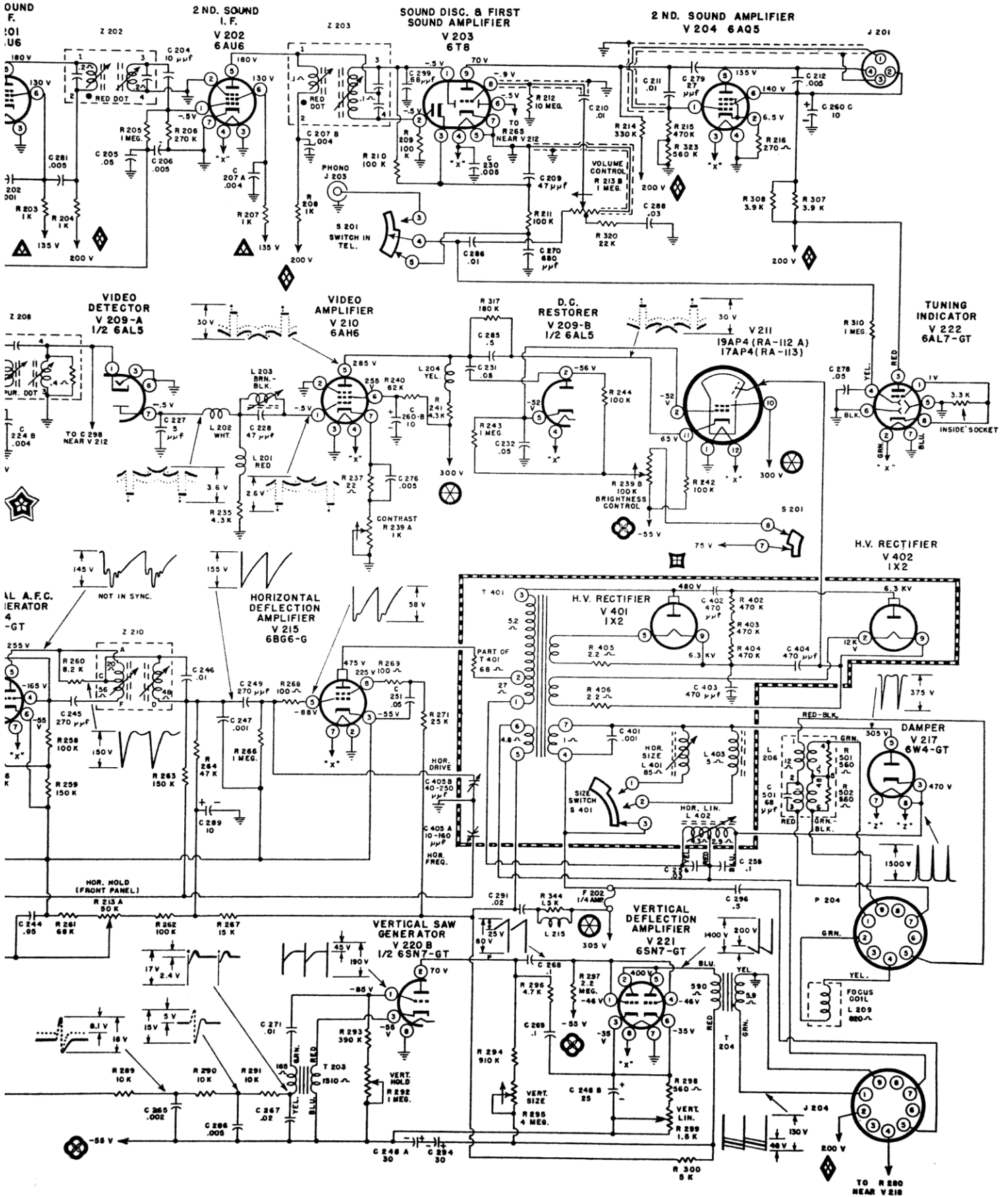
USE OF SYMBOLS

-  Large encircled symbol indicates source of voltage.
-  Small unencircled symbol indicates point to which voltage is applied.



