

HORIZ. HOLD    VERT. HOLD    CONTRAST CONT.    BRIGHTNESS CONT.    VOL. CONT. ON OFF SW.    FINE TUNING    CHANNEL SELECTOR

OLYMPIC  
MODEL TV-922

|              |   |                               |
|--------------|---|-------------------------------|
| TRADE NAME   | Olympic, Model TV-922   |                               |
| MANUFACTURER | Olympic Radio and Television Corp., 3101-19 38th Ave., Long Island City, New York |                               |
| TYPE SET     | Television Receiver   |                               |
| TUBES        | Twenty-Two  |                               |
| POWER SUPPLY | 105-125 Volts, 60 cycle AC.   |                               |
| TUNING RANGE | Channels 2 through 13   | RATING 1.94 Amps. @ 117 Volts |

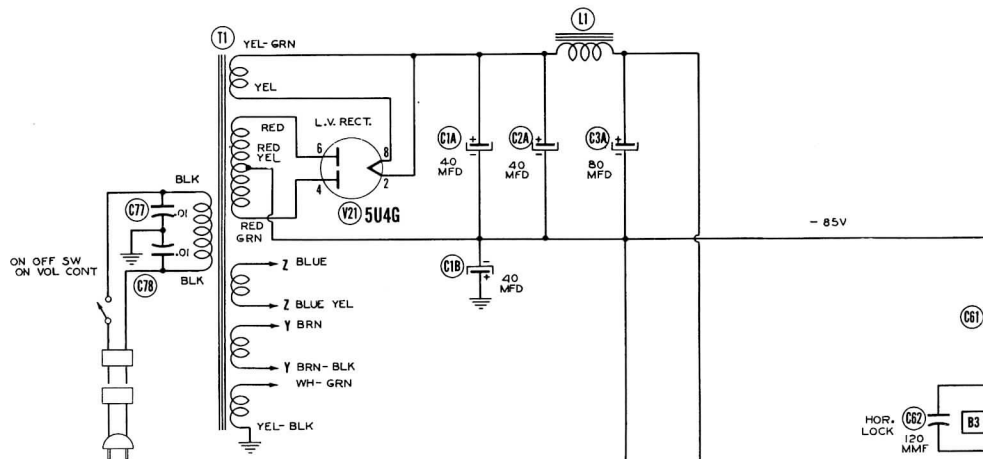
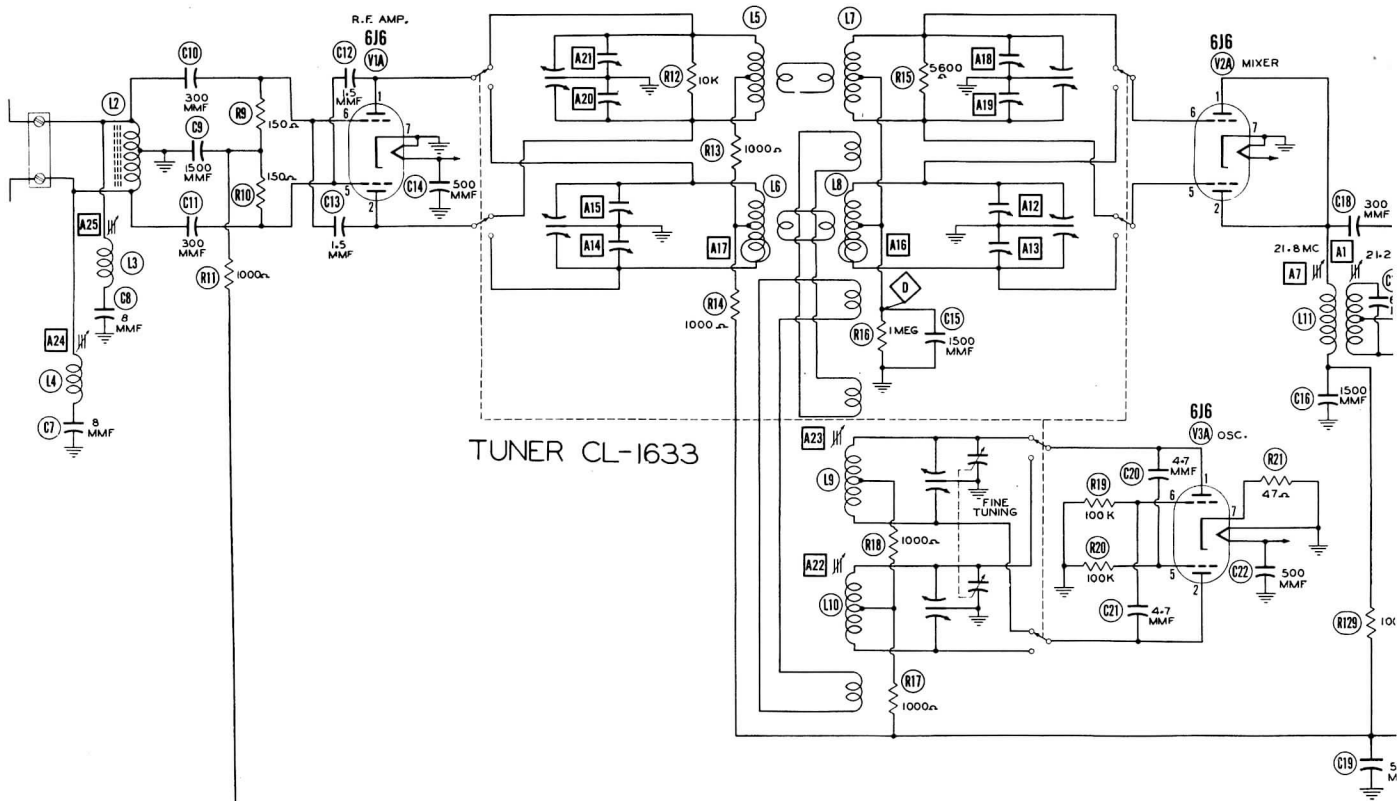
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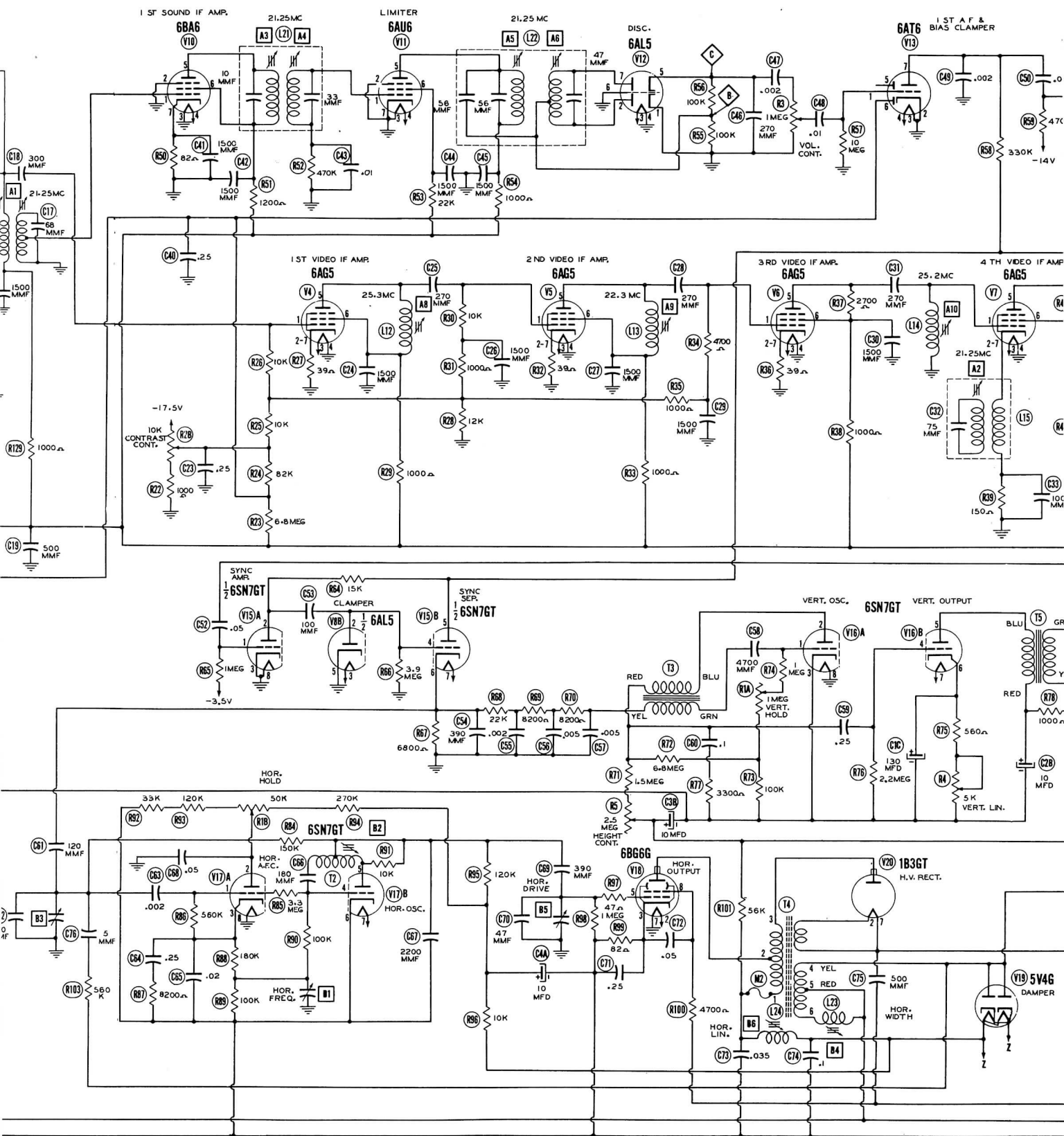
HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

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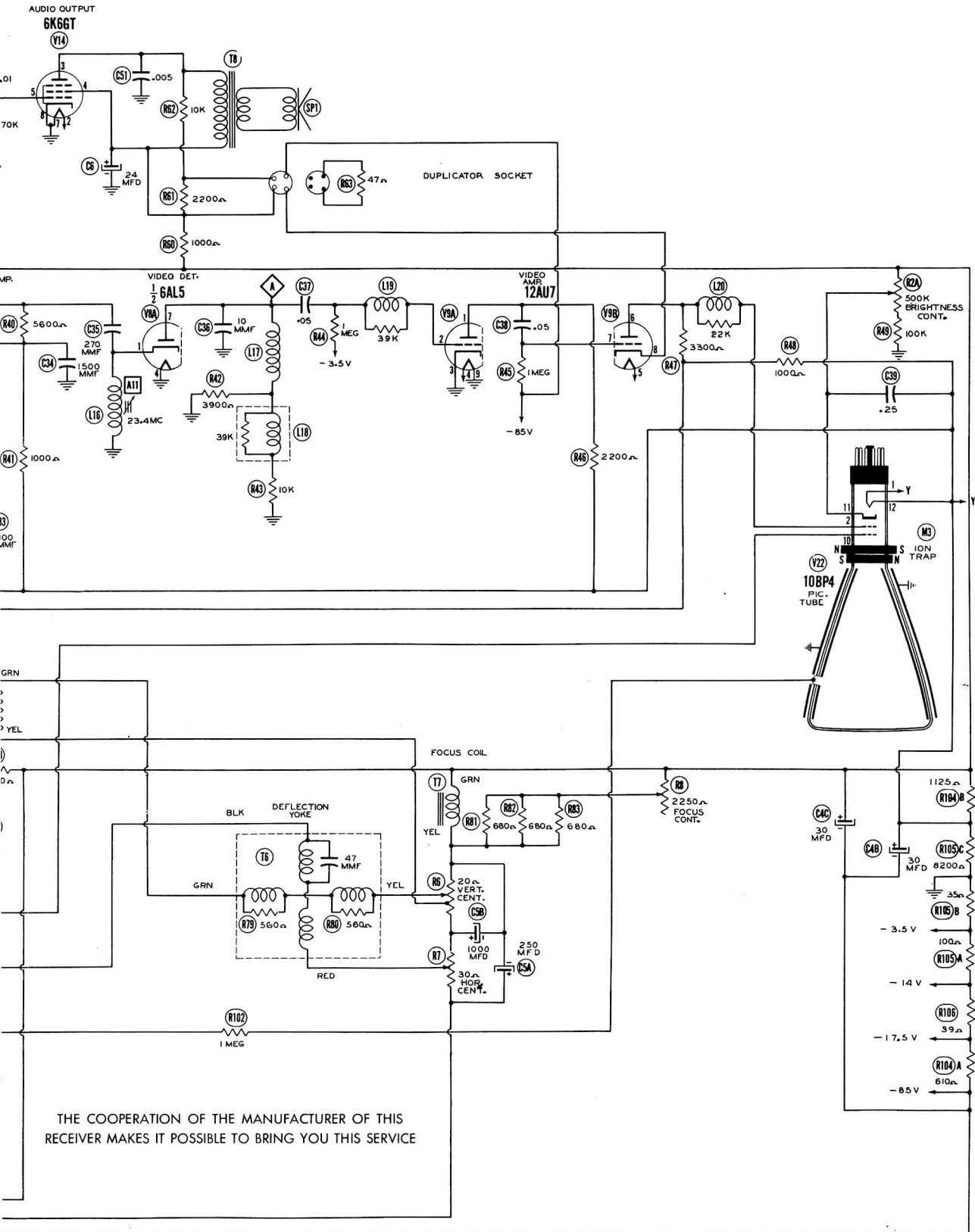
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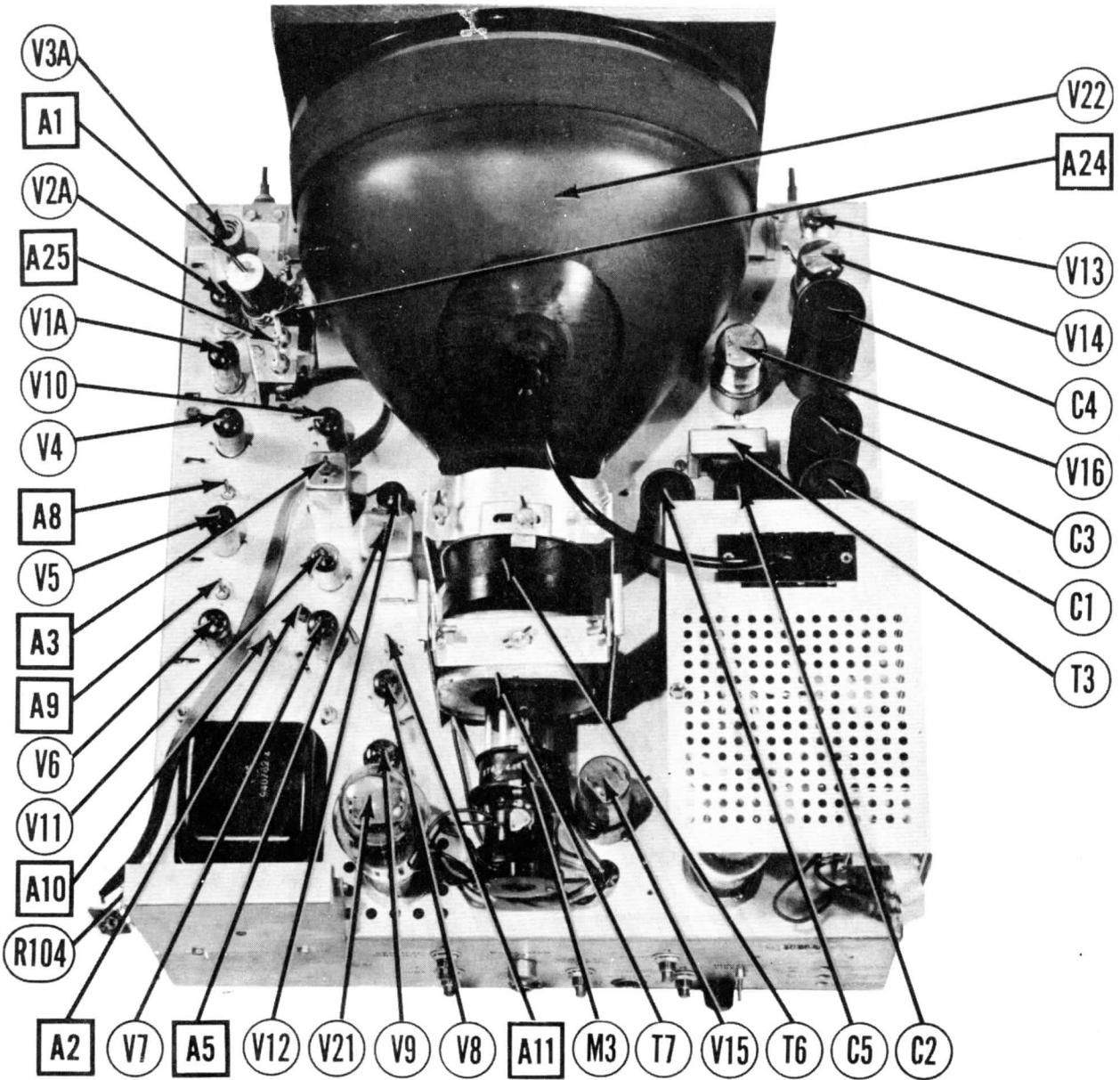
A PHOTOFAC STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1949



