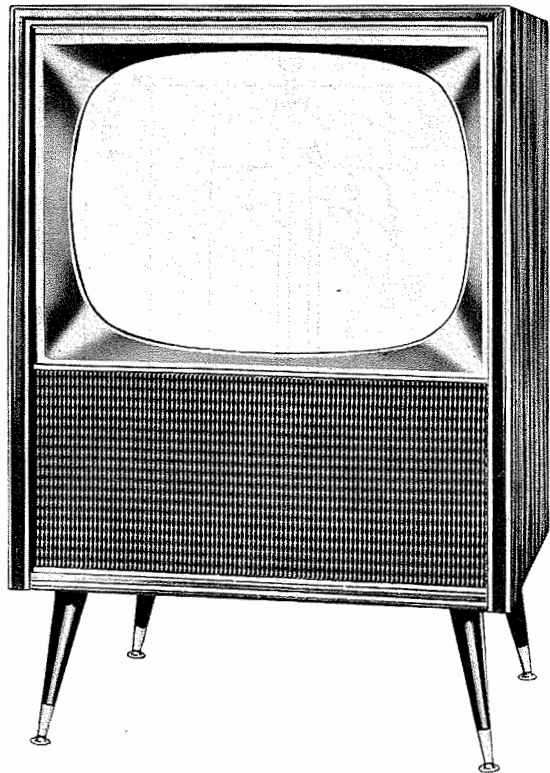




SPARTAN CHASSIS U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB, V18-01AA, BB, V18-02AA, BB, V18-03AA, BB, V18-04AA, BB (18 Series)



|              |   |  |
|--------------|---|--|
| TRADE NAME   | Spartan   | CHASSIS  |
|              |   | U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB, V18-01AA, BB, V18-02AA, BB, V18-03AA, BB, V18-04AA, BB (18 Series) |
| MANUFACTURER | Spartan Div., 2131 Bueter Road, Fort Wayne 4, Ind.  |  |
| TYPE SET     | Television Receiver   |  |
| TUBES        | Nineteen  |  |
| POWER SUPPLY | 110-120 Volts AC, 60 Cycle  | RATING 185 Watts, 1.66 Amp. @ 117 Volts AC   |
| TUNING RANGE | Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier) |  |

## SERVICING IN THE FIELD

### TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. The adjustments are accessible, one at a time, as the channel selector is rotated. Adjust for best picture and sound.

### FOCUS

The focus may be varied in steps by the position of a plug in the focus adjustment board. Readjust the ion trap for the best focus consistent with maximum brightness.

### HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For adjustment of the horizontal oscillator, it is necessary to remove the rear cover and supply power to set. Set the

horizontal hold at the center of its range and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally. (For location, see tube placement chart).

### FUSES

One fuse is used for Horizontal Sweep circuit protection. (For location, see tube placement chart).

### CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

## HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of G774R

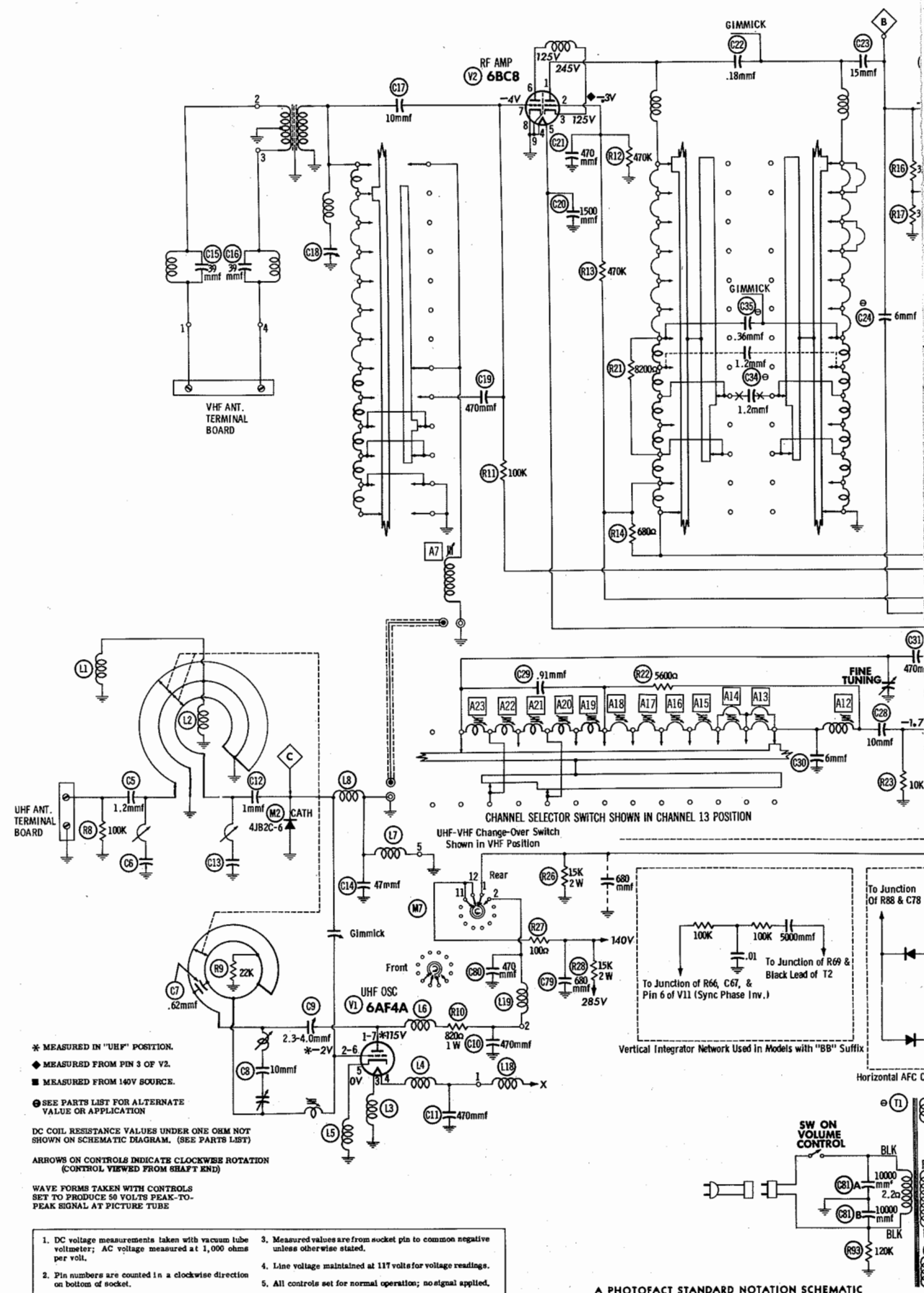
DATE 6-58

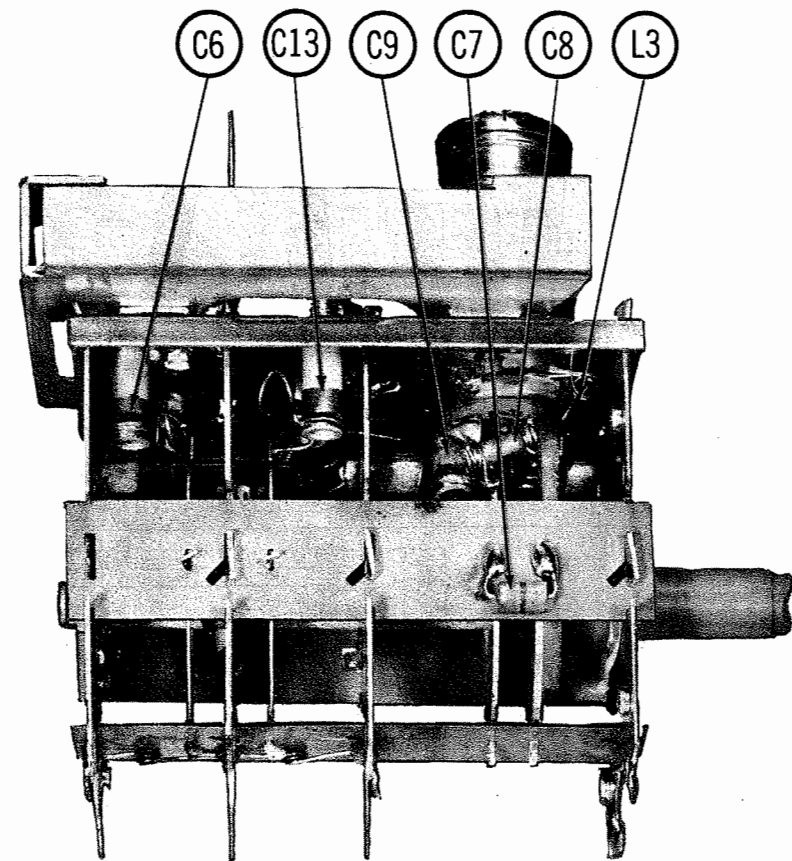
SET 401

FOLDER 3

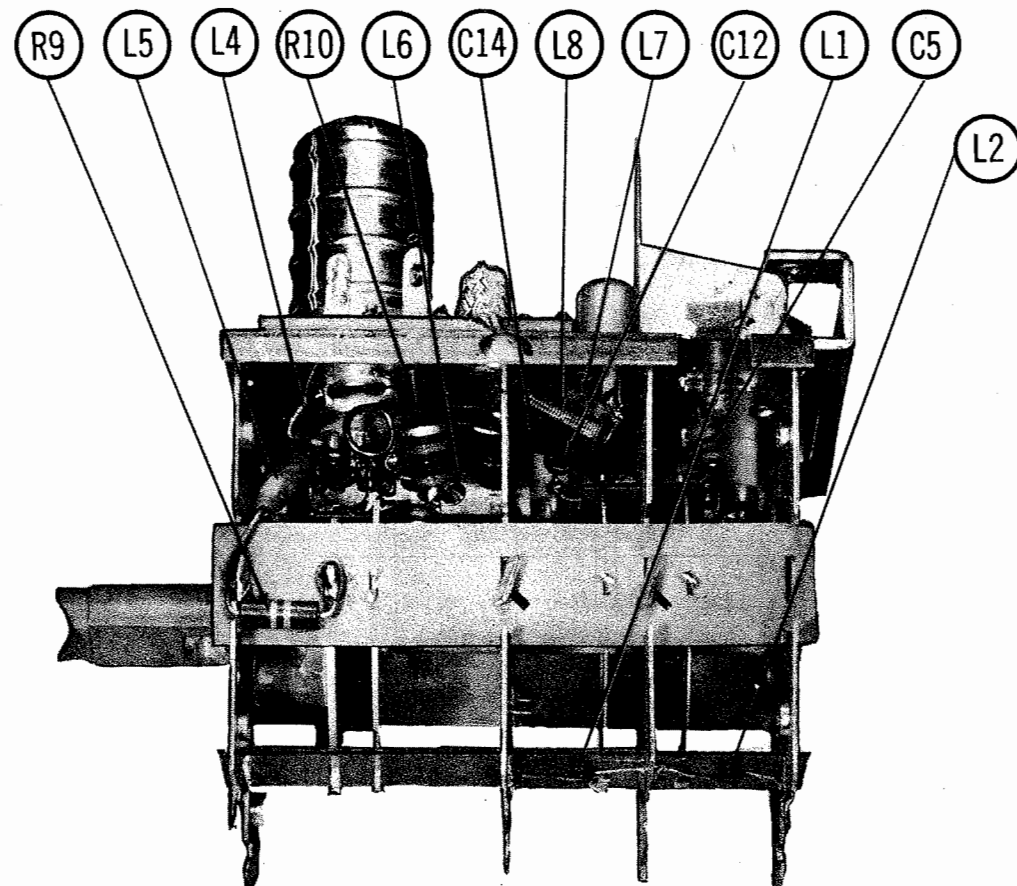
SPARTAN CHASSIS U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB, V18-01AA, BB, V18-02AA, BB, V18-03AA, BB, V18-04AA, BB (18 Series)