RA-II2A & RA-II3  
MAIN CHASSIS

MODELS RA-112-A1, RA-112-A2, RA-112-A3, RA-112-A4, RA-112-A5, RA-112-A6, RA-113-B1, RA-113-B2, RA-113-B3, RA-113-B4, RA-113-B5, RA-113-B6, RA-113-B7, RA-113-B8



**PARTS LIST FOR AM Tuner RA-113 Tarrytown**  
AUGUST 1, 1950

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
C401	03019381	Cap V 3 Gang			
C402	03014390	Cap Ce 330 mmf 20% 350V			
C403	03012730	Cap Ce 47 mmf 10% 500V	R413	02032130	Res F C 11 meg 10% 1/2 W
	03014200			02042130	
C404	Same as C403			02052130	
C405	03000950	Cap Pa .05 mf 25% 200V	R414	02037690	Res F C 220 ohms 10% 2W
C406	03001570	Cap Pa .005 mf 25% 600V	R415	Same as R406	
C407	Same as C406		R416	02107830	Res F W 750 ohms 5% 10W
C408	Same as C406		R417	02037770	Res F C 1K 10% 2W
C409	Same as C402		R419	Same as R412	
C410	Same as C402		R420	02031840	Res F C 3.9K 10% 1/2 W
C412	Same as C406			02041840	
C413	03012560	Cap Pa .01 mf 20% 600V		02051840	
C414	03014400	Cap E 30/30/20/20 mf	R421	02031940	Res F C 27K 10% 1/2 W
C416	03018570	Cap F Pa .02 mf 20% 600V		02041940	
	03018560			02051940	
C417	Same as C416		R422	01029300	Res V C 1 meg 20% 1/4 W
C420	03014430	Cap Pa .002 mf 10% 600V		01029200	
C421	Same as C406		S401	05003822	Switch AM Tuner
C422	03018910	Cap Pa .1 mf 20% 200V	T401	20004151	Transformer Power
C423	Same as C406		V401	25000240	Tube Elec 6BA6
I401	12001310	Lamp inc .15 amp 6.3V	V402	25000250	Tube Elec 6BE6
I402	Same as I401		V403	Same as V401	
I403	Same as I401		V404	25000210	Tube Elec 6SQ7GT/G
J403	09018692	Connector Asy	V405	25000090	Tube Elec 6V6GT/G
L401	21004321	Antenna Coil Asy	V406	25000220	Tube Elec 5Y3GT
L402	21004331	Asy RF Coil	Z401	20004045	Transformer IF
L403	21004311	Coil Osc Asy	Z402	20004046	Transformer IF
P401	50002980	Cable Asy Power		34002380	Socket Tube Octal
P402	09018702	Connector Asy		34001220	Socket Tube 7 Prong
R401	02032580	Res F C 470K 20% 1/2 W		09015560	Connector Female 2 contact
	02042580			45002211	Pointer Dial
	02052580			45002081	Dial AM Tuner
R402	02032500	Res F C 22K 20% 1/2 W	<b>MISCELLANEOUS PARTS LIST*</b>		
	02042500		<b>Tarrytown Only - RA-113</b>		
	02052500		AUGUST 1, 1950		
R403	02032660	Res F C 10 meg 20% 1/2 W	Symbol No.	Part No.	Description
	02042660		C502	03014430	Cap Pa .002 mf 10% 600V
	02052660			35009512	Strap Support
R404	02032420	Res F C 1K 20% 1/2 W		19034593	Reproducer Sound
	02042420			89005501	AM Tuner Asy
	02052420			12002720	Light Ind Cand DC
R405	02032430	Res F C 1.5K 20% 1/2 W		12002770	Lamp Ind Cand DC 6W
	02042430			09003400	Connector Male 2 Contact
	02052430			12003911	Lens Indicator Light
R406	02037920	Res F C 18K 10% 2W		45001891	Knob Dual AM (Mahogany)
R407	02032600	Res F C 1 meg 20% 1/2 W		45001893	Knob Dual AM (Blonde)
	02042600			18003091	Asy Loudspeaker
	02052600			22001501	Asy Loop Antenna
R409	02032520	Res F C 47K 20% 1/2 W	* For all other miscellaneous parts used in the Tarrytown refer to the Miscellaneous Parts List for the RA-113 on the Schematic Diagram of Teleset Model RA-112A - RA-113 (First Edition July 8, 1950).		
	02042520				
R410	02052520				
	01029100	Res V C 500K 20% 1/4 W			
	01028900				
	01029000				
R411	Same as R403				
R412	02032060	Res F C 270K 10% 1/2 W			
	02042060				
	02052060				