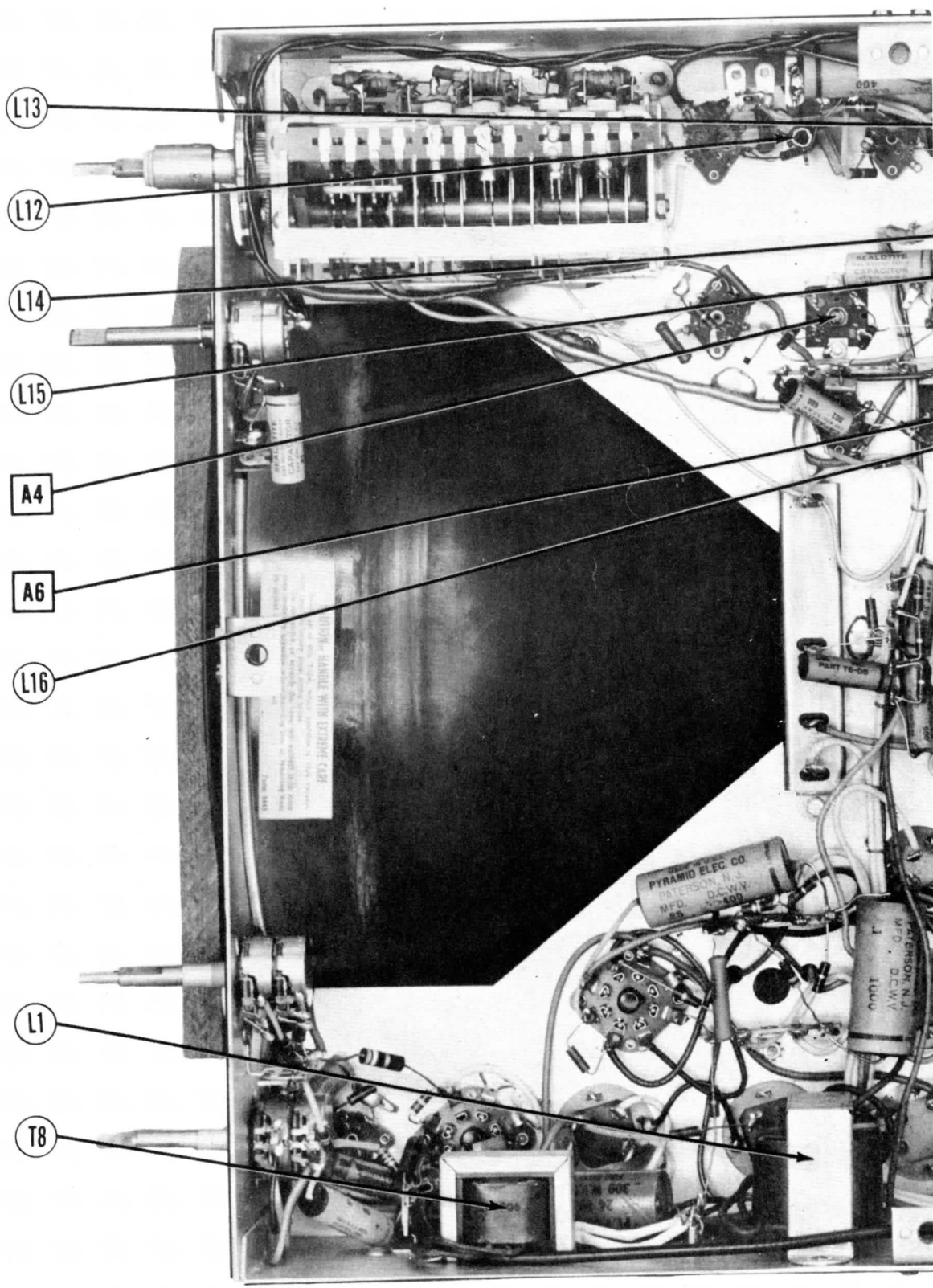
**OLYMPIC  
MODEL TV-922**



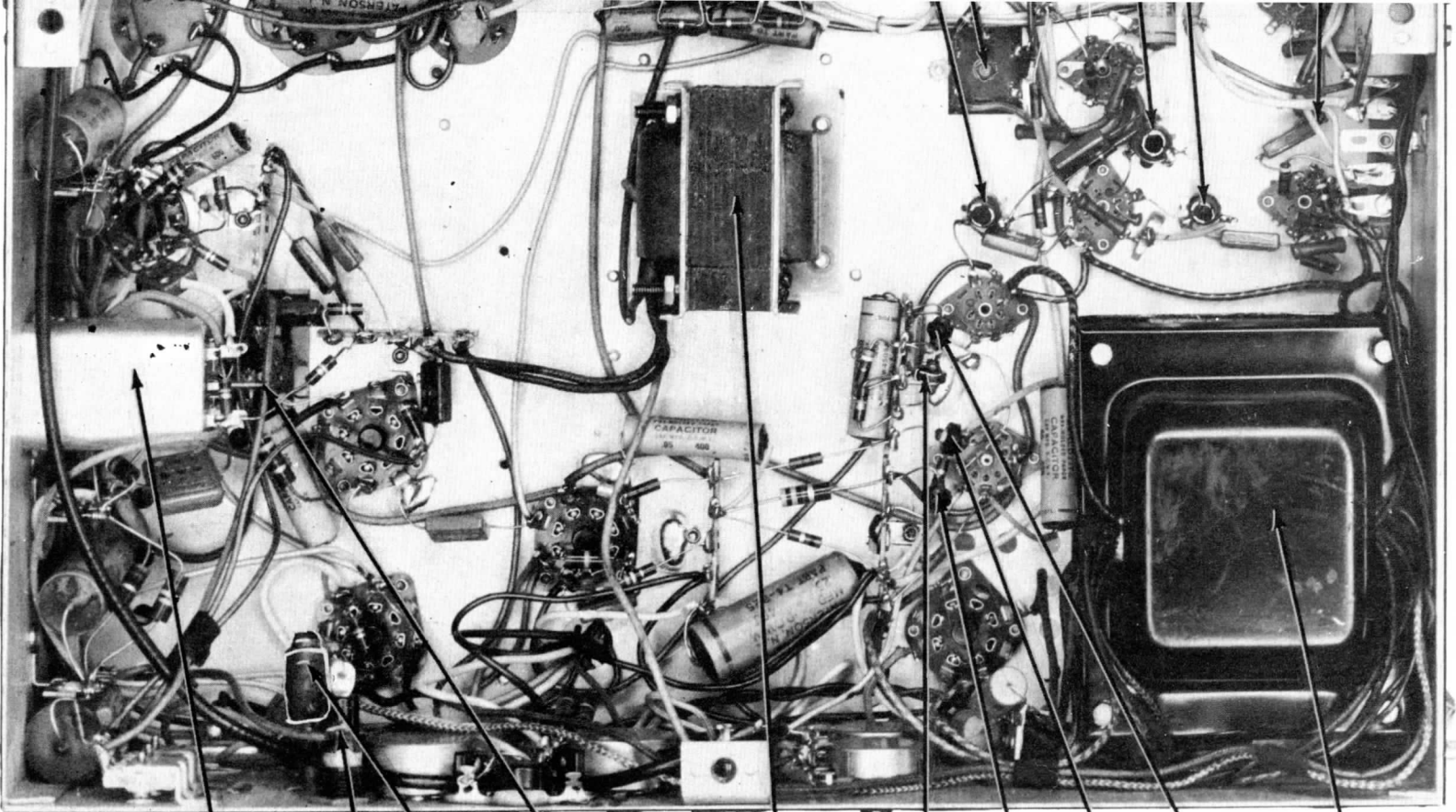




CHASSIS-TOP VIEW

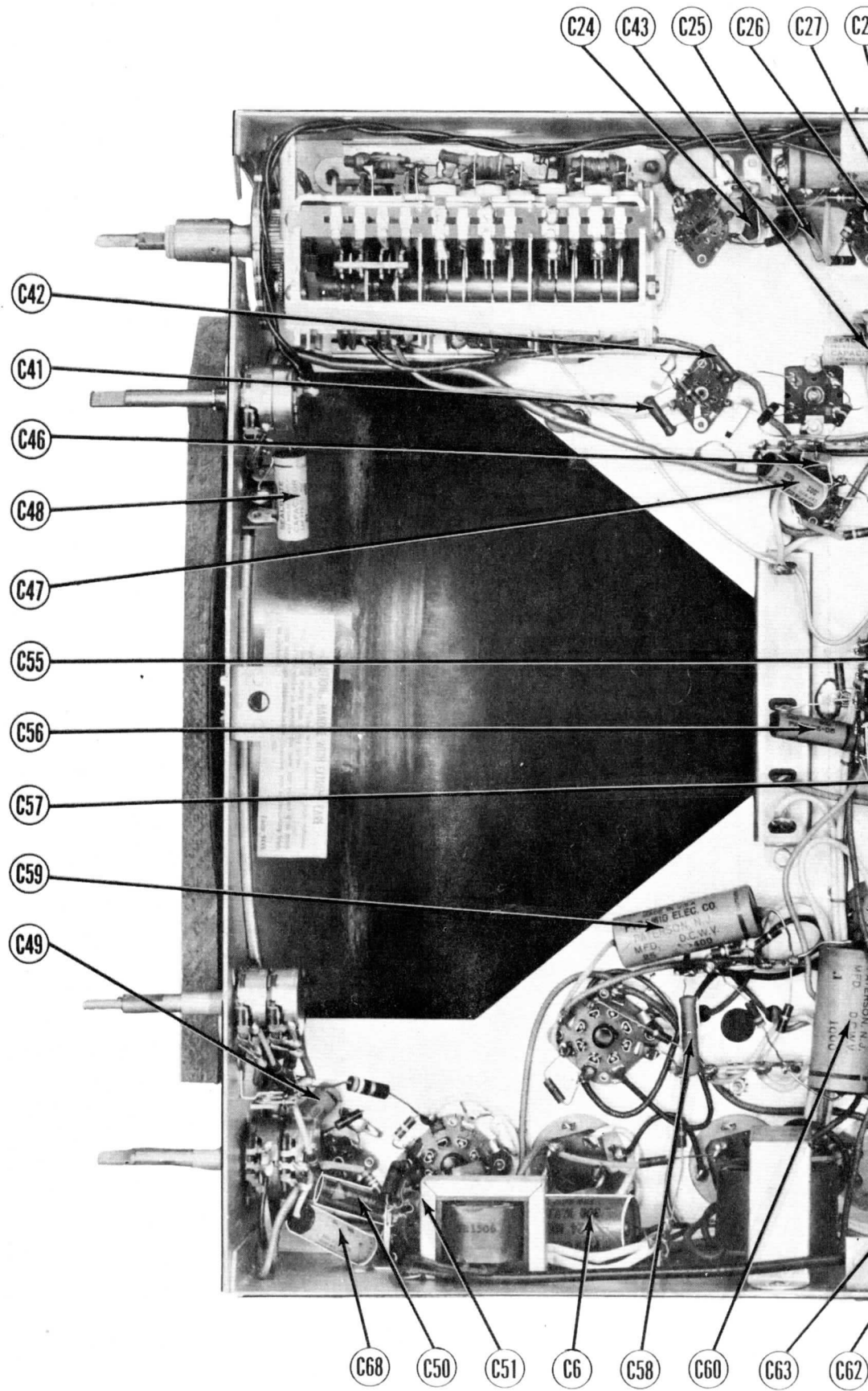


CHASSIS BOTTOM VIEW-TRANS.,INDUCT



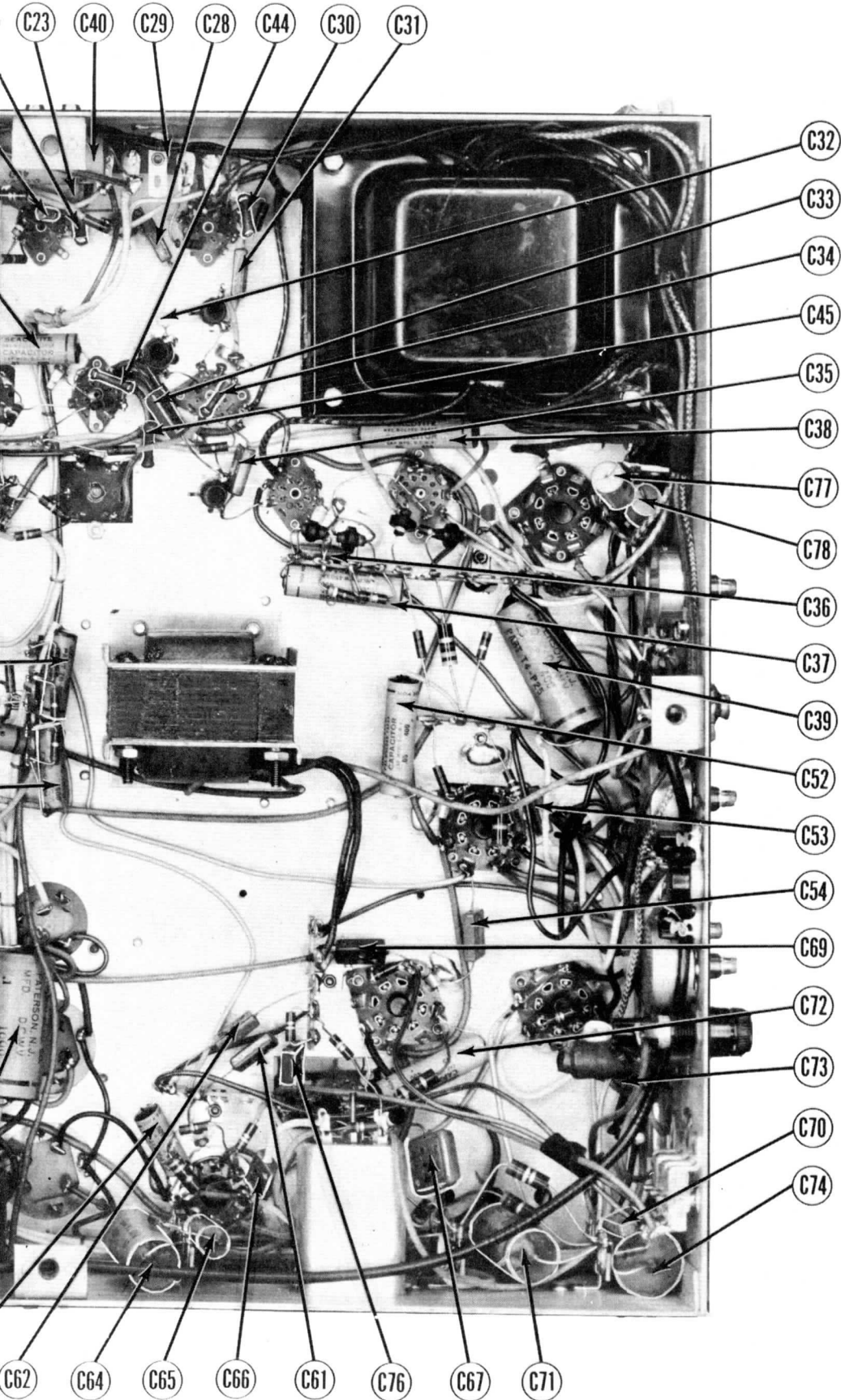
OLYMPIC  
MODEL TV-922

CTOR AND ALIGNMENT IDENTIFICATION

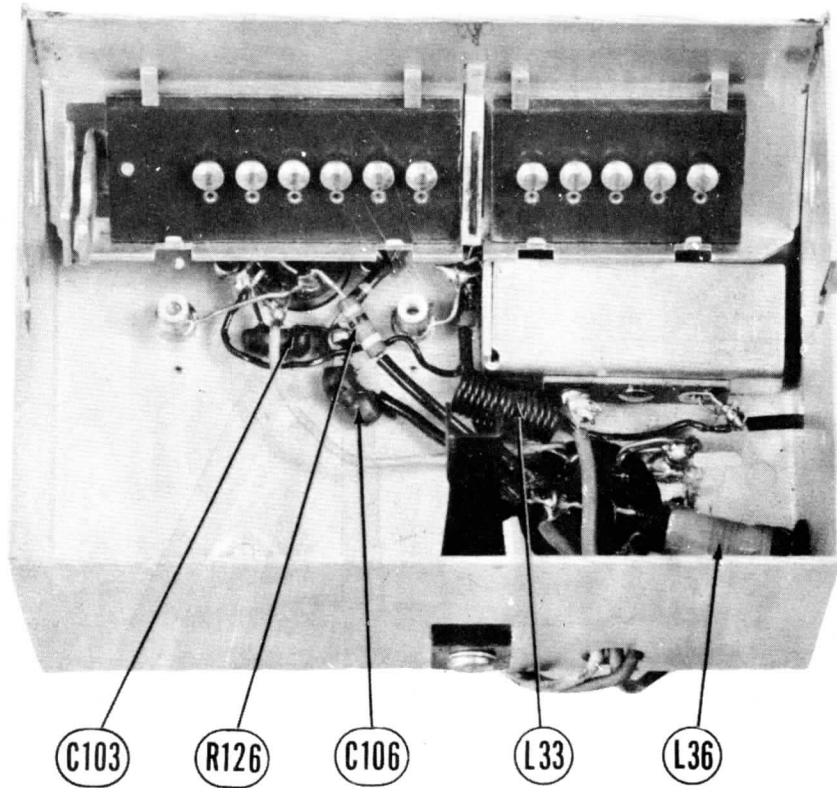


CHASSIS BOTTOM VIEW-CA

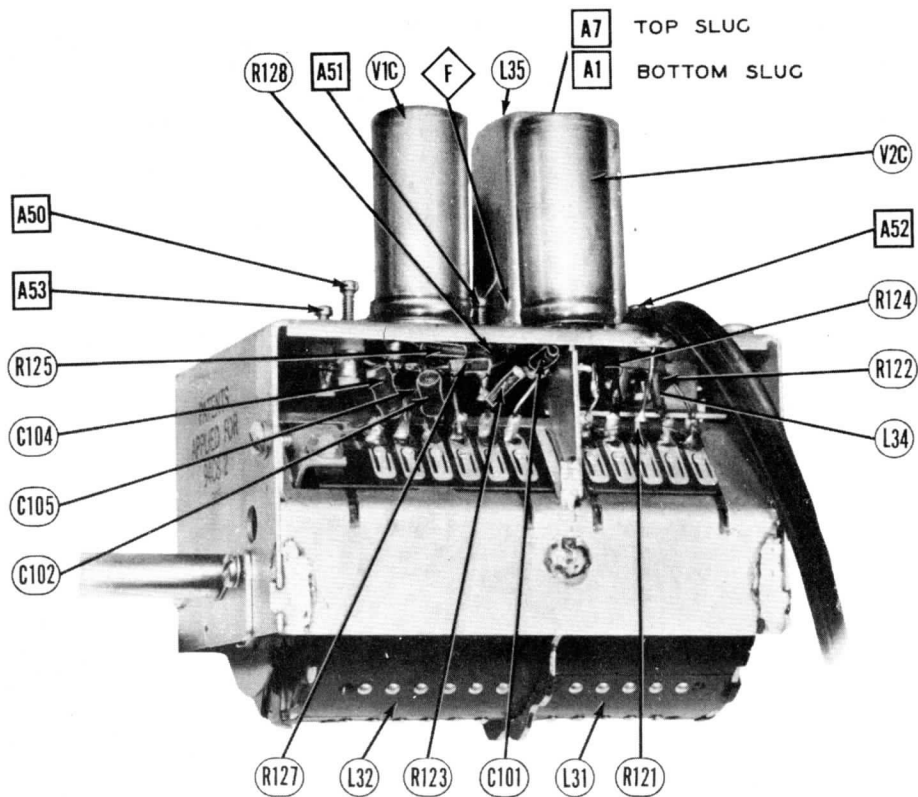




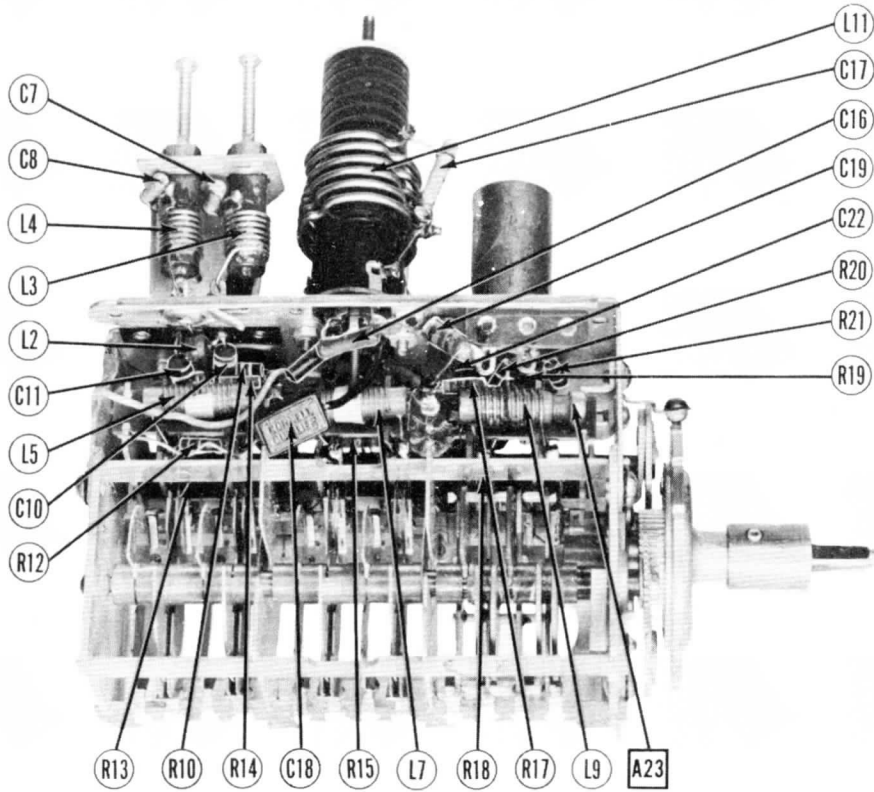
CAPACITOR IDENTIFICATION



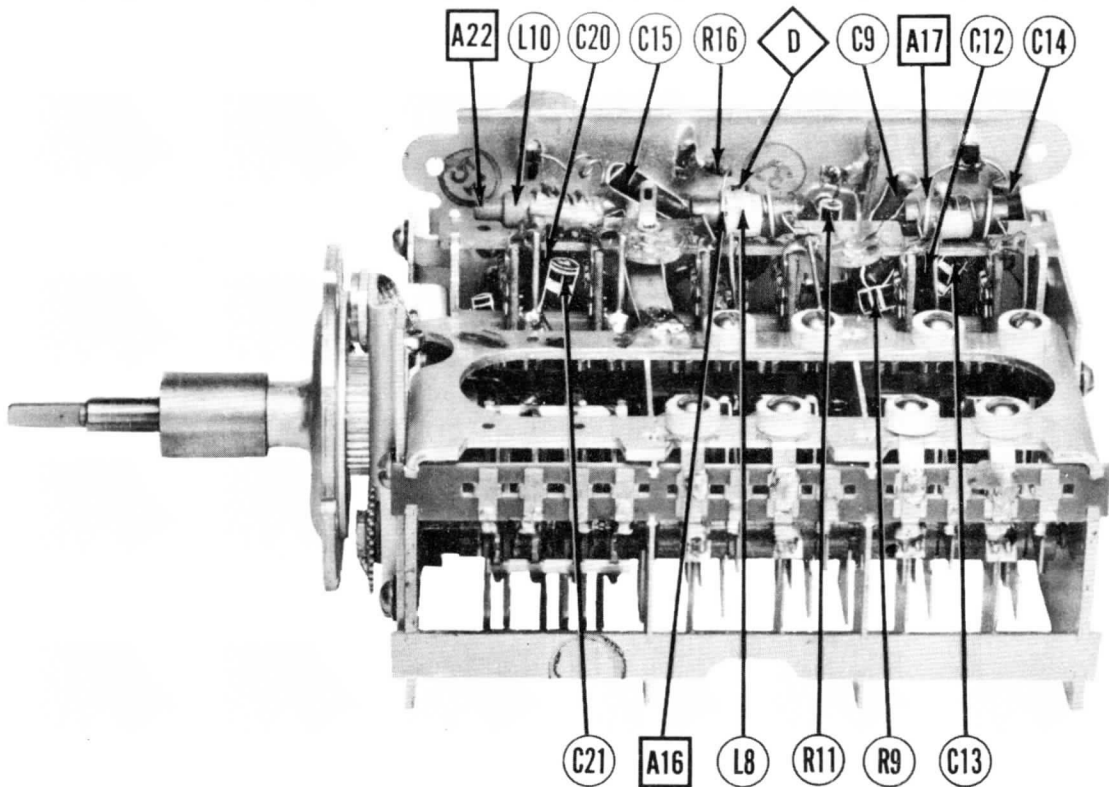
TUNER CL-1677 BOTTOM VIEW



TUNER CL-1677 RIGHT SIDE



TUNER CL-1633 LEFT SIDE



TUNER CL-1633 RIGHT SIDE



# ALIGNMENT INSTRUCTIONS

## SOUND TRAP & SOUND IF ALIGNMENT

Set contrast control to -3 volts. (Measure from arm of control to chassis. Leave at this setting throughout alignment) Injection of signal may be accomplished by fashioning a loop of two turns of insulated hook-up wire around the mixer tube (V2).

| DUMMY ANTENNA | SIGNAL GENERATOR COUPLING            | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM                                    | ADJUST     | REMARKS   |
|---------------|--------------------------------------|----------------------------|---------|---|------------|---|
| 1.            | Loop (See Prealignment Instructions) | 21.25MC (Unmod.)           | 9       | DC Probe to point $\diamond$ Common to chassis. | A1, A2     | Adjust for minimum deflection.  |
| 2.            | "                                    | "                          | "       | DC Probe to point $\diamond$ Common to chassis. | A3, A4, A5 | Adjust for maximum deflection. Attenuate signal generator to give approximately a 2 volt reading.   |
| 3.            | "                                    | "                          | "       | DC Probe to point $\diamond$ Common to chassis. | A6         | Adjust for Zero Reading. A positive and negative reading will be obtained on either side of correct setting. Repeat adjustments of A5 and A6. |

## VIDEO IF ALIGNMENT

Remove oscillator tube V3 while aligning video IF channel.

| DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM                                    | ADJUST | REMARKS                        |
|---------------|---------------------------|----------------------------|---------|---|--------|--------------------------------|
| 4.            | "                         | 21.8MC (Unmod.)            | 9       | DC Probe to point $\diamond$ Common to chassis. | A7     | Adjust for maximum deflection. |
| 5.            | "                         | 25.3MC                     | "       | "   | A8     | Adjust for maximum deflection. |
| 6.            | "                         | 22.3MC                     | "       | "   | A9     | Adjust for maximum deflection. |
| 7.            | "                         | 25.2MC                     | "       | "   | A10    | Adjust for maximum deflection. |
| 8.            | "                         | 23.4MC                     | "       | "   | A11    | Adjust for maximum deflection. |

## OVERALL VIDEO IF RESPONSE CHECK

Connect synchronized sweep voltage from signal generator to the horizontal amplifier of the oscilloscope.

| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE                                       | ADJUST      | REMARKS  |
|---------------|--------------------------|---------------------------|----------------------------|---------|---|-------------|--|
| 9.            | Loop around mixer tube.  | 25MC (10MC Sweep)         | 25.75MC                    | 9       | Vert. Amp. to point $\diamond$ Low side to chassis. | A8, A10     | Slightly retouch these adjustments to place 25.75MC marker as per Fig 1.   |
| 10.           | "                        | "                         | 22.25MC                    | "       | "   | A7, A9, A11 | Slightly retouch A7, A9 to place 22.25MC marker as per Fig 1. Adjust A11 to make flat-topped pattern. After these adjustments have been made recheck 25.75MC marker to see that it is still within 50 to 60% of the vertical height. |

This receiver incorporates one of three tuners. Determine which tuner is incorporated in receiver to be aligned and follow the corresponding tuner alignment.

## RF AMPLIFIER & MIXER ALIGNMENT (TUNER CL-1633)

The RF Amp. and mixer circuits are pre-aligned at factory and normally do not require adjustment. However, if tuner is definitely known to be out of align., it will be necessary to remove the tuner and use extended leads for B<sub>+</sub> and filament supply. Set fine tuning control to the center of its range and remove oscillator tube V3.

| DUMMY ANTENNA | SWEEP GENERATOR COUPLING   | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE                                       | ADJUST             | REMARKS   |
|---------------|--|---------------------------|----------------------------|---------|---|--------------------|---|
| 11            | Two 150 $\Omega$ carbon res. Insert 150 $\Omega$ resistor in each lead and connect across Antenna terminals. | 213MC (10MC Sweep)        | 211.25MC and 215.75MC      | 13      | Vert. Amp. to point $\diamond$ Low side to chassis. | A12, A13, A14, A15 | Adjust for approx. response shown in Fig 2 with markers appearing more than 70% of peak amplitude. Keep RF & mixer trimmer pairs in approx. same relative position. |
| 12            | "  | 177MC (10MC Sweep)        | 175.25MC and 179.75MC      | 7       | "   | A16, A17           | Adjust rings for wave form per Fig 2  |
| 13            | "  | 188MC (10MC Sweep)        | 181.25MC and 185.75MC      | 8       | "   |                    | Check response on all high-band channels. Slight adjustments of A12, A13, A14, A15, A16 or A17 may be required to obtain optimum response for all channels.         |
|               | "  | 189MC (10MC Sweep)        | 187.25MC and 191.75MC      | 9       | "   |                    |   |
|               | "  | 195MC (10MC Sweep)        | 193.25MC and 197.75MC      | 10      | "   |                    |   |
|               | "  | 201MC (10MC Sweep)        | 199.25MC and 203.75MC      | 11      | "   |                    |   |
|               | "  | 207MC (10MC Sweep)        | 205.25MC and 209.75MC      | 12      | "   |                    |   |
| 14            | "  | 85MC (10MC Sweep)         | 83.25MC and 87.75MC        | 6       | "   | A18, A19, A20, A21 | Adjust for approx. response as per Fig 2.   |
| 15            | "  | 79MC (10MC Sweep)         | 77.25MC and 81.75MC        | 5       | "   |                    | Check response on all low-band channel. Slight adjustments of A18, A19, A20, and A21 may be required to obtain optimum response for all channels.                   |
|               | "  | 69MC (10MC Sweep)         | 67.25MC and 71.75MC        | 4       | "   |                    |   |
|               | "  | 63MC (10MC Sweep)         | 61.25MC and 65.75MC        | 3       | "   |                    |   |
|               | "  | 57MC (10MC Sweep)         | 55.25MC and 59.75MC        | 2       | "   |                    |   |

**OSCILLATOR ALIGNMENT (TUNER CL-1633)**

Replace oscillator tube and recheck fine tuning to see that it is at the midpoint of its range.

| DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL  | CONNECT VTVM | ADJUST                                       | REMARKS |   |
|---------------|---------------------------|----------------------------|----------|--------------|--|---------|---|
| 16            | Two 150Ω carbon res.      | Across Antenna Terminal.   | 215.75MC | 13           | DC Probe to point $\odot$ Common to chassis. | A22     | Adjust for maximum deflection.  |
| 17            | "                         | "                          | 87.75MC  | 6            | "  | A23     | Adjust for maximum deflection.  |