SET 401 FOLDER 3



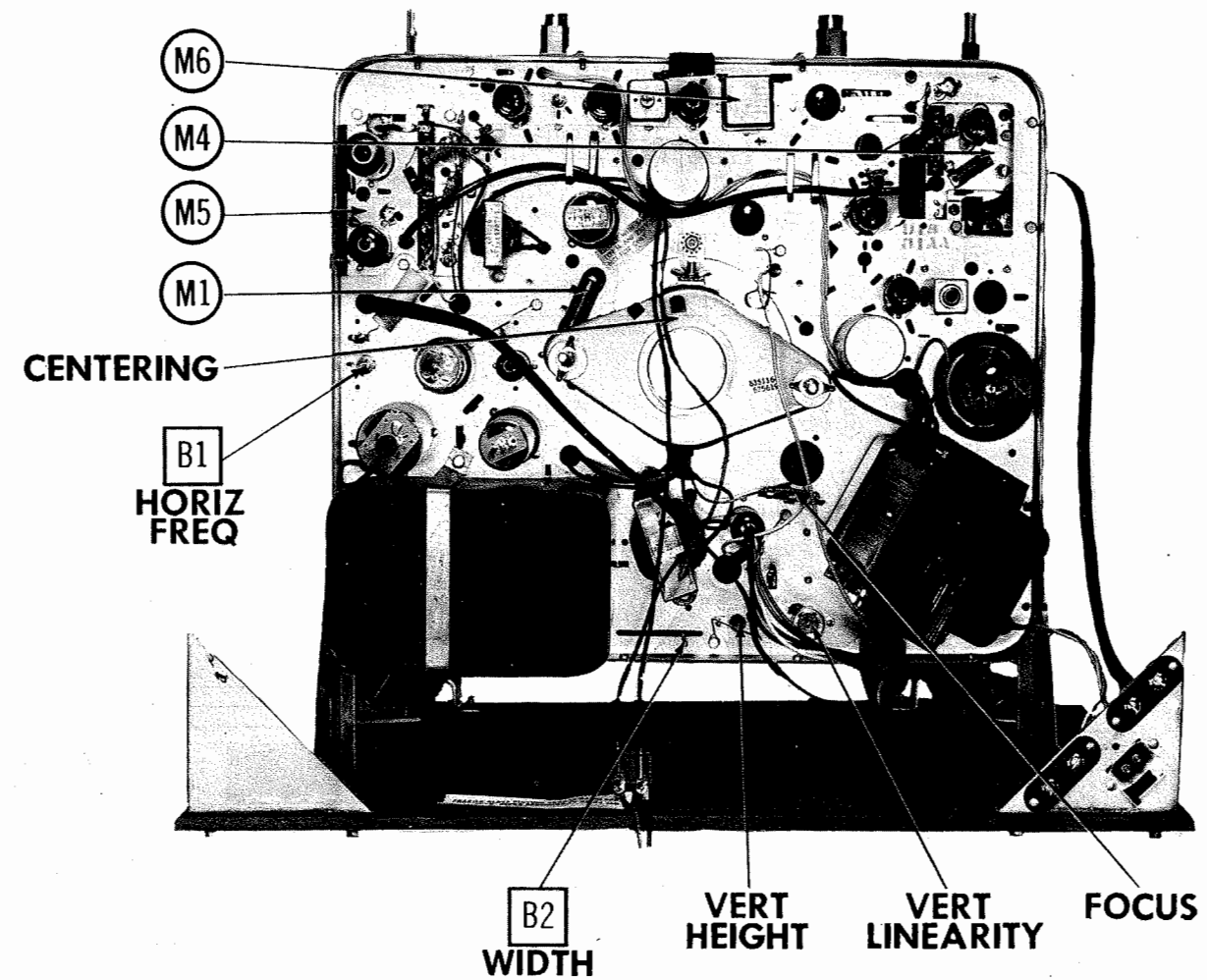


UHF TUNER-LEFT SIDE



UHF TUNER-RIGHT SIDE

FOLDER 3



CABINET-REAR VIEW

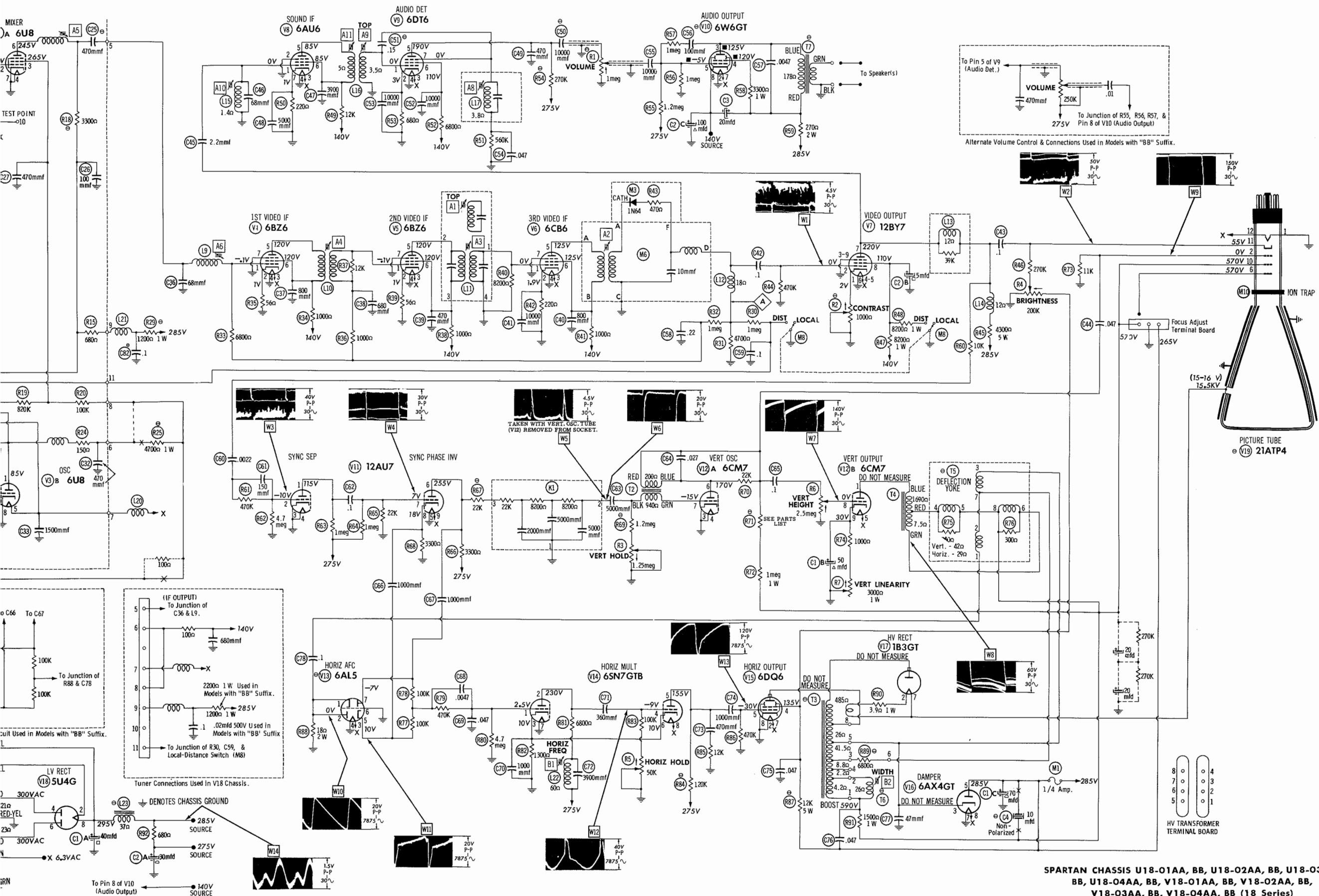
### HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

Set the horizontal hold control at the center of its range. Turn the horizontal frequency slug (B1) slowly clockwise while switching off station and back until the picture just loses sync. Turn B1 slowly counter clockwise until the picture just falls back in sync and then continue to turn counter clockwise  $\frac{1}{2}$  turn.

The picture should hold sync at both extreme ends of the horizontal hold control. If necessary, readjust B1 SLIGHTLY and test for sync pull-in as above.

Adjust the width slug (B2) for a picture SLIGHTLY wider than necessary to fill the picture mask horizontally.



SPARTAN CHASSIS U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB, V18-01AA, BB, V18-02AA, BB, V18-03AA, BB, V18-04AA, BB (18 Series)

# PARTS LIST AND DESCRIPTIONS (Continued) TRANSFORMER (HORIZ. OSC.)

| ITEM No. | DC RES. |      | REPLACEMENT DATA |                   |                |                 |  |                     | NOTES              |
|----------|---------|------|------------------|-------------------|----------------|-----------------|--|---------------------|--------------------|
|          |         |      | SPARTAN PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. |  | Ram PART No.        |                    |
|          | PRI.    | SEC. |                  |                   |                |                 |  | Thordarson PART No. |                    |
| L22      | 80Ω     |      | 380579-1         |                   |                |                 |  | HS-7                | 22-78 Millihenries |

## FILTER CHOKE

| ITEM No. | RATINGS              |                  |                                     | REPLACEMENT DATA |                     |                |                  |                     |                |
|----------|----------------------|------------------|-------------------------------------|------------------|---------------------|----------------|------------------|---------------------|----------------|
|          | TOTAL DIRECT CURRENT | D. C. RESISTANCE | INDUCTANCE (0 CURRENT 1000 $\mu$ H) | SPARTAN PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
|          |                      |                  |                                     |                  |                     |                |                  |                     |                |
| L23      | .250A                | 37Ω              | .45 HY.                             | 320058-3 ①       | C5040 ②             | C-2974 ②       | C-2326 ②         | 26C44 ②             | C-23X ②        |

- ① Alternate part #320058-2.  
② Drill one new mounting hole.

## COMPONENT COMBINATIONS

| ITEM No. | USE                 | DESCRIPTION                   | SPARTAN PART No.      | REPLACEMENT DATA   |
|----------|---------------------|-------------------------------|-----------------------|--|
| K1       | Vertical Integrator | 2000MMF<br>5000MMF<br>5000MMF | 8200Ω<br>8200Ω<br>22K | 250186-1<br>Aerovox<br>Centralab<br>Cornell-Dubilier<br>Sprague<br>PAL10<br>PCI00<br>115TMI<br>V-1 |

## FUSES

| ITEM No. | TYPE | RATING              | REPLACEMENT DATA |        |                              |        |               |        |
|----------|------|---------------------|------------------|--------|------------------------------|--------|---------------|--------|
|          |      |                     | SPARTAN PART No. |        | LITTELFUSE PART No.          |        | BUSS PART No. |        |
|          |      |                     | FUSE             | HOLDER | FUSE                         | HOLDER | FUSE          | HOLDER |
| M1       | 3AG  | 1/4A<br>250V<br>S/B | 180157-30        |        | 313.250<br>(3AG 1/4A<br>S/B) | 357001 | MDL 1/4       | 4405   |

## CRYSTAL DIODES

| ITEM No. | ORIG. TYPE | REPLACEMENT DATA |                   | NOTES                    |
|----------|------------|------------------|-------------------|--------------------------|
|          |            | SPARTAN PART No. | SYLVANIA PART No. |                          |
| M2       | 1N82A      | 530038-1         | 1N82A             | UHF Mixer (Clip in)      |
| M3       | 1N84       |                  | 1N60              | Video Detector (Pigtail) |