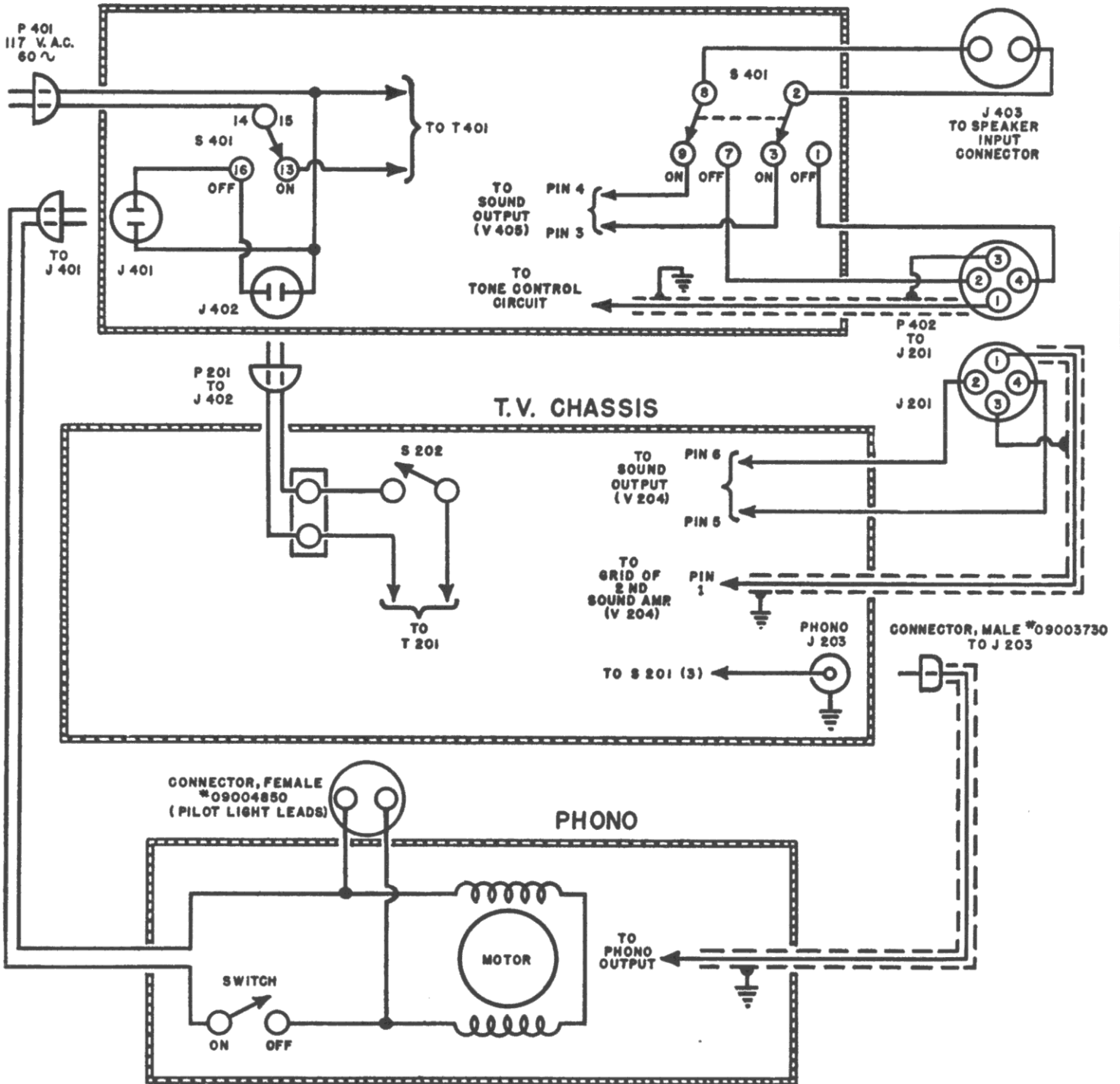
**ALIGNMENT PROCEDURE FOR TARRYTOWN AM TUNER**

The alignment should be made with the volume control fully on and tone control set for high frequency response. The output from the signal generator should be maintained as low as possible to prevent A. V. C. action from interfering with the correct alignment.

Connect an output meter across the voice coil of the speaker. Turn on signal generator and AM Tuner for approximately five minutes to stabilize. Connect a common ground to each unit. When connecting the signal generator output leads to the receiver, place a .25 mfd condenser in series with the inner conductor of the signal generator output lead.