| 18            | "                         | "                          | "        | "            | "  | "       | Check to see that all other channels are received well within limits of fine tuning control. If not, compromise may be made using A22 for channels 7 thru 13 and A23 for channels 2 thru 6. |

**WAVE TRAP ADJUSTMENTS (TUNER CL-1633)**

Wave traps A24 and A25 are used for specific types of interference and their alignment will depend upon the type encountered.  
 With the receiver tuned to the channel having the interference, set fine tuning control until interference is at maximum. Adjust A24 and A25 for minimum interference in the picture and sound keeping both cores at approximately the same relative position. Turn one core 1/2 turn and adjust the other for minimum interference.

**RF AMPLIFIER & MIXER ALIGNMENT (TUNER CL-1677)**

| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY  | CHANNEL  | CONNECT SCOPE                      | ADJUST   | REMARKS       |  |
|---------------|--------------------------|---------------------------|---|--|------------------------------------|--|---------------|--|
| 11            | Two 150Ω carbon res.     | Across Antenna Terminals. | 207MC (10MC Sweep) and 209.75MC   | 205.25MC and 209.75MC  | 12                                 | Vert Amp thru 10KΩ to point $\odot$ Low side to chassis. | A50, A51, A52 | Adjust for flat top pattern with markers appearing as per Fig 2  |
| 12            | "                        | "                         | 213MC (10MC Sweep) and 201MC (10MC Sweep) and 195MC (10MC Sweep) and 189MC (10MC Sweep) and 183MC (10MC Sweep) and 177MC (10MC Sweep) and 85MC (10MC Sweep) and 79MC (10MC Sweep) and 69MC (10MC Sweep) and 63MC (10MC Sweep) and 57MC (10MC Sweep) and 59.75MC | 211.25MC and 215.75MC and 199.25MC and 203.75MC and 193.25MC and 197.75MC and 187.25MC and 191.75MC and 181.25MC and 185.75MC and 179.75MC and 83.25MC and 87.75MC and 77.25MC and 81.75MC and 67.25MC and 71.75MC and 61.25MC and 65.75MC and 55.25MC | 13, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2 | "  | "             | Check markers on all channels. If maximum reception is desired for one specific channel adjust A50, A51 and A52 on that channel and then check all other channels to make certain they have not been appreciably affected. |

**OSCILLATOR ALIGNMENT (TUNER CL-1677)**

Complete alignment of the oscillator circuit may not be necessary. This is determined by checking to see that a zero reading is obtained for each channel when the fine tuning control is turned through the midpoint of its range. (Connect signal generator and VTVM as in steps 13 and 14. Sound frequencies are listed in step 14.). If the majority of the channels seem to need oscillator alignment this sometimes may be done by one operation—step 13—by adjusting A53. It should be noted that this is an all channel adjustment and should not be adjusted for individual channels. If step 13 fails to align the oscillator circuits sufficiently, it will be necessary to adjust the oscillator coil slugs. These are accessible one channel at a time. Turn the fine tuning control to its extreme counter-clockwise position which automatically centers this control. Note that the oscillator slugs are now available one by one, as the channel switch is rotated, through the small hole in the front panel of the tuner sub-chassis. Follow step 14 for alignment frequencies.

| DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY                           | CHANNEL   | CONNECT VTVM                       | ADJUST                                       | REMARKS |  |
|---------------|---------------------------|--|---|------------------------------------|--|---------|--|
| 13            | Direct                    | High side to one Ant. Terminal. Low side to chassis. | 215.75MC  | 13                                 | DC Probe to point $\odot$ Common to chassis. | A53     | Adjust for zero reading between positive and negative peaks. |
| 14            | "                         | "  | 209.75MC, 203.75MC, 197.75MC, 191.75MC, 185.75MC, 179.75MC, 87.75MC, 81.75MC, 71.75MC, 65.75MC, 59.75MC | 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2 | "  | "       |  |

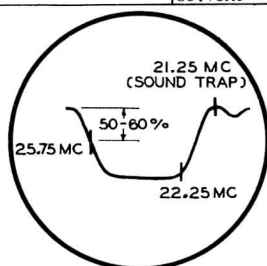


FIG. 1

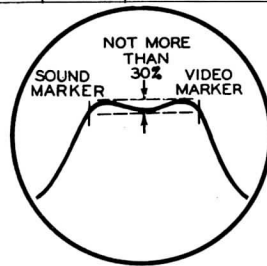


FIG. 2

**OLYMPIC  
MODEL TV-922**

# ALIGNMENT INSTRUCTIONS (CONT.)

| RF AMPLIFIER & MIXER ALIGNMENT (TUNER CL-1428) |                          |                           |                            |                       |               |   |                    |  |
|--|--------------------------|---------------------------|----------------------------|-----------------------|---------------|---|--------------------|--|
| DUMMY ANTENNA                                  | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL               | CONNECT SCOPE | ADJUST  | REMARKS            |  |
| 11   | Two 150Ω carbon res.     | Across Antenna Terminals. | 213 (10MC Sweep)           | 211.25MC and 215.75   | 13            | Vert. Amp. thru 10KΩ to point B. Low side to chassis. | A26, A27, A28, A29 | Adjust for a approx. response pattern shown in Fig. 2 with markers appearing more than 70% of peak amplitude. The dip should not exceed 30%. Keep RF and Mixer slug pairs in approx. same relative position. |
| 12   | "                        | "                         | 207 (10MC Sweep)           | 205.25MC and 209.75MC | 12            | "   | "                  | Check response pattern for all high band channels. Slight adjustments of A26, A27, A28, and A29 may be required to obtain optimum response for all channels.   |
|  |                          |                           | 201 (10MC Sweep)           | 199.25MC and 203.75MC | 11            |   |                    |  |
|  |                          |                           | 195 (10MC Sweep)           | 193.25MC and 197.75MC | 10            |   |                    |  |
|  |                          |                           | 189 (10MC Sweep)           | 187.25MC and 191.75MC | 9             |   |                    |  |
|  |                          |                           | 183 (10MC Sweep)           | 181.25MC and 185.75MC | 8             |   |                    |  |
|  |                          |                           | 177 (10MC Sweep)           | 175.25MC and 179.75MC | 7             |   |                    |  |
| 13   | "                        | "                         | 85MC (10MC Sweep)          | 83.25MC and 87.75MC   | 6             | "   | A30, A31, A32, A33 | adjust for approx. response as per Fig 2. Keep slug pairs in approx. same relative position.   |
| 14   | "                        | "                         | 79MC (10MC Sweep)          | 77.25MC and 81.75MC   | 5             |   |                    | Check response in all low band channels. Slight adjustment of A30, A31, A32 and A33 may be required to give optimum response on all channels.  |
|  |                          |                           | 69MC (10MC Sweep)          | 67.25MC and 71.75MC   | 4             |   |                    |  |
|  |                          |                           | 63MC (10MC Sweep)          | 61.25MC and 65.75MC   | 3             |   |                    |  |
|  |                          |                           | 57MC (10MC Sweep)          | 55.25MC and 59.75MC   | 2             |   |                    |  |

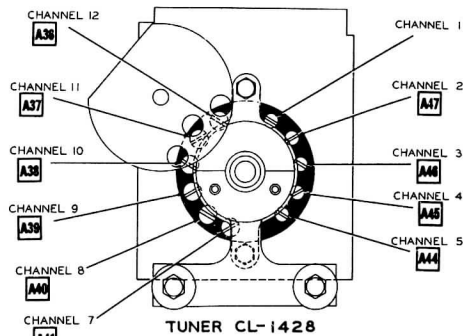
### OSCILLATOR ALIGNMENT (TUNER CL-1428)

Set fine tuning control approximately 140° from its full counter-clockwise position. This aligns the holes in the drive disc with the adjustment screws on the oscillator switch wafer. Do not change this position during entire oscillator alignment.