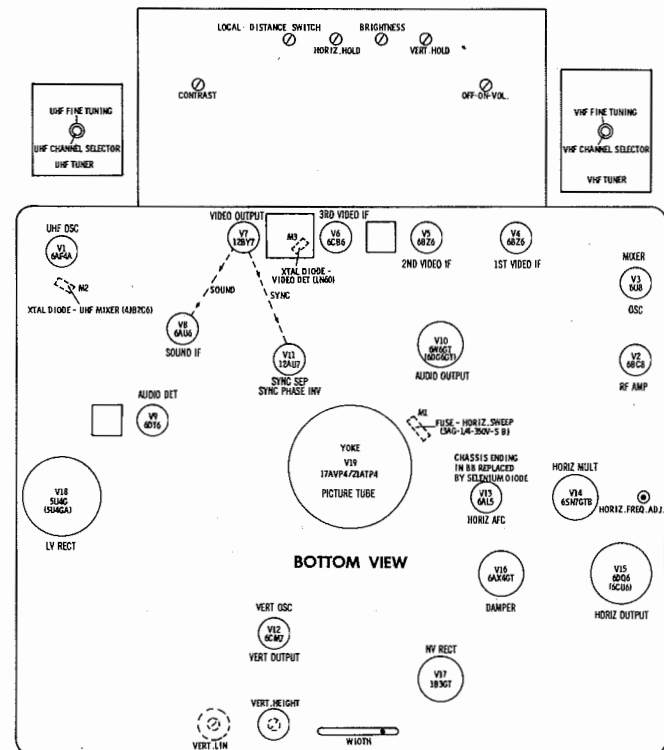
## MISCELLANEOUS

| ITEM No. | PART NAME        | SPARTAN PART No. | NOTES   |
|----------|------------------|------------------|---|
| M4       | Tuner            | 700530-2         | UHF   |
| M5       | Tuner            | 700541-2         | VHF   |
| M6       | Video Det. Assy. | 380838-1         | Includes trans., coil, 470Ω resistor, 10MMF Cap., and diode M3. |
| M7       | Switch           | 160247-1         | UHF/VHF change-over   |
| M8       | Switch           | 160283-2         | Local-distant (DPDT)  |
| M9       | Centering Device |                  |   |
| M10      | Ion Trap         | 380492-5         |   |

## RESISTANCE MEASUREMENTS

| ITEM | TUBE     | Pin 1   | Pin 2              | Pin 3          | Pin 4           | Pin 5               | Pin 6         | Pin 7    | Pin 8    | Pin 9             |
|------|----------|---------|--------------------|----------------|-----------------|---------------------|---------------|----------|----------|-------------------|
| V1   | 6AF4A    | ■ *900Ω | 22K                | 0Ω             | .1Ω             | 0Ω                  | 22K           | ■ *900Ω  |          |                   |
| V2   | 6BC8     | † 1900Ω | 220K               | 1NF            | 0Ω              | .1Ω                 | 1NF           | 1.1Meg   | 0Ω       | 0Ω                |
| V3   | 6U8      | ■ 500Ω  | 360K               | ■ 100K         | 0Ω              | .1Ω                 | † 5200Ω       | 0Ω       | 0Ω       | 10K               |
| V4   | 6BZ6     | 1Meg    | 56Ω                | .1Ω            | 0Ω              | ■ 1000Ω             | ■ 1000Ω       | 0Ω       |          |                   |
| V5   | 6BZ6     | 1Meg    | 56Ω                | .1Ω            | 0Ω              | ■ 1000Ω             | ■ 1000Ω       | 0Ω       |          |                   |
| V6   | 6CB6     | .1Ω     | 220Ω               | .1Ω            | 0Ω              | ■ 1000Ω             | ■ 1000Ω       | 0Ω       |          |                   |
| V7   | 12BY7    | ● 100Ω  | 470K               | 0Ω             | .1Ω             | .1Ω                 | 0Ω            | † 4300Ω  | ■ 8200Ω  | 0Ω                |
| V8   | 6AU6     | 1.4Ω    | 0Ω                 | .1Ω            | 0Ω              | ■ 12K               | ■ 12K         | 220Ω     |          |                   |
| V9   | 6DT6     | 3.5Ω    | 680Ω               | .1Ω            | 0Ω              | † 270K              | ■ 6800Ω       | 560K     |          |                   |
| V10  | 6W6GT    | TP      | 0Ω                 | † 480Ω         | † 3600Ω         | 550K                | NC            | .1Ω      | 70K      |                   |
| V11  | 12AU7    | † 1Meg  | 4.7Meg             | 0Ω             | 0Ω              | 0Ω                  | † 4000Ω       | 22K      | 3300Ω    | .1Ω               |
| V12  | 6CM7     | *3200Ω  | NC                 | 0Ω             | 0Ω              | .1Ω                 | † 1.8Meg      | ● 1.7Meg | ● 1.9Meg | ● 2500Ω           |
| V13  | 6AL5     | 18Ω     | 18Ω                | .1Ω            | 0Ω              | 5Meg                | 0Ω            | 5Meg     |          |                   |
| V14  | 6SN7GT   | 4.7Meg  | † 7500Ω            | 1300Ω          | 120K            | † 150K              | 1300Ω         | 0Ω       | .1Ω      |                   |
| V15  | 6DQ6     | NC      | 0Ω                 | NC             | † 12K           | 470K                | TP            | .1Ω      | 0Ω       | TOP CAP<br>† 26Ω  |
| V16  | 6AX4GT   | NC      | NC                 | 7Meg           | NC              | † 37Ω               | NC            | 0Ω       | .1Ω      |                   |
| V17  | 1B3GT    |         | PINS 1 THRU 8 HAVE |                |                 | INFINITE RESISTANCE |               |          |          | TOP CAP<br>† 511Ω |
| V18  | 5U4G     | NC      | 20K                | NC             | 21Ω             | NC                  | 23Ω           | NC       | 20K      |                   |
| V19  | PIX TUBE | 0Ω      | 11K                | PIN 6<br>1600Ω | PIN 10<br>1600Ω | PIN 11<br>● † 310K  | PIN 12<br>.1Ω |          |          |                   |

- THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.  
\* MEASURED IN UHF POSITION  
† MEASURED FROM PIN 8 OF V18.  
‡ MEASURED FROM PIN 3 OF V16.  
■ MEASURED FROM 140V SOURCE.  
TP TIE POINT  
NC NO CONNECTION



## TUBES ( GENERAL ELECTRIC, SYLVANIA )

| ITEM No. | USE                     | TYPE  | NOTES | ITEM No. | USE                         | TYPE       | NOTES  |
|----------|-------------------------|-------|-------|----------|-----------------------------|------------|--------|
| V1       | UHF Oscillator          | 6AF4A |       | V10      | Audio Output                | 6W8GT      | Note 1 |
| V2       | RF Amplifier            | 6BC8  |       | V11      | Sync Sep. - Sync Phase Inv. | 12AU7      |        |
| V3       | Mixer - Oscillator      | 6U8   |       | V12      | Vert. Osc. - Vert. Output   | 6CM7       | Note 2 |
| V4       | 1st. Video IF Amplifier | 6BZ6  |       | V13      | Horiz. AFC                  | 6AL5       |        |
| V5       | 2nd. Video IF Amplifier | 6BZ6  |       | V14      | Horiz. Mult.                | 6SN7GTB    | Note 4 |
| V6       | 3rd. Video IF Amplifier | 6BZ6  |       | V15      | Horiz. Output               | 250229-343 |        |
| V7       | Video Output            | 12BY7 |       | V16      | Damper                      | 6AX4GT     |        |
| V8       | Sound IF Amplifier      | 6AU6  |       | V17      | HV Rectifier                | 1B3GT      |        |
| V9       | Audio Detector          | 6DT6  |       | V18      | LV Rectifier                | 5U4G       | Note 3 |

Note 1. 6DG6GT used in chassis ending in BB.  
Note 2. Used only in chassis ending in AA.  
Note 3. 5U4GA may be used in some versions.  
Note 4. 6CU6 may be used in some versions.