1. Turn the tuning dial to the extreme low frequency end (gang condenser fully closed). At this position the tuning dial pointer should be halfway below the 550KC mark and the ends of the two concentric semi-circles.
2. Connect the signal generator output lead to the converter stator of tuning capacitor C401.
3. Set signal generator to 455KC and adjust tuning slugs (secondary and primary) on IF coils Z402 and Z401 in the order given for maximum deflection, reducing generator output as required. Repeat tuning until maximum output is obtained.
4. Connect generator to antenna input terminal.
5. Turn tuning dial pointer to 600 KC. Feeding in a 600KC signal from generator adjust oscillator coil L403 for maximum output.
6. Turn tuning dial pointer to 1500KC. Feeding in a 1500KC signal from generator adjust RF, converter and oscillator trimmers on tuning capacitor C401 for maximum audio output.

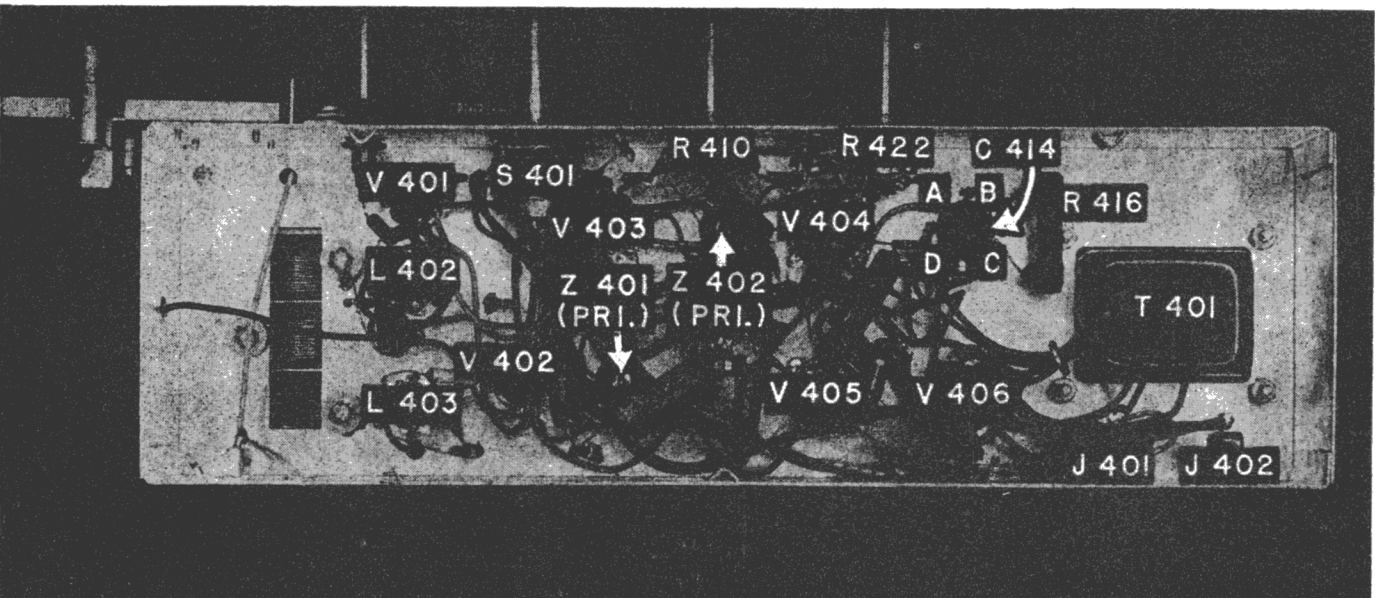
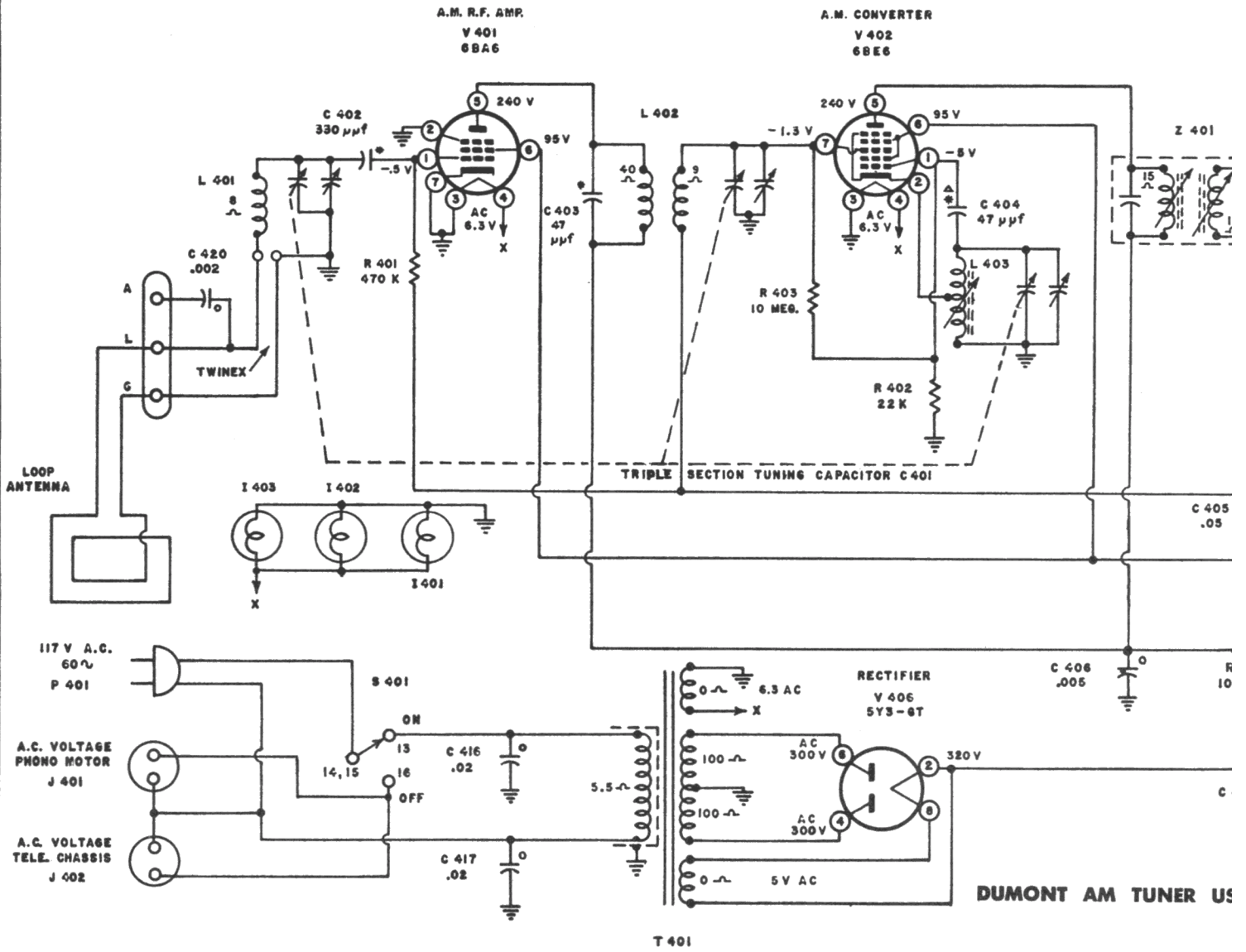
**DIAGRAM SHOWING INTERCONNECTING CABLES AND AC LINES BETWEEN  
TV CHASSIS, AM TUNER CHASSIS AND RECORD PLAYER  
TOP VIEW - TARRYTOWN TUNER  
A.M. TUNER CHASSIS**