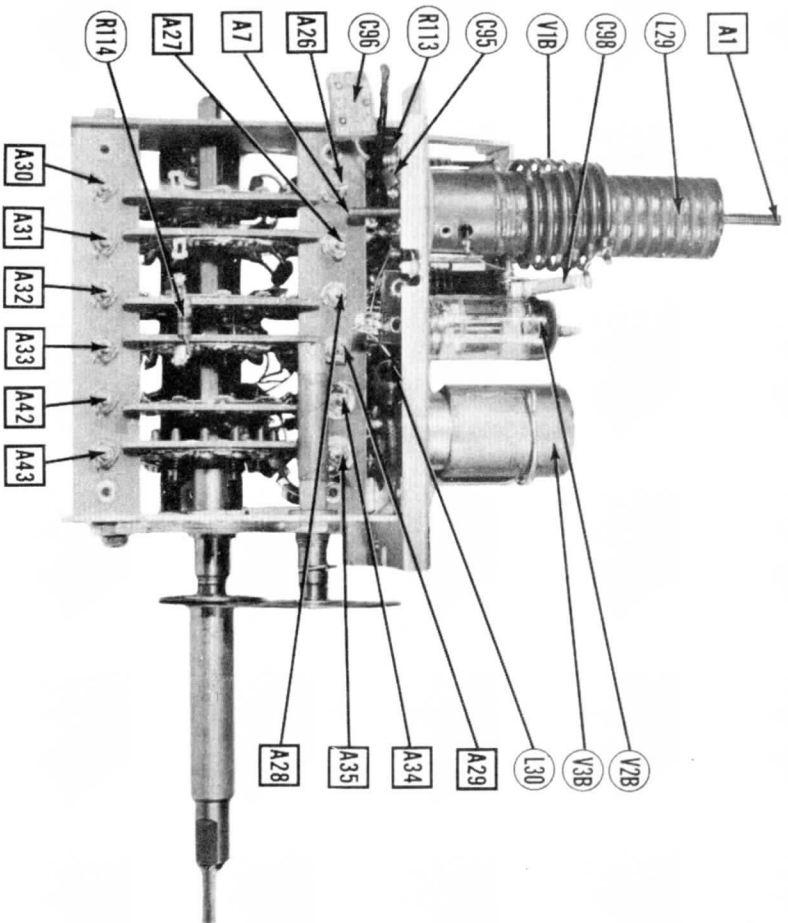
| DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL  | CONNECT VTVM | ADJUST                                  | REMARKS    |                            |
|---------------|---------------------------|----------------------------|----------|--------------|---|------------|----------------------------|
| 15            | Two 150Ω carbon res.      | Across Antenna Terminals.  | 215.75MC | 13           | DC Probe to point B. Common to chassis. | A34 or A35 | Adjust for max. deflection |
| 16            | "                         | "                          | 209.75MC | 12           | "                                       | A36        | " " " "                    |
| 17            | "                         | "                          | 203.75MC | 11           | "                                       | A37        | " " " "                    |
| 18            | "                         | "                          | 197.75MC | 10           | "                                       | A38        | " " " "                    |
| 19            | "                         | "                          | 191.75MC | 9            | "                                       | A39        | " " " "                    |
| 20            | "                         | "                          | 185.75MC | 8            | "                                       | A40        | " " " "                    |
| 21            | "                         | "                          | 179.75MC | 7            | "                                       | A41        | " " " "                    |
| 22            | "                         | "                          | 87.75MC  | 6            | "                                       | A42 or A43 | " " " "                    |
| 23            | "                         | "                          | 81.75MC  | 5            | "                                       | A44        | " " " "                    |
| 24            | "                         | "                          | 71.75MC  | 4            | "                                       | A45        | " " " "                    |
| 25            | "                         | "                          | 65.75MC  | 3            | "                                       | A46        | " " " "                    |
| 26            | "                         | "                          | 59.75MC  | 2            | "                                       | A47        | " " " "                    |

### WAVE TRAP ADJUSTMENTS (TUNER CL-1428)

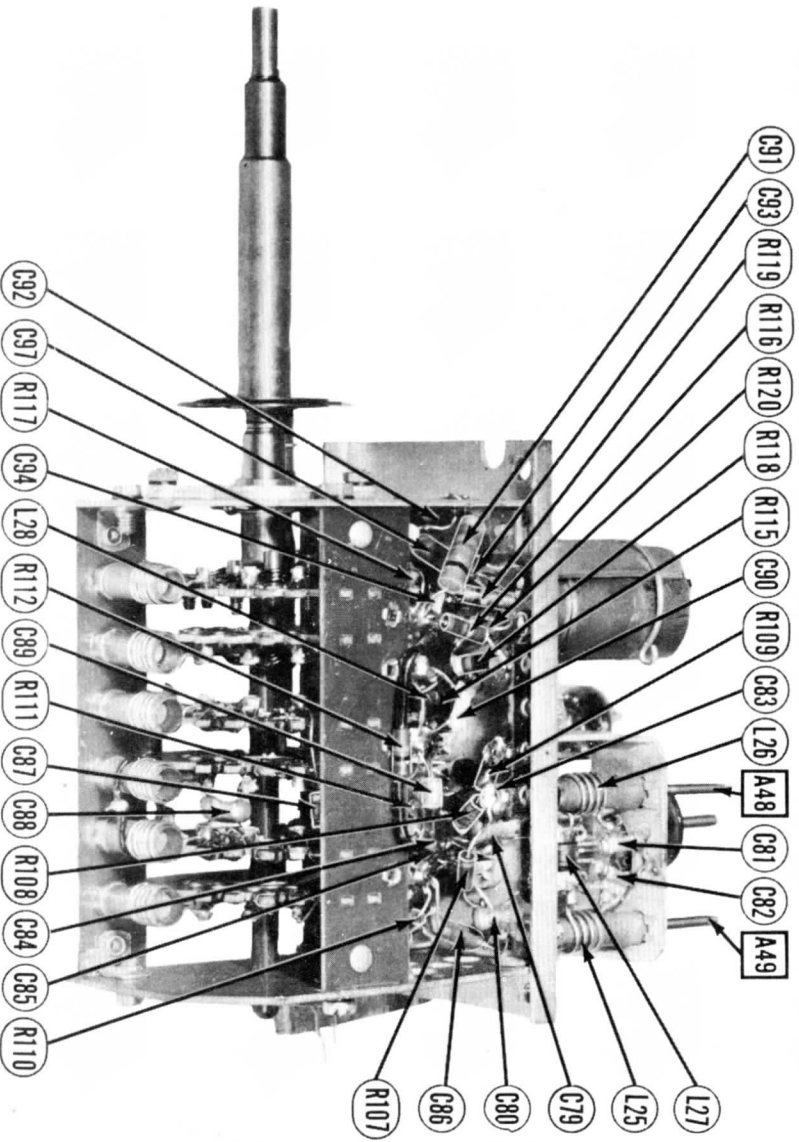
Wave traps A48 and A49 are used for specific types of interference and their alignment will depend upon the type encountered. With the receiver tuned to the channel having the interference set fine tuning control until interference is at maximum. Adjust A48 and A49 for minimum interference in the picture and sound keeping the cores at approximately the same relative position. Turn one core 1/2 turn adjust the other for minimum interference.



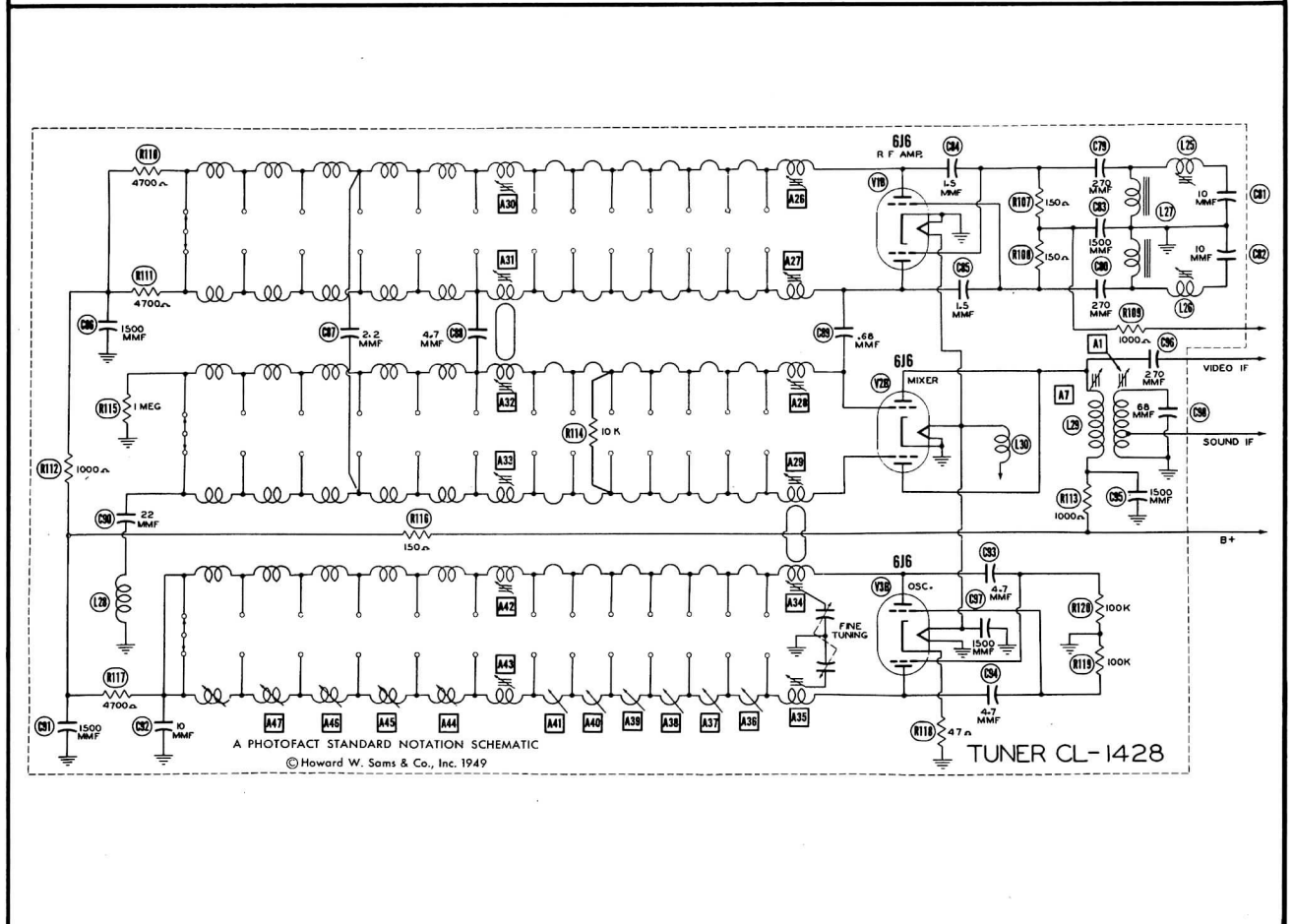
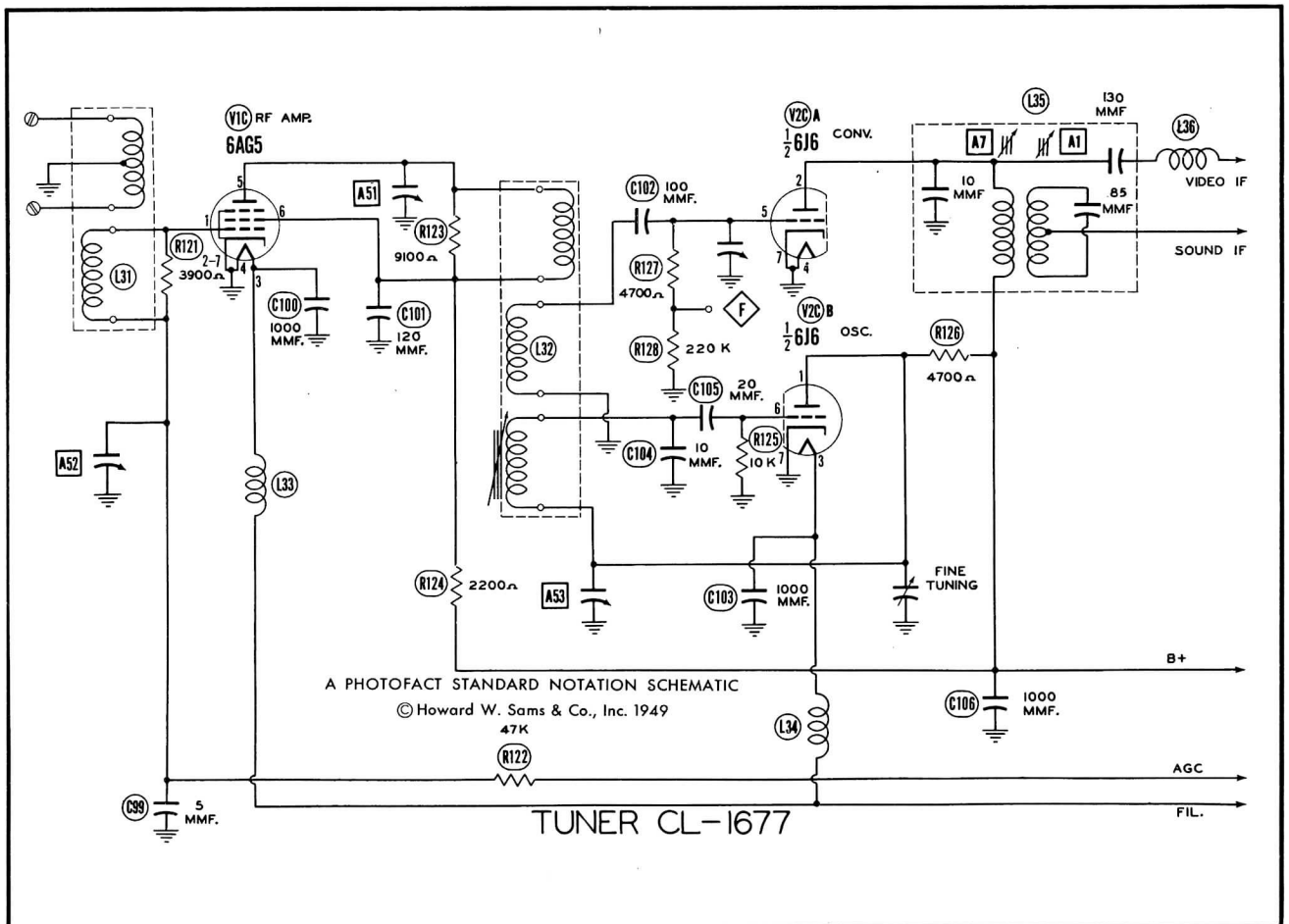
RF OSCILLATOR ALIGNMENT POINTS