## PICTURE TUBE

| ITEM No. | REPLACEMENT DATA                       | NOTES                                |
|----------|--|--------------------------------------|
| V19      | 21ATP4<br>17AVP4<br>17AVP4A<br>17AVP4A | ① Aluminized<br>② Silver screen "85" |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING  | REPLACEMENT DATA   | NOTES           |
|----------|---------|--------------------|-----------------|
| CL4      | 40 350  | 270021-62          | RE1008          |
| CL5      | 50 350  | 270021-55          | AFH3-114-70     |
| CL6      | 70 350  | 270027-20          | PRS450V20       |
| CL7      | 100 200 | 270027-26 (Note 1) | NP-PRS350-VNP10 |
| CL8      | 20 550  |                    |                 |
| CL9      | 10 550  |                    |                 |

Note 1. Non-polarized unit.  
Connect negative leads together.  
† Non-catalog item.

## FIXED CAPACITORS

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

| ITEM No. | RATING | REPLACEMENT DATA | NOTES |
|----------|--------|------------------|-------|
| C5       | 1.2    | 250188-10        |       |
| C6       | .62    |                  |       |
| C7       | 10     |                  |       |
| C8       | 2, 3-4 | 250220-2         |       |
| C9       | 470    | 250175-8         |       |
| C10      | 470    | 250175-8         |       |
| C11      | 1      | 250221-114       |       |
| C12      | 1      | 250188-10        |       |
| C13      | 47     | 250175-20        |       |
| C14      | 39     | 250175-20        |       |
| C15      | 39     | 250221-127       |       |
| C16      | 10     | 250188-6         |       |
| C17      | 470    | 250175-10        |       |
| C18      | 1500   | 250175-10        |       |
| C19      | 470    | 250175-8         |       |
| C20      | 18     | 250221-4         |       |
| C21      | 15     | 250207-5         |       |
| C22      | 6      | 250175-8         |       |
| C23      | 470    | 250175-24        |       |
| C24      | 100    | 250175-8         |       |
| C25      | 470    | 250088-136       |       |
| C26      | 91     | 250088-143       |       |
| C27      | 6      | 250218-15        |       |
| C28      | 470    | 250175-10        |       |
| C29      | 1500   | 250175-10        |       |
| C30      | 1500   | 250221-115       |       |
| C31      | 1.2    | 250218-5         |       |
| C32      | 36     | 250218-14        |       |
| C33      | 800    | 250218-14        |       |
| C34      | 680    | 250218-15        |       |
| C35      | 470    | 250218-14        |       |
| C36      | 800    | 250175-2         |       |
| C37      | 10000  | 250185-16        |       |
| C38      | 1      | 250202-13        |       |
| C39      | 1      | 250212-7         |       |
| C40      | 1      | 250221-118       |       |
| C41      | 2.2    | 250218-7         |       |
| C42      | 68     | 250175-31        |       |
| C43      | 3900   | 250175-1         |       |
| C44      | 5000   | 250218-6         |       |
| C45      | 470    | 250175-2         |       |
| C46      | 10000  | 250221-203       |       |
| C47      | 15     | 250218-19        |       |
| C48      | 10000  | 250218-19        |       |
| C49      | 10000  | 250221-11        |       |
| C50      | 10000  | 250175-2         |       |
| C51      | 100    | 250218-22        |       |
| C52      | 10000  | 250201-5         |       |
| C53      | 10000  | 250202-15        |       |
| C54      | 10000  | 250218-3         |       |
| C55      | 10000  | 250229-534       |       |
| C56      | 10000  | 250218-13        |       |
| C57      | 10000  | 250175-1         |       |
| C58      | 10000  | 250212-9         |       |
| C59      | 10000  | 250218-13        |       |
| C60      | 10000  | 250218-8         |       |

## PARTS LIST AND DESCRIPTIONS

### CAPACITORS (cont)

| ITEM No. | RATING    | REPLACEMENT DATA | NOTES |
|----------|-----------|------------------|-------|
| C68      | .0047 400 | 250212-4         |       |
| C69      | .047 200  | 250212-5         |       |
| C70      | 1000      | 250218-8         |       |
| C71      | 360       | 250229-343       |       |
| C72      | 3900      | 250229-468       |       |
| C73      | 470       | 250229-346       |       |
| C74      | 1000      | 250218-8         |       |
| C75      | .047 400  | 250211-11        |       |
| C76      | .047 400  | 250211-11        |       |
| C77      | 47 4000   | 250175-32        |       |
| C78      | .1 800    | 250201-13        |       |
| C79      | 680       | 250218-4         |       |
| C80      | 470       | 250218-6         |       |
| C81A     | 10000     | 250219-3         |       |
| C82      | .1 400    | 250211-13        |       |

Note 2. Some versions may use a 8.8MMF in this application (Part #230221-125).  
Note 3. Some versions may use a 27MMF in this application.  
Note 4. Not used in some versions.  
Note 5. Some versions may use a .56MMF in this application.  
Note 6. Not used in chassis ending in BB.  
Note 7. A 2000MMF used in chassis ending in BB.

## CONTROLS

| ITEM No. | RATING | REPLACEMENT DATA | INSTALLATION NOTES      |
|----------|--------|------------------|-------------------------|
| R1A      | 1Meg   | 220126-46        | Volume - Note 1         |
| R1B      | 1Meg   | 220126-50        | Contrast - Note 2       |
| R1C      | 1Meg   | 220132-3         | Vert. Hold              |
| R1D      | 1Meg   | 220132-2         | Brightness              |
| R1E      | 1Meg   | 220132-1         | Horiz. Hold             |
| R1F      | 1Meg   | 220146-2         | Vert. Height            |
| R1G      | 1Meg   | 220120-3         | Vert. Lin. - wire wound |

Note 1. An alternate 250K control part #220135-2 used in chassis ending in BB.  
Note 2. An alternate 600K control part #220126-56 used in chassis ending in BB.

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING   | REPLACEMENT DATA | NOTES |
|----------|----------|------------------|-------|
| R8       | 100K     | 230104-86        |       |
| R9       | 22K      | 230104-78        |       |
| R10      | 820K     | 230145-61        |       |
| R11      | 100K     | 230104-86        |       |
| R12      | 470K     | 230104-94        |       |
| R13      | 470K     | 230104-94        |       |
| R14      | 680K     | 230104-60        |       |
| R15      | 680K     | 230104-60        |       |
| R16      | 33K      | 230104-80        |       |
| R17      | 330K     | 230104-92        |       |
| R18      | 3300K    | 230104-68        |       |
| R19      | 820K     | 230104-97        |       |
| R20      | 100K     | 230104-66        |       |
| R21      | 8200K    | 230104-73        |       |
| R22      | 5600K    | 230104-71        |       |
| R23      | 10K      | 230104-74        |       |
| R24      | 150K     | 230104-52        |       |
| R25      | 4700K    | 230105-70        |       |
| R26      | 15K      | 230106-76        |       |
| R27      | 100K     | 230104-50        |       |
| R28      | 15K      | 230106-76        |       |
| R29      | 1200K    | 230145-63        |       |
| R30      | 1Meg     | 230104-96        |       |
| R31      | 4700K 5% | 230094-175       |       |
| R32      | 1Meg     | 230104-96        |       |
| R33      | 6800K 5% | 230094-179       |       |
| R34      | 1000K    | 230104-62        |       |
| R35      | 56K      | 230104-47        |       |
| R36      | 1000K    | 230104-62        |       |
| R37      | 12K 5%   | 230094-185       |       |
| R38      | 1000K    | 230104-62        |       |
| R39      | 56K      | 230104-47        |       |
| R40      | 8200K 5% | 230094-181       |       |
| R41      | 1000K    | 230104-62        |       |
| R42      | 220K     | 230104-54        |       |
| R43      | 470K     | 230104-94        |       |
| R44      | 470K     | 230104-94        |       |
| R45      | 4300K    | 240073-1         |       |
| R46      | 270K     | 230104-91        |       |
| R47      | 8200K    | 230105-73        |       |
| R48      | 8200K    | 230105-73        |       |
| R49      | 12K      | 230104-75        |       |
| R50      | 220K     | 230104-54        |       |
| R51      | 560K     | 230104-95        |       |

Note 1. A 10K may be used in some versions.  
Note 2. Not used in some versions.  
Note 3. A 2200K, 2W used in BB chassis (Part #230106-66).  
Note 4. Not used in BB chassis.  
Note 5. A 100K used in BB chassis (part #230104-96).  
Note 6. A 1.8Meg used in BB chassis (part #230104-10).  
Note 7. Negative temperature coefficient resistor. Approximately 800K cold.  
Note 8. A 150K used in some versions (Part #230094-211).  
Note 9. A 8500K, 5W used in BB chassis (Part #270071-25).  
Note 10. A 2700K used in BB chassis (Part #230104-67).