**MODEL RA 113 TARRYTOWN  
INTERCONNECTING CHASSIS CABLES**

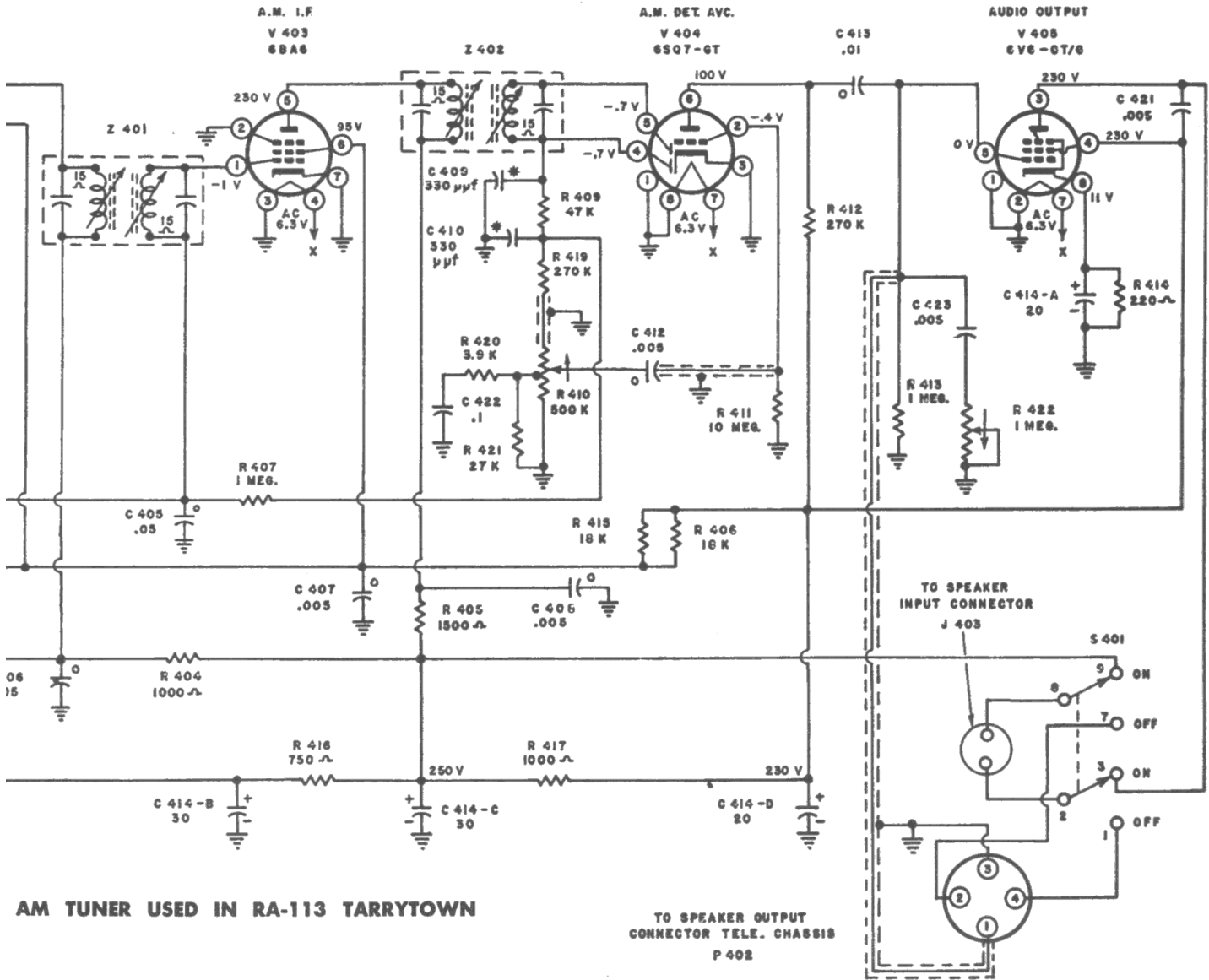
MODELS RA-113-B7, RA-113-B8, Tarrytown, Tuner





- V 401 6B1 R.F. AMP.
- V 403 6E I.F. AMP.
- Z 402 (S
- V 404 6E DETECTO
- 1ST. SOU
- C 414 —

**BOTTOM VIEW — TARRYTOWN TUNER**



AM TUNER USED IN RA-113 TARRYTOWN

Resistance Measurements - All Readings to Ground

Tube	1	2	3	4	5	6	7	8
V401	2M	0	0	.05	Inf	Inf	0	
V402	20K	0.5	0	.05	Inf	Inf	1.5M	
V403	1.5M	0	0	.05	Inf	Inf	0	
V404	0	10M	0	500K	600K	Inf	.05	0
V405	0	0	Inf	Inf	1M	Nc	.05	220
V406	Nc	Inf	inf	100	Inf	100	Nc	Inf

Instrument used - RCA model 195-A Voltomyst for voltage and resistance. All readings in ohms. K = thousand M = million

Resistance Readings of Coils

All readings in ohms. All readings shown were taken with coils disconnected.

Symbol	Resistance in ohms	
	Pri.	Sec.
L401	8.0	
L402	40.0	9.0
L403	.5	5.0
Z4C1	15.	15.
Z402	15.	15.
T401	5.5	200.0

TARRYTOWN A.M. TUNER