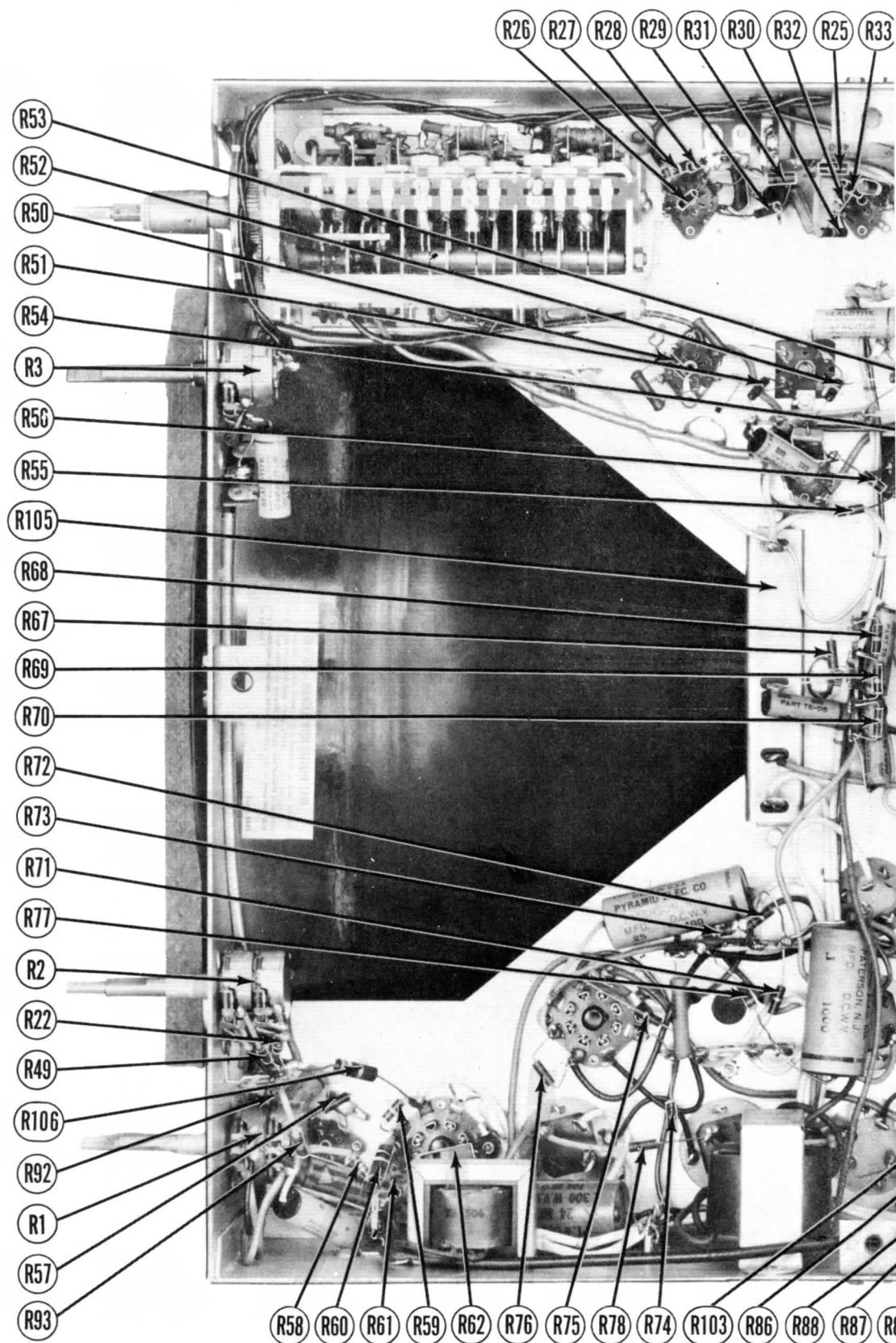


TUNER CL-1428 LEFT SIDE



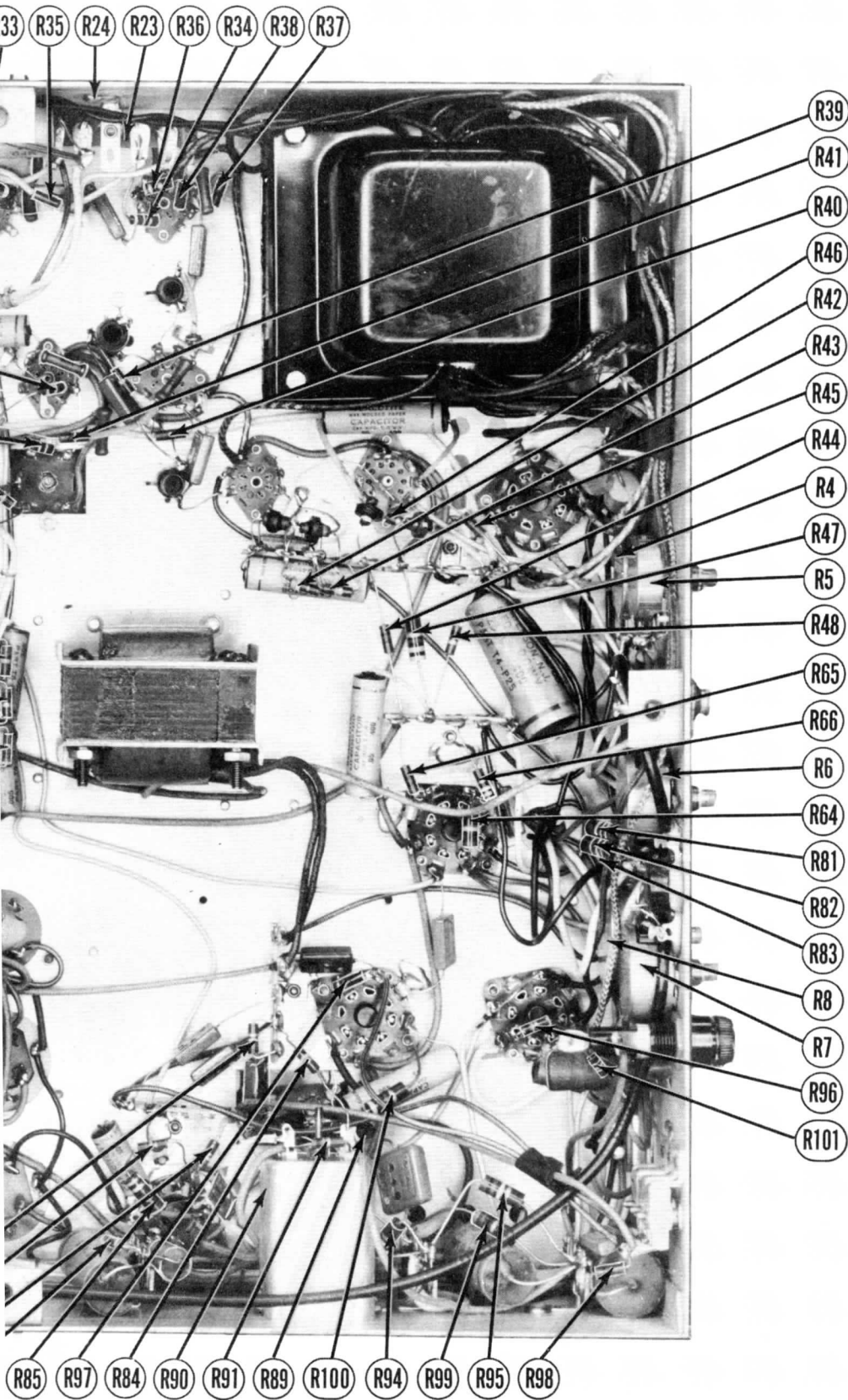
TUNER CL-1428 RIGHT SIDE





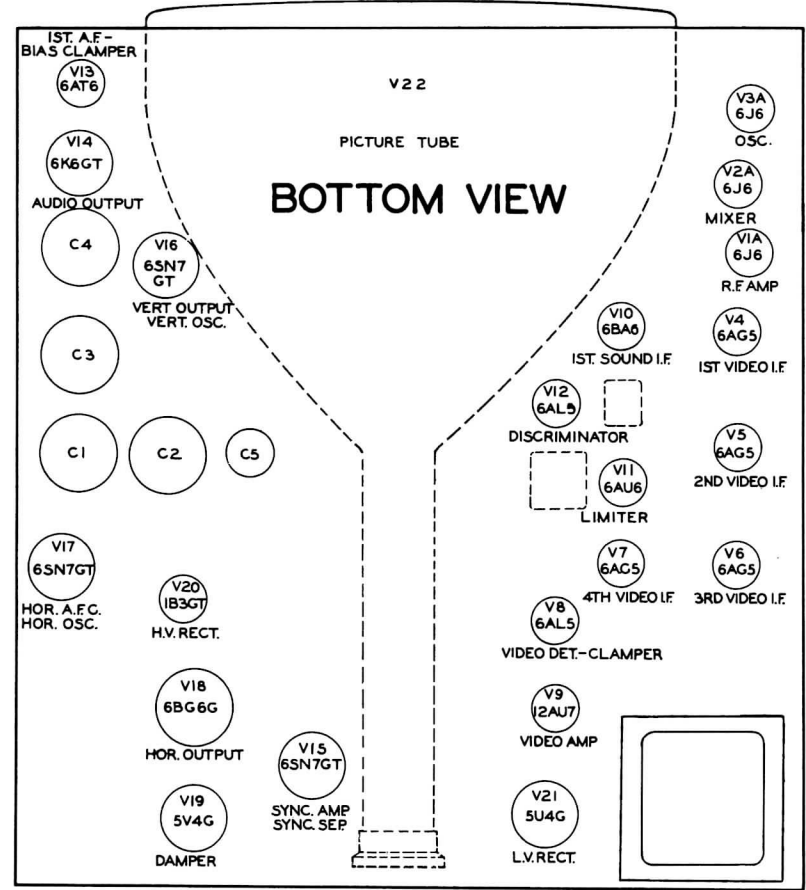
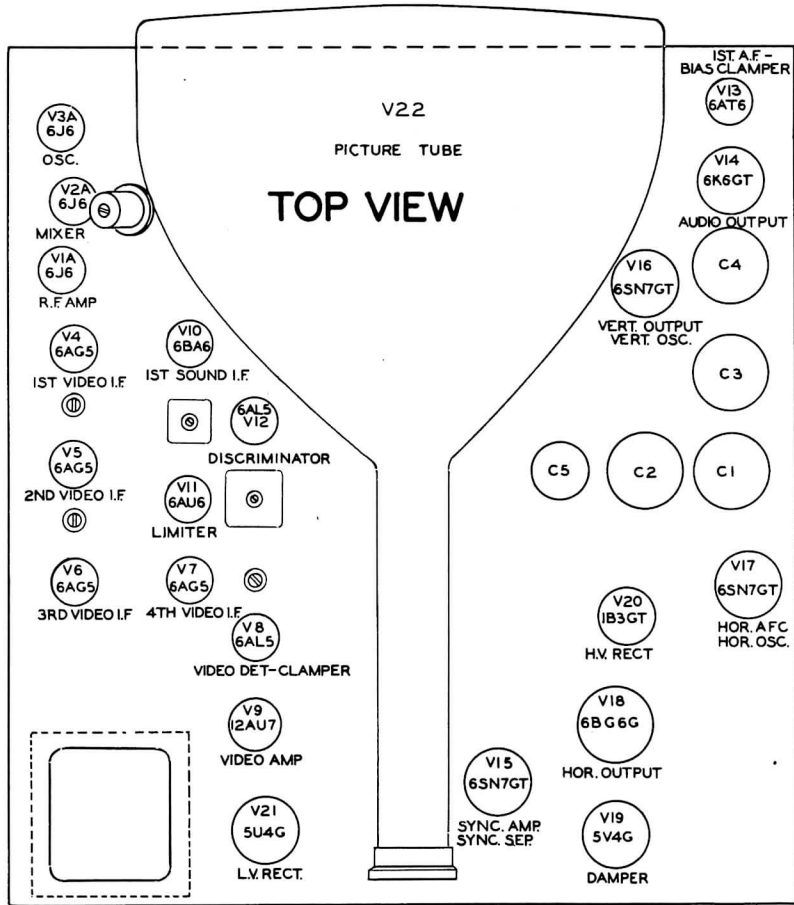
CHASSIS BOTTOM VIEW-RE





RESISTOR IDENTIFICATION





TUBE PLACEMENT CHART

# VOLTAGE AND RESISTANCE MEASUREMENTS

**VOLTAGE READINGS**

| Item | Tube   | Pin 1   | Pin 2    | Pin 3            | Pin 4           | Pin 5              | Pin 6     | Pin 7   | Pin 8    | Cap         |
|------|--------|---------|----------|------------------|-----------------|--------------------|-----------|---------|----------|-------------|
| V1A  | 6J6    | 93VDC   | 93VDC    | 0V               | 6.3VAC          | -.7VDC             | -.7VDC    | 0V      |          |             |
| V2A  | 6J6    | 100VDC  | 100VDC   | 6.3VAC           | 0V              | 1.8VDC             | -2.2VDC   | 0V      |          |             |
| V3A  | 6J6    | 90VDC   | 90VDC    | 0V               | 6.3VAC          | \$.3VDC            | \$.4.5VDC | .3VDC   |          |             |
| V4   | 6AG5   | -.8VDC  | .2VDC    | 6.3VAC           | 0V              | 100VDC             | 100VDC    | .2VDC   |          |             |
| V5   | 6AG5   | -.8VDC  | .2VDC    | 6.3VAC           | 0V              | 100VDC             | 100VDC    | .2VDC   |          |             |
| V6A  | 6AG5   | -.8VDC  | .2VDC    | 6.3VAC           | 0V              | 85VDC              | 100VDC    | .2VDC   |          |             |
| V7A  | 6AG5   | 0V      | 1VDC     | 0V               | 6.3VAC          | 60VDC              | 100VDC    | 1VDC    |          |             |
| V8   | 6AL5   | 0V      | -5.8VDC  | 6.3VAC           | 0V              | 0V                 | 0V        | -4.9VDC |          |             |
| V9   | 12AU7  | 100VDC  | -.7VDC   | 0V               | 6.3VAC          | 6.3VAC             | 50VDC     | -90VDC  | -90VDC   | PIN 9<br>0V |
| V10A | 6BA6   | 0V      | 0V       | 0V               | 6.3VAC          | 90VDC              | 90VDC     | 1VDC    |          |             |
| V11A | 6AU6   | -.5VDC  | 0V       | 0V               | 6.3VAC          | 105VDC             | 73VDC     | 0V      |          |             |
| V12  | 6AL5   | 0V      | -.4VDC   | 6.3VAC           | 0V              | 0V                 | 0V        | -.4VDC  |          |             |
| V13  | 6AT6   | -.5VDC  | 0V       | 0V               | 6.3VAC          | -.6VDC             | -.7VDC    | 65VDC   |          |             |
| V14  | 6K6GT  | 200VDC  | 6.3VAC   | 200VDC           | 205VDC          | -10VDC             | -15VDC    | 0V      | 0V       |             |
| V15  | 6SN7GT | -.8VDC  | 150VDC   | 0V               | -5.4VDC         | 225VDC             | .6VDC     | 6.3VAC  | 0V       |             |
| V16  | 6SN7GT | -92VDC  | -7VDC    | -90VDC           | -63VDC          | 225VDC             | -75VDC    | 6.3VAC  | 0V       |             |
| V17  | 6SN7GT | -70VDC  | 50VDC    | -85VDC           | -125VDC         | 65VDC              | -90VDC    | 6.3VAC  | 0V       |             |
| V18  | 6BG6G  | 0V      | 6.3VAC   | -80VDC           | 0V              | -85VDC             | -85VDC    | 0V      | 172VDC   | †           |
| V19  | 5V4G   | -90VDC  | **320VDC | 290VDC           | 260VDC          | 0V                 | 260VDC    | 0V      | **320VDC |             |
| V20  | 1B3GT  | †       | DO NOT   | MEASURE          |                 |                    |           |         |          |             |
| V21  | 5U4G   | 0V      | 275VDC   | 0V               | 365VAC          | 0V                 | 365VAC    | 0V      | 275VDC   |             |
| V22  | 10BP4  | †108VDC | 45VDC    | PIN 10<br>310VDC | PIN 11<br>58VDC | PIN 12<br>† 108VDC |           |         |          |             |

Note  
 † Do not measure  
 \*\* 5VAC will be measured between filament pins.  
 ‡ 6.3VAC will be measured between filament pins.  
 † TAKEN WITH VACUUM TUBE VOLTMETER.

**RESISTANCE READINGS**

| Item | Tube   | Pin 1   | Pin 2                | Pin 3          | Pin 4          | Pin 5        | Pin 6         | Pin 7  | Pin 8 | Cap          |
|------|--------|---------|----------------------|----------------|----------------|--------------|---------------|--------|-------|--------------|
| V1A  | 6J6    | *2.5K   | *2.5K                | 0Ω             | .2Ω            | 80K          | 80K           | 0Ω     |       |              |
| V2A  | 6J6    | *2.5K   | *2.5K                | .2Ω            | 0              | 1 Meg.       | 1 Meg.        | 0Ω     |       |              |
| V3A  | 6J6    | *2.5K   | *2.5K                | 0Ω             | .2Ω            | 100K         | 100K          | 47Ω    |       |              |
| V4   | 6AG5   | 15K     | 39Ω                  | .2Ω            | 0Ω             | *2.2K        | *2.2K         | 39Ω    |       |              |
| V5   | 6AG5   | 16K     | 39Ω                  | .2Ω            | 0Ω             | *2.5K        | *2.5K         | 39Ω    |       |              |
| V6A  | 6AG5   | 12K     | 39Ω                  | .2Ω            | 0Ω             | *5K          | *2.5K         | 39Ω    |       |              |
| V7A  | 6AG5   | .2Ω     | 150Ω                 | 0Ω             | .2Ω            | *8K          | *2.5K         | 150Ω   |       |              |
| V8   | 6AL5   | .2Ω     | 3.9 Meg.             | .2Ω            | 0Ω             | 0Ω           | 0Ω            | 2.8K   |       |              |
| V9   | 12AU7  | *3.5K   | 1 Meg.               | 0Ω             | .2Ω            | .2Ω          | *5.5K         | 1 Meg. | 800Ω  | PIN 9<br>0Ω  |
| V10A | 6BA6   | 0Ω      | 0Ω                   | 0Ω             | .2Ω            | *2.5K        | *2.5K         | 80Ω    |       |              |
| V11A | 6AU6   | 470K    | 0Ω                   | 0Ω             | .2Ω            | *2.2K        | 24K           | 0Ω     |       |              |
| V12  | 6AL5   | 200K    | 100K                 | .2Ω            | 0Ω             | 0Ω           | 0Ω            | 100K   |       |              |
| V13  | 6AT6   | 10 Meg. | 0Ω                   | 0Ω             | .2Ω            | Inf.         | 80K           | *350K  |       |              |
| V14  | 6K6GT  | 20K     | .2Ω                  | *2K            | *2K            | 540K         | 130Ω          | 0Ω     | 0Ω    |              |
| V15  | 6SN7GT | 1 Meg.  | *15K                 | 0Ω             | 3.9 Meg.       | *1K          | 6K            | .2Ω    | 0Ω    |              |
| V16  | 6SN7GT | 1 Meg.  | 2.8 Meg.<br>1.4 Meg. | 800Ω           | 2 Meg.         | *2K          | 1300Ω<br>6.5K | .2Ω    | 0Ω    |              |
| V17  | 6SN7GT | 700K    | 200K                 | 280K           | 200K           | *500K        | 700Ω          | .2Ω    | 0Ω    |              |
| V18  | 6BG6G  | Inf.    | .2Ω                  | 820Ω           | Inf.           | 1.2 Meg      | 1.2 Meg       | 0Ω     | *4.5K | *Cap<br>500K |
| V19  | 5V4G   | 700Ω    | 420K                 | 420K           | *65Ω           | Inf.         | *65Ω          | Inf.   | 420K  | Cap<br>*500K |
| V20  | 1B3GT  | Inf.    | Inf.                 | Inf.           | Inf.           | Inf.         | Inf.          | Inf.   | Inf.  |              |
| V21  | 5U4G   | Inf.    | 9K                   | Inf.           | 800Ω           | Inf.         | 800Ω          | Inf.   | 9K    |              |
| V22  | 10BP4  | 8K      | 12K                  | PIN 10<br>420K | PIN 11<br>110K | PIN 12<br>8K |               |        |       |              |

\* Measured from Pin 8 of V21

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms.</li> <li>Sockets connections are shown as bottom views.</li> <li>Measured values are from socket pin to common negative unless otherwise stated.</li> </ol> | <ol style="list-style-type: none"> <li>Line voltage maintained at 117 volts for voltage readings.</li> <li>Front panels controls set at maximum.</li> <li>Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.</li> </ol> |
|--|---|