## TRANSFORMER (POWER)

| ITEM No. | RATING            | REPLACEMENT DATA                                  | NOTES                    |
|----------|-------------------|---|--------------------------|
| T1       | 117VAC<br>① 1.66A | 575VCT<br>② .250A<br>5V<br>③ 3A<br>6.3V<br>④ 9.5A | 300077-1 ①<br>300093-1 ② |

① Used in Chassis ending in AA.  
② Used in Chassis ending in BB.  
③ Fabricate mounting.  
④ Use original mounting bracket.  
⑤ Parallel and phase 6.3V filament windings.  
⑥ Parallel and phase 6.3V @ 5A windings.  
⑦ Tape low high voltage winding, Tape 5V @ 3A winding.  
⑧ Tape 6.3V @ 1.2A winding.

## TRANSFORMERS (SWEEP CIRCUITS)

| ITEM No. | USE                      | REPLACEMENT DATA       | NOTES |
|----------|--------------------------|------------------------|-------|
| T2       | Vert. Osc. Trans.        | 320262-1<br>300623-1 ① |       |
| T3       | Horiz. Output Trans.     | 320263-1               |       |
| T4       | Vert. Output Trans.      | 320263-1               |       |
| T5A      | Yoke (90°) Horiz. (21MH) | 360617-1<br>360619-1 ⑤ |       |
| T6       | Vert. (45MH) Width Coil  | 360652-1 ⑦             |       |

① Chassis ending in BB use Magnavox part #360700-1.  
② Cut and tape blanking lead.  
③ Drill new mounting hole(s).  
④ Connect as auto transformer.  
⑤ Yoke rear cover.  
⑥ Use original yoke damping network.  
⑦ Chassis ending with BB use Magnavox part #360699-1.  
⑧ Use terminals #1 and #2.  
⑨ Use black and white terminals.  
⑩ Use terminals C and E.  
⑪ Use plain terminals.  
⑫ Use original mounting bracket.  
⑬ Use coil (L1).  
⑭ Use red and blue terminals.  
This part may be superseded by Parts Manufacturer's introduction of special unit for this application.

## \* HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

| ORIGINAL TERMINAL CONNECTIONS | Halldorson Replacement Connections | Merit Replacement Connections | Ram Replacement Connections | Stancor Replacement Connections | Thordarson Replacement Connections | Triad Replacement Connections |
|-------------------------------|------------------------------------|-------------------------------|-----------------------------|---------------------------------|------------------------------------|-------------------------------|
| 8                             |                                    |                               |                             | 8                               | 8                                  |                               |
| 5                             |                                    |                               |                             | 5                               | 6                                  |                               |
| 3                             |                                    |                               |                             | 3                               | 3                                  |                               |
| 4                             |                                    |                               |                             | 4                               | 2                                  |                               |
| 2                             |                                    |                               |                             | 2                               | 2                                  |                               |
| 1                             |                                    |                               |                             | 1                               | 1                                  |                               |
| Connect Width Coil Across     | 1 & 2                              |                               |                             | 1 & 2                           | 1 & 2                              |                               |
| Special Notes                 |                                    |                               |                             |                                 | ⑮                                  |                               |

⑮ If insufficient width, add capacity (approx. 50-100MMF @ 4KV) across horizontal yoke.

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE  | REPLACEMENT DATA         | NOTES |
|----------|------------|--------------------------|-------|
| T7       | 2000K 3-4K | 320251-1 ①<br>320251-2 ② |       |

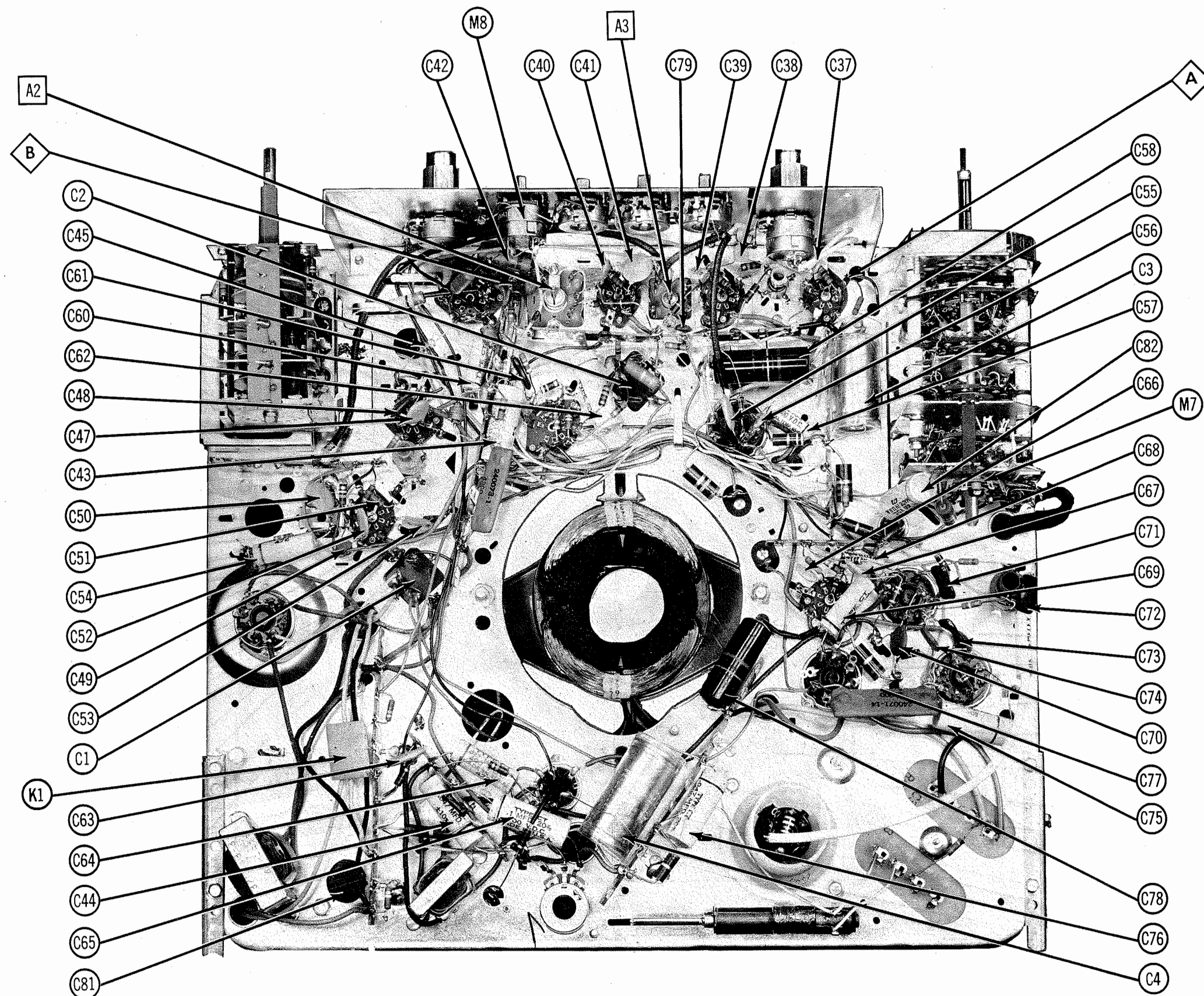
① Used in chassis ending in AA.  
② Used in chassis ending in BB.  
③ Drill one new mounting hole.