# PARTS LIST A

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE                         | REPLACEMENT DATA |                      | RMA BASE TYPE | NOTES |
|----------|-----------------------------|------------------|----------------------|---------------|-------|
|          |                             | OLYMPIC PART No. | STANDARD REPLACEMENT |               |       |
| V1A      | RF Amp.                     | 6J6              | 6J6                  | 7BF           |       |
| V1B      | RF Amp.                     | 6J6              | 6J6                  | 7BF           |       |
| V1C      | RF Amp.                     | 6AG5             | 6AG5                 | 7BD           |       |
| V2A      | Mixer                       | 6J6              | 6J6                  | 7BF           |       |
| V2B      | Mixer                       | 6J6              | 6J6                  | 7BF           |       |
| V2C      | Converter                   | 6J6              | 6J6                  | 7BF           |       |
| V3A      | RF Osc.                     | 6J6              | 6J6                  | 7BF           |       |
| V3B      | RF Osc.                     | 6J6              | 6J6                  | 7BF           |       |
| V4       | 1st Video IF Amp            | 6AG5             | 6AG5                 | 7BD           |       |
| V5       | 2nd Video IF Amp            | 6AG5             | 6AG5                 | 7BD           |       |
| V6A      | 3rd Video IF Amp            | 6AG5             | 6AG5                 | 7BD           |       |
| V6B      | 3rd Video IF Amp            | 6AK5             | 6AK5                 | 7BD           |       |
| V7A      | 4th Video IF Amp            | 6AG5             | 6AG5                 | 7BD           |       |
| V7B      | 4th Video IF Amp            | 6AK5             | 6AK5                 | 7BD           |       |
| V8       | Video Det. - Clamper        | 6AL5             | 6AL5                 | 6BT           |       |
| V9       | Video Amp.                  | 12AU7            | 12AU7                | 9A            |       |
| V10A     | 1st sound IF Amp            | 6BA6             | 6BA6                 | 7BK           |       |
| V10B     | 1st sound IF Amp            | 6AU6             | 6AU6                 | 7BK           |       |
| V11A     | Limiter                     | 6AU6             | 6AU6                 | 7BK           |       |
| V11B     | Limiter                     | 6AK5             | 6AK5                 | 7BK           |       |
| V11C     | Limiter                     | 6AG5             | 6AG5                 | 7BD           |       |
| V12      | Discriminator               | 6AL5             | 6AL5                 | 6BT           |       |
| V13      | 1st AF & Bias Clamper       | 6AT6             | 6AT6                 | 7BT           |       |
| V14      | Audio Output                | 6K6GT            | 6K6GT                | 7S            |       |
| V15      | Sync. Amp. and Sync. Sep.   | 6SN7GT           | 6SN7GT               | 8BD           |       |
| V16      | Vert. Osc. and Vert. Output | 6SN7GT           | 6SN7GT               | 8BD           |       |
| V17      | Horiz. AFC and Horiz. Osc.  | 6SN7GT           | 6SN7GT               | 8BD           |       |
| V18      | Horiz. Output               | 6BG6G            | 6BG6G                | 8BT           |       |
| V19      | Damper                      | 5V4G             | 5V4G                 | 5L            |       |
| V20      | H. V. Rectifier             | 1B3GT            | 1B3GT                | 3C            |       |
| V21      | L. V. Rectifier             | 5U4G             | 5U4G                 | 5T            |       |
| V22      | Picture Tube                | 10BP4            | 10BP4                |               |       |

## CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

| ITEM No. | RATING |      | REPLACEMENT DATA |                  |                | IDENTIFICATION CODES AND INSTALLATION NOTES |
|----------|--------|------|------------------|------------------|----------------|---|
|          | CAP.   | VOLT | OLYMPIC PART No. | AEROVOX PART No. | SOLAR PART No. |   |
| C1A      | 40     | 450  | CO-1494          |                  |                | ▲ Filter                                    |
| C1B      | 40     | 150  |                  |                  |                | ■ Bias Filter                               |
| C1C      | 130    | 150  |                  |                  |                | ▲ Vert. Output Cath. Byp.                   |
| C2A      | 40     | 450  | CO-1497          |                  |                | ▲ Filter                                    |
| C2B      | 10     | 450  |                  |                  |                | ▲ Vert. Output Decoup.                      |
| C3A      | 80     | 450  | CO-1495          | UP9B-857         |                | ▲ Filter                                    |
| C3B      | 10     | 450  |                  |                  |                | ▲ Filter                                    |
| C4A      | 10     | 450  | CO-1496          |                  |                | ▲ Filter                                    |
| C4B      | 30     | 400  |                  |                  |                | ▲ Filter                                    |
| C4C      | 30     | 300  |                  |                  |                | ▲ Filter                                    |
| C5A      | 250    | 10   | CO-1498          | UP7B-808         |                | ■ Filter                                    |
| C5B      | 1000   | 6    |                  |                  |                | ■ Hor. Cent. Bypass                         |
| C6       | 24     | 300  | CO-1493          |                  |                | ▲ Ver. Cent. Bypass                         |
| C7       | 8      |      | Note 1           |                  |                | Decoupling                                  |
| C8       | 8      |      |                  |                  |                | Fixed Trimmer Cer.                          |
| C9       | 1500   |      |                  |                  |                | Fixed Trimmer Cer.                          |
| C10      | 300    |      |                  |                  |                | Gain Filter                                 |
| C11      | 500    |      |                  |                  |                | Ant. Coupling                               |
| C12      | 1.5    |      |                  |                  |                | Ant. Coupling                               |
| C13      | 1.5    |      |                  |                  |                | Neutralizing                                |
| C14      | 500    |      |                  |                  |                | Neutralizing                                |
| C15      | 1500   |      |                  |                  |                | RF Fil. Bypass                              |
| C16      | 1500   |      |                  |                  |                | Mixer Grid Filter                           |
| C17      | 68     |      |                  |                  |                | Mixer Decoupling                            |
| C18      | 300    | 500  |                  | 1468-0003        | 5W5T3          | MO.5-33                                     |
| C19      | 500    |      |                  | 1468-0005        | 5W5T5          | MO.5-35                                     |
| C20      | 4.7    |      |                  |                  |                | Decoupling Cer.                             |
| C21      | 4.7    |      |                  |                  |                | Osc. Feedback                               |
| C22      | 500    |      |                  |                  |                | Osc. Fil. Bypass                            |
| C25      | .25    | 400  | CO-H-4254        | P488-25          | GT2P25         | ST-4-25                                     |
| C24      | 1500   |      | CCR152M          | 1467-0015        | 1W5D15         | MW.5-215                                    |
| C25      | 270    | 1000 | SCM40A271K       |                  | 1W5D15         | MW.5-215                                    |
| C26      | 1500   |      | CCR152M          | 1467-0015        | 1W5D15         | MW.5-215                                    |
| C27      | 1500   |      | CCR152M          | 1467-0015        | 1W5D15         | MW.5-215                                    |
| C28      | 270    | 1000 | SCM40A271K       |                  | 1W5D15         | MW.5-215                                    |
| C29      | 1500   |      | CCR152M          | 1467-0015        | 1W5D15         | MW.5-215                                    |
| C30      | 1500   |      | CCR152M          | 1467-0015        | 1W5D15         | MW.5-215                                    |
| C31      | 270    | 1000 | SCM40A271K       |                  | 1W5D15         | MW.5-215                                    |
| C32      | 75     |      | *                |                  |                |   |
| C33      | 100    | 500  | RSM20A101M       | 1463-0001        | 5W5T1          | MO.5-31                                     |
| C34      | 1500   |      | CCR152M          | 1467-0015        | 1W5D15         | MW.5-215                                    |
| C35      | 270    | 1000 | SCM40A271K       |                  | 1W5D15         | MW.5-215                                    |
| C36      | 10     | 500  | RSM20A100J       | 1469-00001       | 5R5Q1          | MOS.5-41                                    |
| C37      | .05    | 400  | CO-H-4503        | P488-05          | GT485          | ST-4-05                                     |
| C38      | .05    | 400  | CO-H-4503        | P488-05          | GT485          | ST-4-05                                     |
| C39      | .25    | 400  | CO-H-4254        | P488-25          | GT4P25         | ST-4-25                                     |
| C40      | .25    | 400  | CO-H-4254        | P488-25          | GT4P25         | ST-4-25                                     |
| C41      | 1500   |      | CCR-152M         | 1467-0015        | 1W5D15         | MW.5-215                                    |
| C42      | 1500   |      | CCR-152M         | 1467-0015        | 1W5D15         | MW.5-215                                    |
| C43      | .01    | 600  | CO-H-6103        | P688-01          | GT6S1          | ST-6-01                                     |
| C44      | 1500   |      | CCR152M          | 1467-0015        | 1W5D15         | MW.5-215                                    |
| C45      | 1500   |      | CCR152M          | 1467-0015        | 1W5D15         | MW.5-215                                    |
| C46      | 270    | 1000 | SCM40A271K       |                  | 1W5D15         | MW.5-215                                    |
| C47      | .002   | 600  | CO-H-6202        | P688-002         | GT6D2          | ST-6-002                                    |
| C48      | .01    | 600  | CO-H-6103        | P688-01          | GT6S1          | ST-6-01                                     |
| C49      | .002   | 600  | CO-H-6202        | P688-002         | GT6D2          | ST-6-002                                    |
| C50      | .01    | 600  | CO-H-6103        | P688-01          | GT6S1          | ST-6-01                                     |
| C51      | .005   | 600  | CO-H-6502        | P688-005         | GT6D5          | ST-6-005                                    |
| C52      | .05    | 400  | CO-H-4503        | P488-05          | GT485          | ST-4-05                                     |
| C53      | 100    | 500  | RSM20A101M       | 1469-0001        | 5R5T1          | MOS.5-31                                    |

| ITEM No. | RATING |      | REPLACEMENT DATA |                  |
|----------|--------|------|------------------|------------------|
|          | CAP.   | VOLT | OLYMPIC PART No. | AEROVOX PART No. |
| C54      | 390    | 1000 | SCM40A391K       |                  |
| C55      | 002    | 600  | CO-H-6202        | P688-002         |
| C56      | 005    | 600  | CO-H-6502        | P688-005         |
| C57      | 005    | 600  | CO-H-6502        | P688-005         |
| C58      | 4700   |      | CCR472K          |                  |
| C59      | .25    | 400  | CO-H-4254        | P488-25          |
| C60      | .1     | 1000 | CO-O-X104        | 1084-1           |
| C61      | 120    | 1000 | SCM40A121K       |                  |
| C62      | 120    | 1000 | SCM40A121K       |                  |
| C63      | .002   | 600  | CO-H-6202        | P688-002         |
| C64      | .25    | 400  | CO-H-4254        | P488-25          |
| C65      | .02    | 400  | CO-H-4203        | P488-02          |
| C66      | 180    | 1000 | SCM40C181J       |                  |
| C67      | 2200   | 1000 | SCM40A222J       |                  |
| C68      | .05    | 400  | CO-H-4503        | P488-05          |
| C69      | 390    | 1000 | SCM40A391K       |                  |
| C70      | .47    | 500  | RCM20A470K       |                  |
| C71      | .25    | 400  | CO-H-4254        | P488-25          |
| C72      | .05    | 400  | CO-H-4503        | P488-05          |
| C73      | .035   | 1000 | CO-O-X353        |                  |
| C74      | .1     | 1000 | CO-O-X104        | 1084-1           |
| C75      | 500    | 1500 | CO-1528          |                  |
| C76      | 5      | 1500 | CO-1542          |                  |
| C77      | .01    | 600  | CO-B-6103        | P688-01          |
| C78      | .01    | 600  | CO-B-6103        | P688-01          |
| C79      | 270    |      | Note 2           |                  |
| C80      | 270    |      |                  |                  |
| C81      | 10     |      |                  |                  |
| C82      | 10     |      |                  |                  |
| C83      | 1500   |      |                  |                  |
| C84      | 1.5    |      |                  |                  |
| C85      | 1.5    |      |                  |                  |
| C86      | 1500   |      |                  |                  |
| C87      | 2.2    |      |                  |                  |
| C88      | 4.7    |      |                  |                  |
| C89      | .68    |      |                  |                  |
| C90      | 22     |      |                  |                  |
| C91      | 1500   |      |                  |                  |
| C92      | 10     |      |                  |                  |
| C93      | 4.7    |      |                  |                  |
| C94      | 4.7    |      |                  |                  |
| C95      | 1500   |      |                  |                  |
| C96      | 270    |      |                  |                  |
| C97      | 1500   |      |                  |                  |
| C98      | 68     |      |                  |                  |
| C99      | 5      |      | Note 3           |                  |
| C100     | 1000   |      |                  |                  |
| C101     | 120    |      |                  |                  |
| C102     | 100    |      |                  |                  |
| C103     | 1000   |      |                  |                  |
| C104     | 10     |      |                  |                  |
| C105     | 20     |      |                  |                  |
| C106     | 1000   |      |                  |                  |

\* Item C32 and L15 are combined into one unit.  
 Note 1. Items C7 to C22 inc. are used in 1.  
 Note 2. Items C79 to C98 inc. are used in 1.  
 Note 3. Items C99 to C106 inc. are used in 1.

| ITEM No. | RATING     |       | REPLACEMENT DATA |              |                |
|----------|------------|-------|------------------|--------------|----------------|
|          | RESISTANCE | WATTS | OLYMPIC PART No. | IRC PART No. | CLAR. PART No. |
| R1A      | 1 Meg.     | ±     | PT-1479          |              |                |
| R1B      | 50KΩ       | ±     |                  |              |                |
| R2A      | 500KΩ      | ±     | PT-1478          |              |                |
| R2B      | 10KΩ       | ±     |                  |              |                |
| R3A      | 1 Meg.     | ±     | PT-1477          | D13-137      | M-63-          |
| R3B      | Shaft      |       | Not Req.         | A            | Not R          |
| R3C      | Switch     |       | Not Req.         | 41           | SW-A           |
| R4A      | 5KΩ        | ±     | PT-1480          | D11-114      | M-19-          |
| R4B      | Shaft      |       | Not Req.         | A            | Not R          |
| R5       | 2.5 Meg.   | ±     | PT-1481          |              |                |
| R6       | 20Ω        | 2     | PT-1482          | W20x10       | P-10-          |
| R7       | 30Ω        | 2     | PT-1483          | W-30         | 58-30          |
| R8       | 2250Ω      | 3     | PT-1484          | W-3000       | 58-30          |

| ITEM No. | RATING     |       | REPLACEMENT DATA |              |
|----------|------------|-------|------------------|--------------|
|          | RESISTANCE | WATTS | OLYMPIC PART No. | IRC PART No. |
| R9       | 150Ω       | ±     |                  |              |
| R10      | 150Ω       | ±     |                  |              |
| R11      | 1000Ω      | ±     |                  |              |
| R12      | 10KΩ       | ±     |                  | BTS-1000     |
| R13      | 1000Ω      | ±     |                  | BTS-1000     |
| R14      | 1000Ω      | ±     |                  | BTS-1000     |
| R15      | 500Ω       | ±     |                  | BTS-5000-5K  |
| R16      | 1 Meg.     | ±     |                  | BTS-1 Meg    |
| R17      | 1000Ω      | ±     |                  | BTS-1000     |
| R18      | 1000Ω      | ±     |                  | BTS-1000     |
| R19      | 100KΩ      | ±     |                  |              |
| R20      | 100KΩ      | ±     |                  |              |
| R21      | 47Ω        | ±     |                  |              |
| R22      | 1000Ω      | ±     |                  |              |
| R23      | 6.8 Meg.   | ±     | REB102K          | BTS-1000     |
| R24      | 82KΩ       | ±     | REB685K          | BTS-6.8 Meg  |
| R25      | 10KΩ       | ±     | REB22K           | BTS-82K      |
| R26      | 10K        | ±     | REB103J          |              |
| R27      | 39Ω        | ±     | REB103J          |              |
| R28      | 12KΩ       | ±     | REB123K          |              |
| R29      | 100Ω       | ±     | REB102M          | BTS-1000     |
| R30      | 100Ω       | ±     | REB103J          |              |
| R31      | 10KΩ       | ±     | REB102M          | BTS-1000     |
| R32      | 39Ω        | ±     | REB390K          |              |
| R33      | 1000Ω      | ±     | REB102M          | BTS-1000     |



**DESCRIPTIONS**  
(CONT.)

| SOLAR PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|----------------|------------------|---|
| 6-002          | TM-22            | Sync. Amp. Cath. Bypass                     |
| 6-005          | TM-25            | Integrator Net.                             |
| 6-005          | TM-25            | Integrator Net.                             |
|                |                  | Vert. Osc. Grid Cap. p 5% Cer               |
| 4-25           | TC-2             | Vert. Coupling                              |
| 1-10-1         | FX-11            | Vert. Discharge                             |
|                |                  | Sync. Coupling + 10%                        |
|                |                  | Fixed Trimmer + 10%                         |
| 6-002          | TM-22            | Differentiator Net.                         |
| 4-25           | TM-2             | AFC Filter                                  |
| 4-02           | TM-12            | AFC Filter                                  |
|                |                  | Hor. Osc. Grid Cap + 5%                     |
|                |                  | AFC Plate Bypass + 5%                       |
| 4-05           | TM-15            | Hor. Coupling + 10%                         |
|                |                  | Fixed Trimmer + 10%                         |
| 4-25           | TC-2             | Hor. Output Cath. Byp.                      |
| 4-05           | TM-15            | Hor. Output Screen ydp.                     |
|                |                  | Damper Filter                               |
| 1-10-1         | FX-11            | Damper Filter                               |
|                |                  | HV Filter                                   |
|                |                  | AFC Feedback                                |
| 6-01           | TM-11            | Line Filter                                 |
| 6-01           | TM-11            | Line Filter                                 |
|                |                  | RF Coupling                                 |
|                |                  | RF Coupling                                 |
|                |                  | Fixed Trimmer                               |
|                |                  | Fixed Trimmer                               |
|                |                  | Fixed Trimmer                               |
|                |                  | Bias Filter                                 |
|                |                  | Neutralizing                                |
|                |                  | Neutralizing                                |
|                |                  | RF Decoupling                               |
|                |                  | RF Coupling                                 |
|                |                  | RF Coupling                                 |
|                |                  | RF Coupling                                 |
|                |                  | Fixed Trimmer                               |
|                |                  | Osc. Decoupling                             |
|                |                  | Fixed Trimmer                               |
|                |                  | Osc. Feedback                               |
|                |                  | Osc. Feedback                               |
|                |                  | Mixer Decoupling                            |
|                |                  | IF Coupling                                 |
|                |                  | Fill. Bypass                                |
|                |                  | Fixed Trimmer                               |
|                |                  | Fixed Trimmer                               |
|                |                  | RF 11. Bypass                               |
|                |                  | RF Decoupling                               |
|                |                  | RF Coupling                                 |
|                |                  | RF Coupling                                 |
|                |                  | Conv. Fil. Bypass                           |
|                |                  | Osc. Feedback                               |
|                |                  | Osc. Grid Cap                               |
|                |                  | RF Bypass                                   |

ole under HFRS part No. CL-1472  
rt No. CL-1633.  
rt No. CL-1428.  
part No. CL-1677.