## COILS (RF-IF)

| ITEM No. | USE                 | REPLACEMENT DATA | NOTES |
|----------|---------------------|------------------|-------|
| L1       | RF Choke            | 360574-30        |       |
| L2       | RF Choke            | 360574-30        |       |
| L3       | IF Choke            | 360574-50        |       |
| L4       | IF Choke            | 360574-50        |       |
| L5       | Cath. Choke         | 360522-7         |       |
| L6       | RF Choke            | 360574-8         |       |
| L7       | UHF IF Output       | 360574-50        |       |
| L8       | UHF IF Output       | 360574-12        |       |
| L9       | 1st. Video IF       | 360840-1         |       |
| L10      | 2nd. Video IF       | 360836-1         |       |
| L11      | 3rd. Video IF       | 360837-1         |       |
| L12      | Shunt Peaking Coil  | 360622-10        |       |
| L13      | Series Peaking Coil | 360622-15        |       |
| L14      | Shunt Peaking Coil  | 360622-16        |       |
| L15      | 1st. Sound IF       | 360857-1         |       |
| L16      | 2nd. Sound IF       | 360850-1         |       |
| L17      | Quadrature Coil     | 360851-1         |       |
| L18      | IF Choke            | 360601-3         |       |
| L19      | RF Choke            | 360574-8         |       |
| L20      | IF Choke            | 360801-1         |       |
| L21      | RF Choke            | 360801-1         |       |

\* Parallel with 39K resistor.

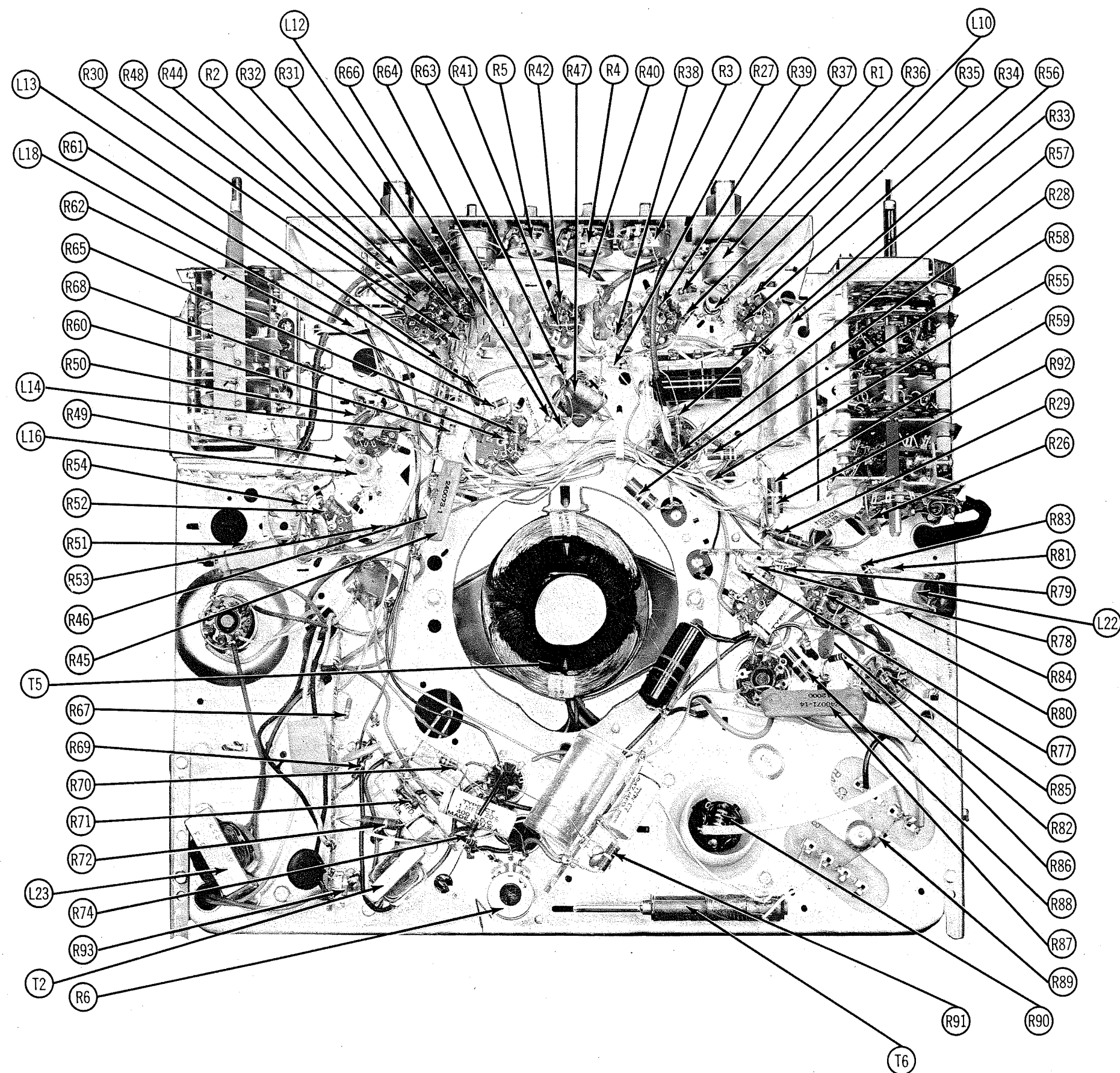
SPARTAN CHASSIS U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB, U18-05AA, BB, U18-06AA, BB, U18-07AA, BB, U18-08AA, BB, U18-09AA, BB, U18-10AA, BB, U18-11AA, BB, U18-12AA, BB, U18-13AA, BB, U18-14AA, BB, U18-15AA, BB, U18-16AA, BB, U18-17AA, BB, U18-18AA, BB, U18-19AA, BB, U18-20AA, BB, U18-21AA, BB, U18-22AA, BB, U18-23AA, BB, U18-24AA, BB, U18-25AA, BB, U18-26AA, BB, U18-27AA, BB, U18-28AA, BB, U18-29AA, BB, U18-30AA, BB, U18-31AA, BB, U18-32AA, BB, U18-33AA, BB, U18-34AA, BB, U18-35AA, BB, U18-36AA, BB, U18-37AA, BB, U18-38AA, BB, U18-39AA, BB, U18-40AA, BB, U18-41AA, BB, U18-42AA, BB, U18-43AA, BB, U18-44AA, BB, U18-45AA, BB, U18-46AA, BB, U18-47AA, BB, U18-48AA, BB, U18-49AA, BB, U18-50AA, BB, U18-51AA, BB, U18-52AA, BB, U18-53AA, BB, U18-54AA, BB, U18-55AA, BB, U18-56AA, BB, U18-57AA, BB, U18-58AA, BB, U18-59AA, BB, U18-60AA, BB, U18-61AA, BB, U18-62AA, BB, U18-63AA, BB, U18-64AA, BB, U18-65AA, BB, U18-66AA, BB, U18-67AA, BB, U18-68AA, BB, U18-69AA, BB, U18-70AA, BB, U18-71AA, BB, U18-72AA, BB, U18-73AA, BB, U18-74AA, BB, U18-75AA, BB, U18-76AA, BB, U18-77AA, BB, U18-78AA, BB, U18-79AA, BB, U18-80AA, BB, U18-81AA, BB, U18-82AA, BB, U18-83AA, BB, U18-84AA, BB, U18-85AA, BB, U18-86AA, BB, U18-87AA, BB, U18-88AA, BB, U18-89AA, BB, U18-90AA, BB, U18-91AA, BB, U18-92AA, BB, U18-93AA, BB, U18-94AA, BB, U18-95AA, BB, U18-96AA, BB, U18-97AA, BB, U18-98AA, BB, U18-99AA, BB, U18-100AA, BB, U18-101AA, BB, U18-102AA, BB, U18-103AA, BB, U18-104AA, BB, U18-105AA, BB, U18-106AA, BB, U18-107AA, BB, U18-108AA, BB, U18-109AA, BB, U18-110AA, BB, U18-111AA, BB, U18-112AA, BB, U18-113AA, BB, U18-114AA, BB, U18-115AA, BB, U18-116AA, BB, U18-117AA, BB, U18-118AA, BB, U18-119AA, BB, U18-120AA, BB, U18-121AA, BB, U18-122AA, BB, U18-123AA, BB, U18-124AA, BB, U18-125AA, BB, U18-126AA, BB, U18-127AA, BB, U18-128AA, BB, U18-129AA, BB, U18-130AA, BB, U18-131AA, BB, U18-132AA, BB, U18-133AA, BB, U18-134AA, BB, U18-135AA, BB, U18-136AA, BB, U18-137AA, BB, U18-138AA, BB, U18-139AA, BB, U18-140AA, BB, U18-141AA, BB, U18-142AA, BB, U18-143AA, BB, U18-144AA, BB, U18-145AA, BB, U18-146AA, BB, U18-147AA, BB, U18-148AA, BB, U18-149AA, BB, U18-150AA, BB, U18-151AA, BB, U18-152AA, BB, U18-153AA, BB, U18-154AA, BB, U18-155AA, BB, U18-156AA, BB, U18-157AA, BB, U18-158AA, BB, U18-159AA, BB, U18-160AA, BB, U18-161AA, BB, U18-162AA, BB, U18-163AA, BB, U18-164AA, BB, U18-165AA, BB, U18-166AA, BB, U18-167AA, BB, U18-168AA, BB, U18-169AA, BB, U18-170AA, BB, U18-171AA, BB, U18-172AA, BB, U18-173AA, BB, U18-174AA, BB, U18-175AA, BB, U18-176AA, BB, U18-177AA, BB, U18-178AA, BB, U18-179AA, BB, U18-180AA, BB, U18-181AA, BB, U18-182AA, BB, U18-183AA, BB, U18-184AA, BB, U18-185AA, BB, U18-186AA, BB, U18-187AA, BB, U18-188AA, BB, U18-189AA, BB, U18-190AA, BB, U18-191AA, BB, U18-192AA, BB, U18-193AA, BB, U18-194AA, BB, U18-195AA, BB, U18-196AA, BB, U18-197AA, BB, U18-198AA, BB, U18-199AA, BB, U1