| INSTALLATION NOTES             |           |
|--------------------------------|-----------|
| hold control                   | Dual Con. |
| hold control                   | Dual Con. |
| ness control                   | Dual Con. |
| ist control                    | Dual Con. |
| control                        |           |
| to R3A Per Instructions        |           |
| to R3A Per Instructions        |           |
| Linearity control              |           |
| to R4A Per Instructions        |           |
| control                        |           |
| centering control tapped @ 10% |           |
| centering control.             |           |
| control                        |           |

| IDENTIFICATION CODES                     |     |
|--|-----|
| CODES ARE 10% UNLESS OTHERWISE SPECIFIED |     |
| RF Grid                                  |     |
| RF Grid                                  |     |
| Bias Network                             | 20% |
| RF Coil Shunt                            |     |
| RF Plate                                 | 20% |
| RF Plate                                 | 20% |
| Mixer Coil Shunt                         | 5%  |
| Mixer Grid                               | 20% |
| Osc. Plate                               | 20% |
| Osc. Grid                                | 20% |
| Osc. Grid                                |     |
| Osc. Cathode                             |     |
| Bias Voltage Divider                     |     |
| Bias Voltage Divider                     |     |
| Bias Voltage Divider                     |     |
| Bias Voltage Divider                     | 5%  |
| 1st Video IF Grid                        | 5%  |
| 1st Video IF Cathode                     |     |
| Bias Voltage Divider                     |     |
| 1st Video IF Decoupling                  | 20% |
| 2nd Video IF Grid                        | 5%  |
| Bias Network                             | 20% |
| 2nd Video IF Cathode                     |     |
| 2nd Video IF Decoupling                  |     |

**RESISTORS (CONT.)**

| ITEM No. | RATING     |       | REPLACEMENT DATA |              | IDENTIFICATION CODES |                             |     |
|----------|------------|-------|------------------|--------------|----------------------|-----------------------------|-----|
|          | RESISTANCE | WATTS | OLYMPIC PART No. | IRC PART No. |                      |                             |     |
| R34      | 4700Ω      | 1/2   | REB472J          |              | Y1.-V1.-Red          | 3rd Video IF Grid           | 5%  |
| R35      | 1000Ω      | 1/2   | REB102M          | BTS-1000     | Br.-Blk.-Red         | Bias Network                |     |
| R36      | 39Ω        | 1/2   | REB390K          |              | Or.-White-Blk.       | 3rd Video IF Plate          |     |
| R37      | 2700Ω      | 1/2   | REB272J          |              | Br.-Blk.-Red         | " " " Cathode               | 5%  |
| R38      | 1000Ω      | 1/2   | REB102M          | BTS-1000     | Br.-Blk.-Red         | " " " Decoupling            | 20% |
| R39      | 150Ω       | 1/2   | REB151K          |              | Br.-Grn.-Br.         | 4th Video IF Cathode        |     |
| R40      | 5600Ω      | 1/2   | REB562J          |              | Grn.-Blue-Red        | " " " Plate                 | 5%  |
| R41      | 1000Ω      | 1/2   | REB102M          | BTS-1000     | Br.-Blk.-Red         | " " " Decoupling            | 20% |
| R42      | 3900Ω      | 1/2   | REB392J          | BTS-3900-5%  | Or.-White-Red        | Video Det. Load             | 5%  |
| R43      | 10KΩ       | 1/2   | REB103K          | BTS-10K      | Br.-Blk.-Or.         | Video Det. Load             |     |
| R44      | 1Meg.      | 1/2   | REB105M          | BTS-1 Meg    | Br.-Blk.-Grn.        | 1st Video Amp. Grid         | 20% |
| R45      | 1Meg.      | 1/2   | REB105M          | BTS-1 Meg    | Br.-Blk.-Grn.        | 2nd " " " Grid              | 20% |
| R46      | 2200Ω      | 1/2   | REB222K          | BTS-2200     | Red-Red-Red          | 1st Video Amp. Plate        |     |
| R47      | 3300Ω      | 1/2   | REC332K          | BTA-3300     | Or.-Or.-Red          | 2nd Video Amp. Plate        |     |
| R48      | 1000Ω      | 1/2   | REB102K          | BTS-1000     | Br.-Blk.-Red         | 2nd Video Amp. Plate        |     |
| R49      | 100KΩ      | 1/2   | REB104M          | BTS-100K     | Br.-Blk.-Y1.         | Voltage Divider             |     |
| R50      | 82Ω        | 1/2   | REB820K          |              | Gray-Red-Blk.        | 1st Sound IF Decoupling     |     |
| R51      | 1200Ω      | 1/2   | REB122K          | BTS-1200     | Br.-Red-Red          | 1st Sound IF Decoupling     |     |
| R52      | 470KΩ      | 1/2   | REB474M          | BTS-470K     | Y1.-V1.-Y1.          | Limitter Grid               | 20% |
| R53      | 22KΩ       | 1/2   | REB223M          | BTS-22K      | Red-Red-Or.          | Limitter Screen Decoupling  | 20% |
| R54      | 1000Ω      | 1/2   | REB102M          | BTS-1000     | Br.-Blk.-Red         | Limitter Plate Decoupling   | 20% |
| R55      | 100KΩ      | 1/2   | REB104J          | BTS-100K-5%  | Br.-Blk.-Y1.         | Disc. Load                  | 5%  |
| R56      | 100KΩ      | 1/2   | REB104J          | BTS-100K-5%  | Br.-Blk.-Y1.         | Disc. Load                  | 5%  |
| R57      | 10 Meg.    | 1/2   | REB106M          | BTS-10 Meg.  | Br.-Blk.-Blue        | 1st AF Grid                 | 20% |
| R58      | 330KΩ      | 1/2   | REB334K          | BTS-330K     | Or.-Or.-Y1.          | 1st AF Plate                |     |
| R59      | 470KΩ      | 1/2   | REB474M          | BTS-470K     | Y1.-V1.-Y1.          | Output Grid                 | 20% |
| R60      | 1000Ω      | 1/2   | REC102M          | BTA-1000     | Br.-Blk.-Red         | Output Decoupling           | 20% |
| R61      | 2200Ω      | 1/2   | REB222M          | BTS-2200     | Red-Red-Red          | Voltage Divider             | 20% |
| R62      | 10KΩ       | 1/2   | REC103M          | BTA-10K      | Br.-Blk.-Or.         | Voltage Divider             | 20% |
| R63      | 47Ω        | 1/2   | REB470M          |              | Y1.-V1.-Blk.         | Video Output Cathode        |     |
| R64      | 15KΩ       | 1/2   | REC153M          | BTA-15K      | Br.-Grn.-Or.         | Sync. Amp. Plate            | 20% |
| R65      | 1 Meg.     | 1/2   | REB105M          | BTS-1 Meg.   | Br.-Blk.-Grn.        | Sync. Amp. Grid             | 20% |
| R66      | 3.9 Meg.   | 1/2   | REB395K          | BTS-3.9 Meg. | Or.-White-Grn.       | Sync. Sep. Grid             | 20% |
| R67      | 6800Ω      | 1/2   | REB682M          | BTS-6800     | Blue-Gray-Red        | Sync. Sep. Cathode          | 20% |
| R68      | 22KΩ       | 1/2   | REB223M          | BTS-22K      | Red-Red-Or.          | Integrator Network          | 20% |
| R69      | 8200Ω      | 1/2   | REB822K          | BTS-8200     | Gray-Red-Red         | " " " "                     |     |
| R70      | 6200Ω      | 1/2   | REB622K          | BTS-6200     | Gray-Red-Red         | " " " "                     |     |
| R71      | 1.5 Meg.   | 1/2   | REB155K          | BTS-1.5 Meg. | Br.-Grn.-Grn.        | Voltage Divider Network     |     |
| R72      | 6.8 Meg.   | 1/2   | REB685K          | BTS-6.8 Meg. | Blue-Gray-Grn.       | " " " "                     |     |
| R73      | 100KΩ      | 1/2   | REB104K          | BTS-100K     | Br.-Blk.-Y1.         | " " " "                     |     |
| R74      | 1 Meg.     | 1/2   | REB105J          | BTS-1Meg-5%  | Br.-Blk.-Grn.        | Vert. Osc. Grid             | 5%  |
| R75      | 560Ω       | 1/2   | REB561K          | BTS-560      | Grn.-Blue-Br.        | Vert. Output Cathode        |     |
| R76      | 2.2 Meg.   | 1/2   | REB225M          | BTS-2.2 Meg. | Red-Red-Grn.         | Vert. Output Grid           | 20% |
| R77      | 3300Ω      | 1/2   | REB332M          | BTS-3300     | Or.-Or.-Red          | Peaking                     | 20% |
| R78      | 1000Ω      | 1/2   | REB102M          | BTS-1000     | Br.-Blk.-Red         | Vert. Output Decoupling     | 20% |
| R79      | 560Ω       | 1/2   | REB561K          | BTS-560      | Grn.-Blue-Br.        | Vert. Deflection Coil Shunt |     |
| R80      | 530Ω       | 1/2   | REB531K          | BTS-530      | Grn.-Blue-Br.        | Vert. Deflection Coil Shunt |     |
| R81      | 680Ω       | 1/2   | REC681K          | BTA-680      | Blue-Gray-Br.        | Focus Coil Shunt            |     |
| R82      | 880Ω       | 1/2   | REC881K          | BTA-880      | Blue-Gray-Br.        | Focus Coil Shunt            |     |
| R83      | 680Ω       | 1/2   | REC681K          | BTA-680      | Blue-Gray-Br.        | Focus Coil Shunt            |     |
| R84      | 150KΩ      | 1/2   | REB154K          | BTS-150K     | Br.-Grn.-Y1.         | Voltage Divider             |     |
| R85      | 3.3 Meg.   | 1/2   | REB335J          | BTA-3.3Meg.  | Or.-Or.-Grn.         | Voltage Divider             | 5%  |
| R86      | 560KΩ      | 1/2   | REB564J          | BTS-560K-5%  | Grn.-Blue-Y1.        | Horiz. AFC Grid             | 5%  |
| R87      | 8200Ω      | 1/2   | REB822K          | BTS-8200     | Gray-Red-Red         | Horiz. AFC Filter           |     |
| R88      | 180KΩ      | 1/2   | REB184K          | BTS-180K     | Br.-Gray-Y1.         | Horiz. AFC Cathode          |     |
| R89      | 100KΩ      | 1/2   | REB104J          | BTA-100K-5%  | Br.-Blk.-Y1.         | Horiz. AFC Cathode          | 5%  |
| R90      | 100KΩ      | 1/2   | RE1549           |              | Horiz. Osc. Grid     |                             | 1%  |
| R91      | 10KΩ       | 1/2   | REB104K          | BTS-10K      | Br.-Blk.-Or.         | Horiz. Osc. Coil Shunt      |     |
| R92      | 33KΩ       | 1/2   | REB333M          | BTS-33K      | Or.-Or.-Or.          | Voltage Divider             | 20% |
| R93      | 120KΩ      | 1/2   | REB124K          | BTS-120K     | Br.-Red-Y1.          | Voltage Divider             |     |
| R94      | 270KΩ      | 1/2   | REC274K          | BTA-270K     | Red-V1.-Y1.          | Voltage Divider             |     |
| R95      | 120KΩ      | 1/2   | REC124K          | BTA-120K     | Br.-Red-Y1.          | Horiz. Osc. Plate           |     |
| R96      | 10KΩ       | 1/2   | REB103K          | BTS-10K      | Br.-Blk.-Or.         | Filter                      |     |
| R97      | 47Ω        | 1/2   | REB470M          |              | Y1.-V1.-Blk.         | Parasitic suppressor        | 20% |
| R98      | 1 Meg.     | 1/2   | REB105M          | BTS-1 Meg.   | Br.-Blk.-Grn.        | Horiz. Output Grid          | 20% |
| R99      | 82Ω        | 1/2   | REC820K          |              | Gray-Red-Blk.        | Horiz. Output Cathode       |     |
| R100     | 4700Ω      | 1/2   | REC472K          | BTA-4700     | Y1.-V1.-Red          | Horiz. Output Screen        |     |
| R101     | 56KΩ       | 1/2   | REB563K          | BTS-56K      | Grn.-Blue-Or.        | Filter                      |     |
| R102     | 1 Meg.     | 1/2   | REC105M          | BTA-1 Meg.   | Br.-Blk.-Grn.        | H V Filter                  |     |
| R103     | 560KΩ      | 1/2   | REB564K          | BTS-560K     | Grn.-Blue-Y1.        | Voltage Divider             |     |
| R104A    | 610Ω       | 20    | RE1505           |              | Grn.-Blue-Y1.        | Voltage Divider             |     |
| R104B    | 1125Ω      | 20    |                  |              | " " " "              |                             |     |
| R105A    | 100Ω       | 2     | RE1504           | BT-2-100     | " " " "              |                             |     |
| R105B    | 35Ω        | 1     |                  |              | " " " "              |                             |     |
| R105C    | 8200       | 1     |                  |              | " " " "              |                             |     |
| R106     | 39Ω        | 1     | REC390K          | BW-1-39      | Or.-White-Blk.       | " " " "                     |     |
| R107     | 150Ω       | 1/2   |                  |              | Br.-Grn.-Br.         | RF Grid                     |     |
| R108     | 150Ω       | 1/2   |                  |              | Br.-Grn.-Br.         | RF Grid                     |     |
| R109     | 1000Ω      | 1/2   |                  | BTS-1000     | Br.-Blk.-Red         | Bias Filter                 |     |
| R110     | 4700Ω      | 1/2   |                  |              | Y1.-V1.-Red          | RF Plate                    |     |
| R111     | 4700Ω      | 1/2   |                  |              | Y1.-V1.-Red          | RF Plate                    |     |
| R112     | 1000Ω      | 1/2   |                  | BTS-1000     | Br.-Blk.-Red         | RF Decoupling               |     |
| R113     | 1000Ω      | 1/2   |                  | BTS-1000     | Br.-Blk.-Red         | Mixer Decoupling            |     |
| R114     | 10KΩ       | 1/2   |                  |              | Br.-Blk.-Or.         | Mixer Grid Shunt            |     |
| R115     | 1 Meg.     | 1/2   |                  |              | Br.-Blk.-Grn.        | Mixer Grid                  |     |
| R116     | 150Ω       | 1/2   |                  |              | Br.-Grn.-Br.         | Decoupling                  |     |
| R117     | 4700Ω      | 1/2   |                  |              | Y1.-V1.-Red          | Osc. Plate                  |     |
| R118     | 47Ω        | 1/2   |                  |              | Y1.-V1.-Blk.         | Osc. Cathode                |     |
| R119     | 100KΩ      | 1/2   |                  |              | Br.-Blk.-Y1.         | Osc. Grid                   |     |
| R120     | 100KΩ      | 1/2   |                  |              | Br.-Blk.-Y1.         | Osc. Grid                   |     |
| R121     | 3900Ω      | 1/2   |                  |              | Or.-White-Red        | RF Grid                     | 20% |
| R122     | 47KΩ       | 1/2   |                  | BTS-47K      | Y1.-V1.-Or.          | RF Grid                     | 20% |
| R123     | 9100Ω      | 1/2   |                  |              | White-Br.-Red        | RF Coil Shunt               | 20% |
| R124     | 2200Ω      | 1/2   |                  | BTS-2200     | Red-Red-Red          | Decoupling                  | 20% |
| R125     | 10KΩ       | 1/2   |                  |              | Br.-Blk.-Or.         | Osc. Grid                   | 20% |
| R126     | 4700Ω      | 1/2   |                  |              | Y1.-V1.-Red          | Osc. Plate Load             | 20% |
| R127     | 4700Ω      | 1/2   |                  |              | Y1.-V1.-Red          | Mixer Grid                  | 20% |
| R128     | 220KΩ      | 1/2   |                  |              | Red-Red-Y1.          | Mixer Grid                  | 20% |
| R129     | 1000Ω      | 1/2   |                  | BTS-1000     | Br.-Blk.-Red         | Mixer Decoupling            | 20% |

Items R9 thru R21 and R129 used in tuner CL1633  
Items R107 thru R120 used in tuner CL1428  
Items R121 thru R128 used in tuner CL1677

OLYMPIC  
MODEL TV-922

# PARTS LIST AND DESCRIPTIONS (Continued)

## TRANSFORMER (POWER)

| ITEM No. | RATING            |                        |              |              | REPLACEMENT DATA |                  |                     |                |
|----------|-------------------|------------------------|--------------|--------------|------------------|------------------|---------------------|----------------|
|          |                   |                        |              |              | OLYMPIC PART No. | STANCOR PART No. | THORDARSON PART No. | MERIT PART No. |
|          | PRI.              | SEC. 1                 | SEC. 2       | SEC. 3       |                  |                  |                     |                |
| T1       | 117VAC<br>@ 1.94A | 720VAC<br>CT<br>250VDC | 5VAC @<br>3A | 5VAC @<br>2A | TR-1474          | P-8153           |                     | P-3059†        |

† Drill new mounting holes.

## TRANSFORMER (SWEEP CIRCUITS)

| ITEM No. | RATING                |   | REPLACEMENT DATA |                  |                     |                | NOTES                          |
|----------|-----------------------|---|------------------|------------------|---------------------|----------------|--------------------------------|
|          |                       |   | OLYMPIC PART No. | STANCOR PART No. | THORDARSON PART No. | MERIT PART No. |                                |
|          | PRI.                  | SEC.                                      |                  |                  |                     |                |                                |
| T2       | 110Ω<br>TAP @<br>30Ω  |   | TR-1475          |                  |                     |                | Hor. Osc. Trans.               |
| T3       | 160Ω                  | 850Ω                                      | TR-1473          | A-8111           | TV-24A88            | A-3000         | Vert. blocking Osc. Trans.     |
| T4       | 300Ω<br>TAP @<br>130Ω | Sec. 1<br>0Ω<br>Sec. 2<br>7.5TAP<br>@ .5Ω | TR-1492          |                  |                     |                | Hor. output and HF Osc. Trans. |
| T5       | 530Ω                  | 5.5Ω                                      | TR-1343          | A-8115           | TV-24S86            | A-3035         | Vert. Output Trans.            |
| T6A      | 12Ω                   |   | CL-1356          | DY-1             |                     |                | Hor. Deflection Yoke           |
| T6B      | 5Ω                    |   |                  |                  |                     |                | Vert. Deflection Yoke          |
| T7       | 350Ω                  |   | CL-1543          | FC-10            |                     |                | Focus coil                     |

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING        |      |         |      | REPLACEMENT DATA |                  |                     |                | INSTALLATION NOTES |
|----------|---------------|------|---------|------|------------------|------------------|---------------------|----------------|--------------------|
|          | DC RESISTANCE |      | DC RES. |      | OLYMPIC PART No. | STANCOR PART No. | THORDARSON PART No. | MERIT PART No. |                    |
|          | PRI.          | SEC. | PRI.    | SEC. |                  |                  |                     |                |                    |
| T8       | 6200Ω         | 3.7Ω | 275Ω    | .36Ω | TR-1506          | A-3878           | T22S47              | A-2931         |                    |

## SPEAKER

| ITEM No. | RATING               |                     | REPLACEMENT DATA |                 |               | NOTES |
|----------|----------------------|---------------------|------------------|-----------------|---------------|-------|
|          | FIELD RES.           | V. C. IMP.          | OLYMPIC PART No. | JENSEN PART No. | QUAM PART No. |       |
|          |                      |                     |                  |                 |               |       |
| SP1      | PM                   | 3.7Ω                | SK-1521          |                 | 46A1          |       |
| SP2      | CONE DIA.<br>4" x 6" | V. C. DIA.<br>9/16" |                  |                 |               |       |

## FILTER CHOKE

| ITEM No. | RATINGS              |                  |                                | REPLACEMENT DATA |                  |                     |                | INSTALLATION NOTES             |
|----------|----------------------|------------------|--------------------------------|------------------|------------------|---------------------|----------------|--------------------------------|
|          | TOTAL DIRECT CURRENT | D. C. RESISTANCE | INDUCTANCE (10 CURRENT 1000 ~) | OLYMPIC PART No. | STANCOR PART No. | THORDARSON PART No. | MERIT PART No. |                                |
| L1       | .250A                | 62Ω              | 2.6H                           | CK-1346          | C-2325           |                     | C-2991§        | § Drill one new mounting hole. |

## COILS (RF-IF)

| ITEM No. | USE                     | DC RES. |      | REPLACEMENT DATA |                   | NOTES                  |
|----------|-------------------------|---------|------|------------------|-------------------|------------------------|
|          |                         | PRI.    | SEC. | OLYMPIC PART No. | MEISSNER PART No. |                        |
|          |                         |         |      |                  |                   |                        |
| L2       | Ant. Input Coil.        | .2ΩCT   |      |                  |                   | Used on tuner #CL-1633 |
| L3       | Interference trap coil. | 0Ω      |      |                  |                   | Used on tuner #CL-1633 |
| L4       | Interference trap coil. | 0Ω      |      |                  |                   | Used on tuner #CL-1633 |
| L5       | RF Coil-LF              | 0Ω      |      |                  |                   | " " " "                |
| L6       | RF Coil-HF              | 0Ω      |      |                  |                   | " " " "                |
| L7       | Mixer-LF                | 0Ω      |      |                  |                   | " " " "                |
| L8       | Mixer-HF                | 0Ω      |      |                  |                   | " " " "                |
| L9       | Osc. Coil LF            | 0Ω      |      |                  |                   | " " " "                |
| L10      | Osc. Coil HF            | 0Ω      |      |                  |                   | " " " "                |
| L11      | 1st IF Coil             | 0Ω      |      |                  |                   | " " " "                |
| L12      | 1st Video IF            | .3Ω     |      | CL-1471          |                   |                        |
| L13      | 2nd Video IF            | .3Ω     |      | CL-1471          |                   |                        |
| L14      | 3rd Video IF            | .3Ω     |      | CL-1471          |                   |                        |
| L15      | Sound IF trap           | .1Ω     | .1Ω  | CL-1472          |                   |                        |
| L16      | 4th Video IF            | .3Ω     |      | CL-1471          |                   |                        |
| L17      | Peaking Coil            | 2.5Ω    |      | CL-1535          |                   | 36 Microhenrys         |



# PARTS LIST AND DESCRIPTIONS (Continued)

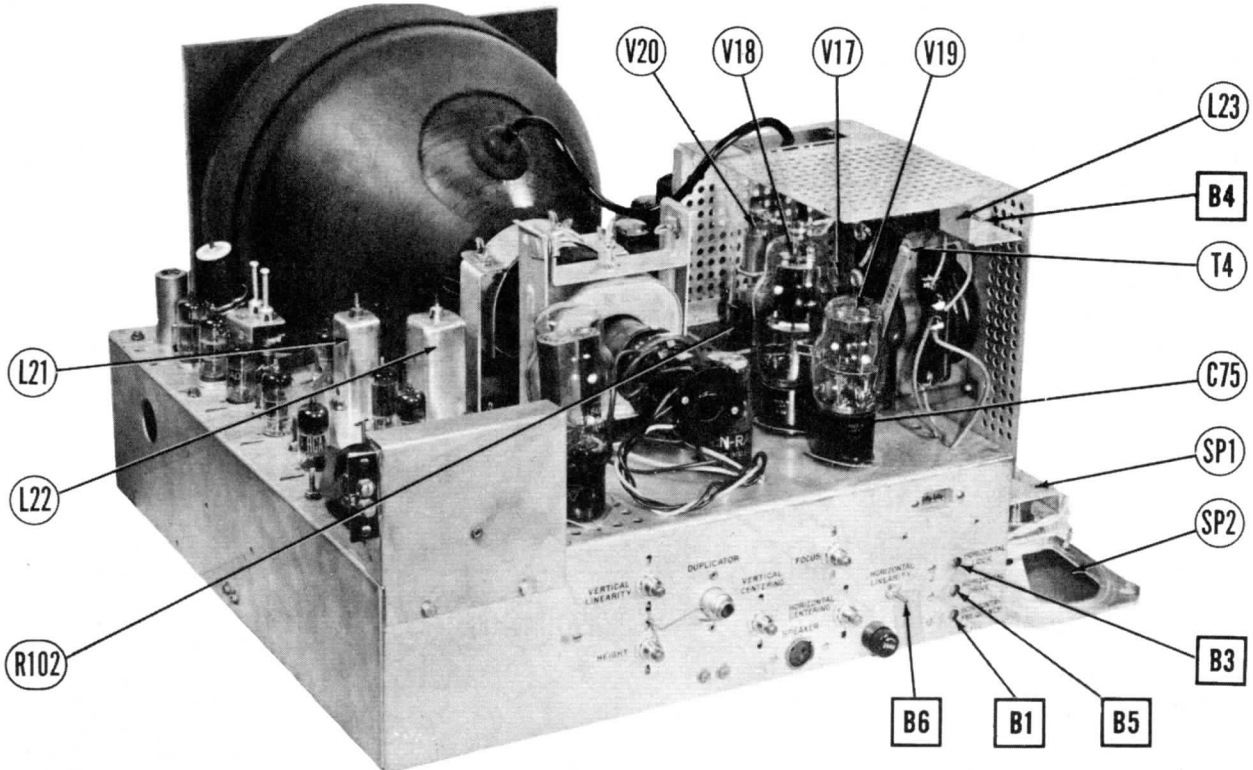
COILS (CONT.)

| ITEM No. | USE                     | DC RES. |      | REPLACEMENT DATA |          | NOTES                                    |
|----------|-------------------------|---------|------|------------------|----------|--|
|          |                         | PRI.    | SEC. | OLYMPIC          | MEISSNER |  |
|          |                         |         |      | PART No.         | PART No. |  |
| L18      | Peaking Coil            | 6Ω      |      | CL-1537          |          | 180 Microhenrys, wound on 39KΩ resistor. |
| L19      | Peaking Coil            | 6Ω      |      | CL-1537          |          | " " " " " "                              |
| L20      | Peaking Coil            | 5Ω      |      | CL-1536          |          | 120 Microhenrys, wound on 22KΩ resistor. |
| L21      | 1st sound IF            | .2Ω     | .2Ω  | TR-1470          |          |  |
| L22      | Sound disc. XFMR.       | .2Ω     | .2Ω  | TR-1469          |          |  |
| L23      | Width control           | .4Ω     |      | CL-1502          |          |  |
| L24      | Hor. Linearity control. | 35Ω     |      | CL-1503          |          |  |
| L25      | Interference trap coil. | 0Ω      |      |                  |          | Used on tuner #CL-1428                   |
| L26      | Interference trap coil. | 0Ω      |      |                  |          | Used on tuner #CL-1428                   |
| L27      | Ant. Input coil.        | .2ΩCT   |      |                  |          | " " " "                                  |
| L28      | IF trap coil.           | 0Ω      |      |                  |          | " " " "                                  |
| L29      | IF XFMR                 | 0Ω      | 0Ω   |                  |          | " " " "                                  |
| L30      | Fil. choke              | 0Ω      |      |                  |          | " " " "                                  |
| L31      | RF section              |         |      |                  |          | Used on tuner #CL-1677                   |
| L32      | Osc. section.           |         |      |                  |          | " " " "                                  |
| L33      | Fil. choke              | 0Ω      |      |                  |          | " " " "                                  |
| L34      | Fil. choke              | 0Ω      |      |                  |          | " " " "                                  |
| L35      | IF XFMR                 | 0Ω      | 0Ω   |                  |          | " " " "                                  |
| L36      | IF grid coil            | 0Ω      |      |                  |          | Used on tuner #CL-1677 10.9 Microhenrys  |

## MISCELLANEOUS

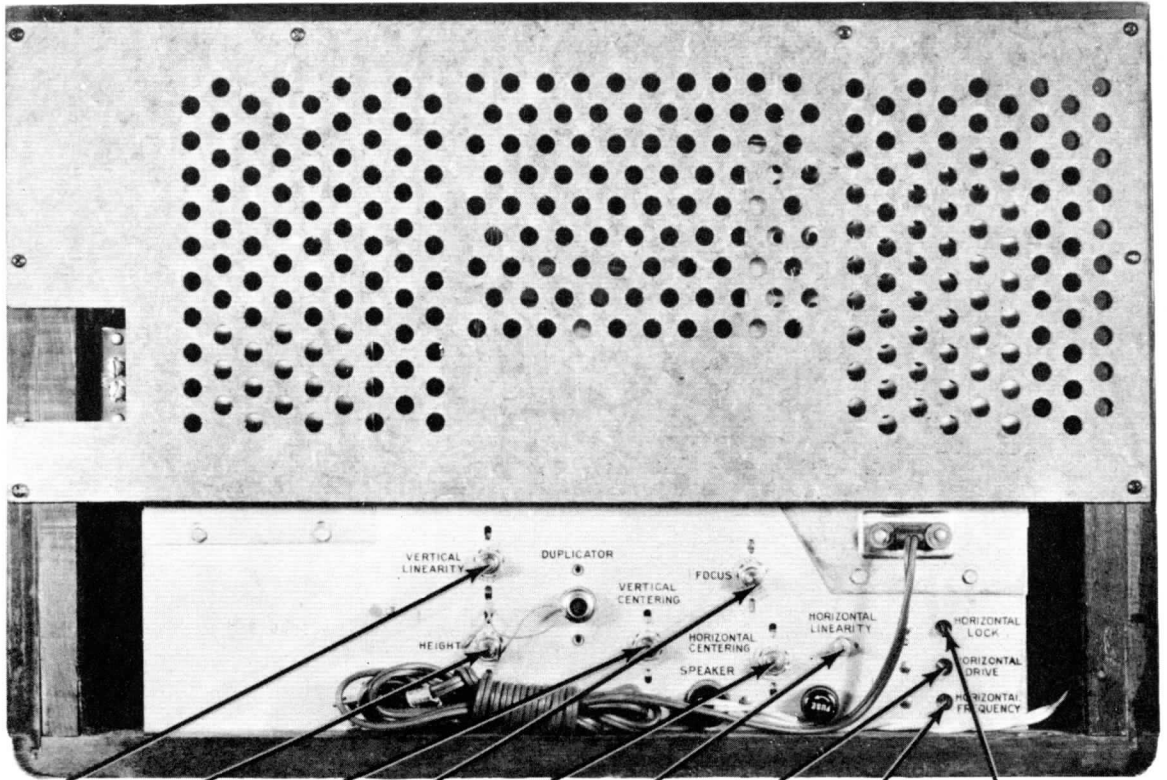
| ITEM No. | PART NAME                                | OLYMPIC PART No. | NOTES                    |
|----------|--|------------------|--------------------------|
| M1A      | Tuner Assy.                              | CL-1633          |                          |
| M1B      | Tuner Assy.                              | CL-1428          |                          |
| M1C      | Tuner Assy.                              | CL-1677          |                          |
| M2       | Fuse                                     | FU-1526          |                          |
| M3       | Ion Trap-PM 2nd Anode Connector Assembly | PP-1347          |                          |
|          | Safety Glass                             | PP-1348          |                          |
|          | Escutcheon                               | PP-1527          |                          |
|          | Plastic Dial                             | ES-1522          | Used with tuner #CL-1428 |
|          | Cabinet                                  | DL-1647          | Used with tuner #CL-1633 |
|          | Knob                                     | CA-1467          |                          |
|          | Knob                                     | KN-1516          | Outer-Mahogany           |
|          | Knob                                     | KN-1517          | Inner-Mahogany           |
|          | Knob                                     | KN-1518          | Volume-Mahogany          |
|          | Knob                                     | KN-1586          | Outer-Tan                |
|          | Knob                                     | KN-1587          | Inner-Tan                |
|          | Knob                                     | KN-1588          | Volume-Tan               |
|          | Line cord                                | LC-1523          | With inter lock socket   |

OLYMPIC  
MODEL TV-922



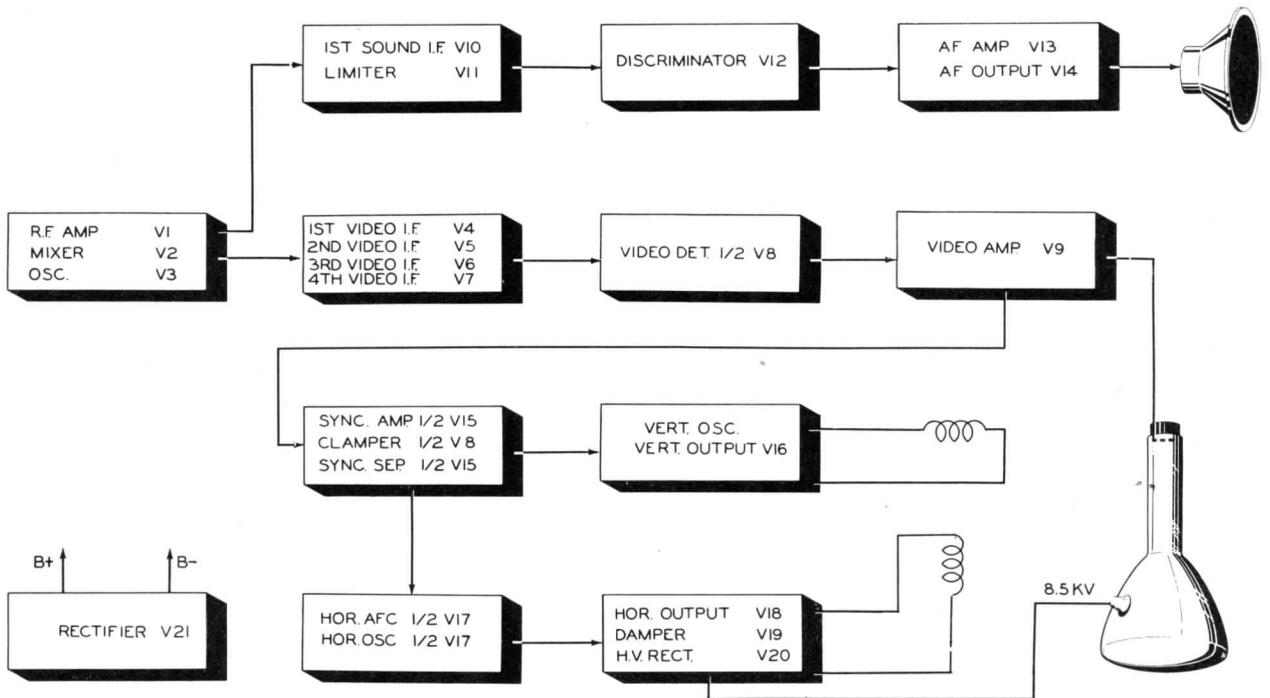
CHASSIS TOP VIEW





VERT. LINEARITY    HEIGHT    VERTICAL CONT.    FOCUS CONT.    HORIZ. CENT.    HORIZ. LIN.    HORIZ. DRIVE    HORIZ. FREQ.    HORIZ. LOCK

CABINET-REAR VIEW



BLOCK DIAGRAM

# HORIZONTAL OSC. AND LINEARITY ADJUSTMENTS

## HORIZONTAL OSCILLATOR ALIGNMENT CHECK:

Tune in test pattern and turn horizontal hold control to extreme counter-clockwise position. Picture should remain in synchronization. Turn channel switch to another channel and then back to the original channel. Normally, the picture should be out of synchronization. Turn the control clockwise and the picture should slowly begin to synchronize and finally lock-in. This should occur when the control is approximately  $90^\circ$  from the extreme counter-clockwise position. The picture should remain in synchronization for another  $90^\circ$  in the clockwise direction of the control. At the extreme clockwise position the picture should again drop out of synchronization and  $3\frac{1}{2}$  to  $4\frac{1}{2}$  bars should be seen sloping downward to the right. If the receiver fails to hold synchronization during this check with the hold control at the extreme counter-clockwise position or fails to hold synchronization for at least  $60^\circ$  in the clockwise direction from the point when it drops into "sync." it will be necessary to align the horizontal oscillator circuit as follows:

### (A) HORIZONTAL OSCILLATOR ALIGNMENT:

Turn horizontal hold control to extreme clockwise position. Tune in test pattern and adjust trimmer B1 until picture is out of sync. and shows  $3\frac{1}{2}$  to  $4\frac{1}{2}$  bars sloping downward to the right. If the trimmer has insufficient range, set it to its mid-position (one turn from tight) and adjust slug B2 until bars appear.

### (B) HORIZONTAL LOCKING ALIGNMENT:

Turn the horizontal hold control to full counter-clockwise position. Switch to another channel and back to the original again.

Slowly turn horizontal hold control clockwise and note the least number of diagonal bars present just before picture syncs. If more than  $4\frac{1}{2}$  bars are present just before picture syncs. adjust "horizontal lock" trimmer B3 slightly clockwise. If less than  $3\frac{1}{2}$  bars are present adjust B3 slightly counter-clockwise and switch channel selector to another channel and back again. Re-count bars present at the "lock-in" point. Repeat this procedure until  $3\frac{1}{2}$  to  $4\frac{1}{2}$  bars are present.

Repeat Steps (A) & (B) until conditions exist as outlined under "Horizontal Oscillator Alignment Check".

### WIDTH, DRIVE & HORIZONTAL LINEARITY ADJUSTMENTS:

Turn width control B4 to maximum clockwise position. Adjust "horizontal drive" trimmer B5 for maximum brightness and linearity for right half of the picture. Readjust width control until picture fills the mask. Turn horizontal centering to align raster with the mask.

### HEIGHT & VERTICAL LINEARITY ADJUSTMENTS:

Adjust the height control until picture fills mask vertically. Adjust the vertical linearity control until the test pattern is symmetrical from top to bottom.

Due to interaction between these two controls it is necessary to repeat the adjustments. Adjust the vertical centering control to align the picture with the mask.

## DISASSEMBLY INSTRUCTIONS

1. Remove eight push-on type control knobs.
2. Remove eight Phillips head screws holding back cover. Remove cover. Remove speaker plug from rear of chassis.
3. Remove four  $7/16$ " hex head machine bolts holding chassis. Remove chassis.
4. Remove four  $11/32$ " hex nuts holding speaker. Remove speaker.