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

SPARTAN CHASSIS U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB, V18-01AA, BB, V18-02AA, BB, V18-03AA, BB, V18-04AA, BB (18 Series)

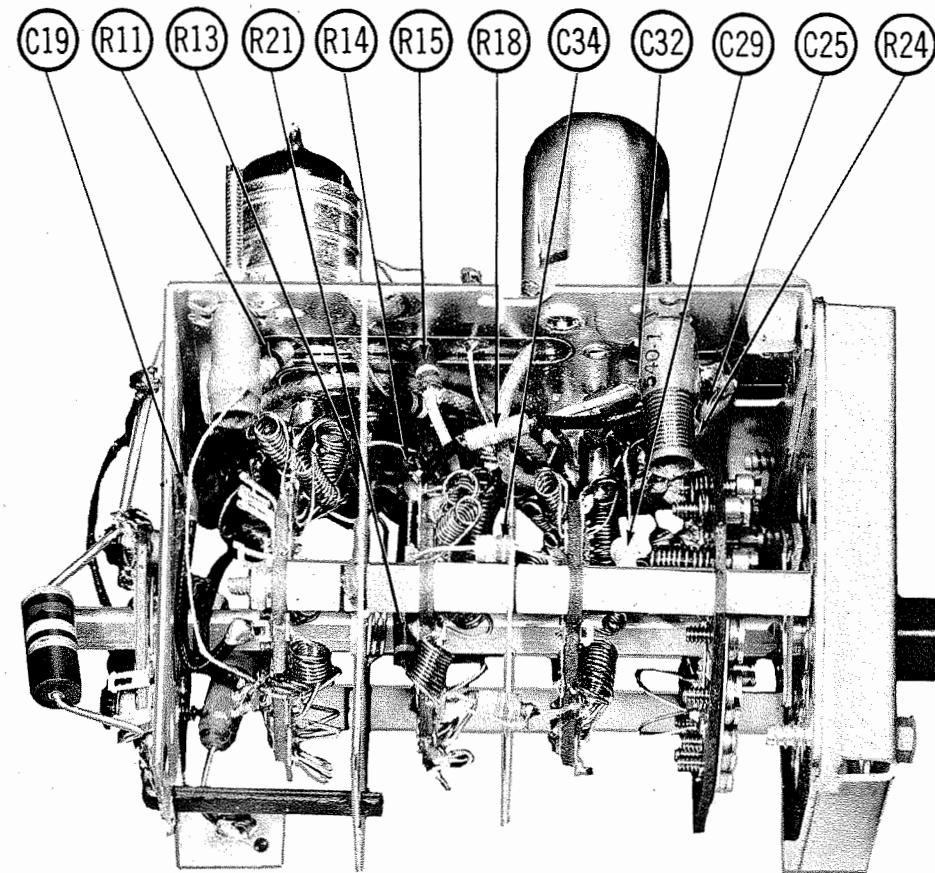
FOLDER 3



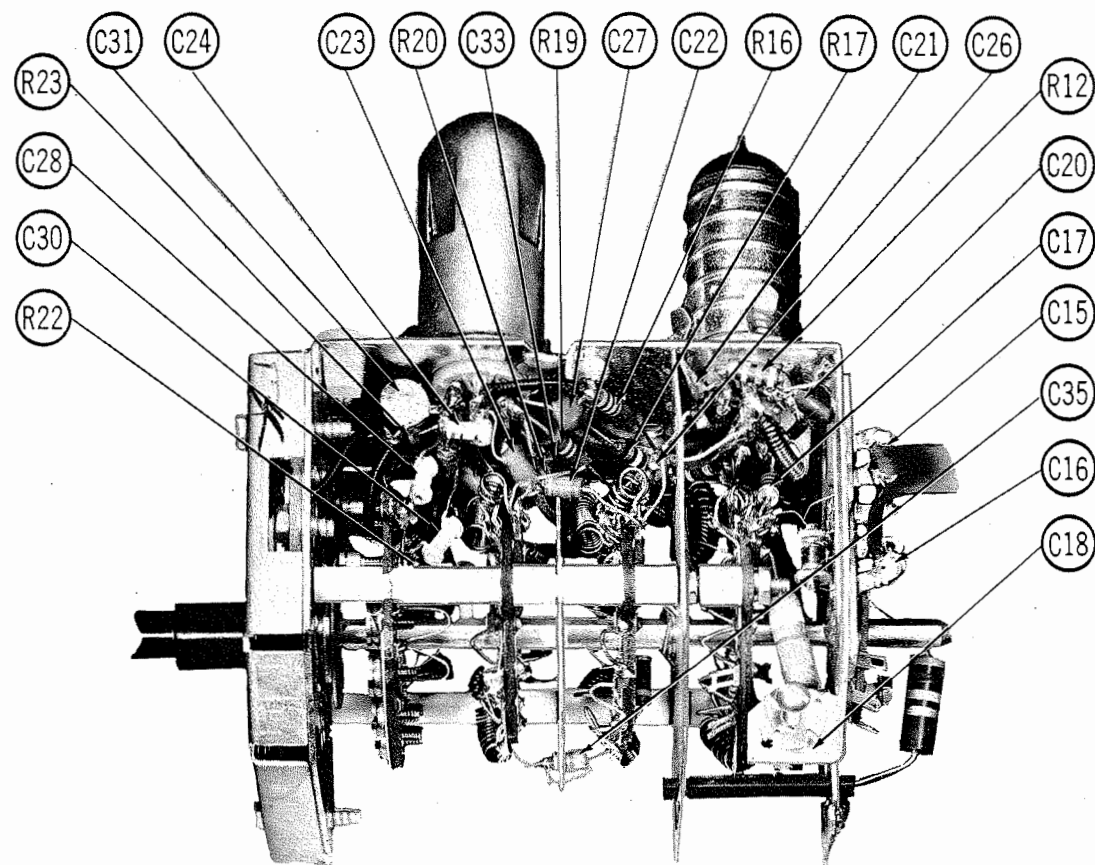
CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

SPARTAN CHASSIS U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB, V18-01AA, BB, V18-02AA, BB, V18-03AA, BB, V18-04AA, BB (18 Series)

FOLDER 3

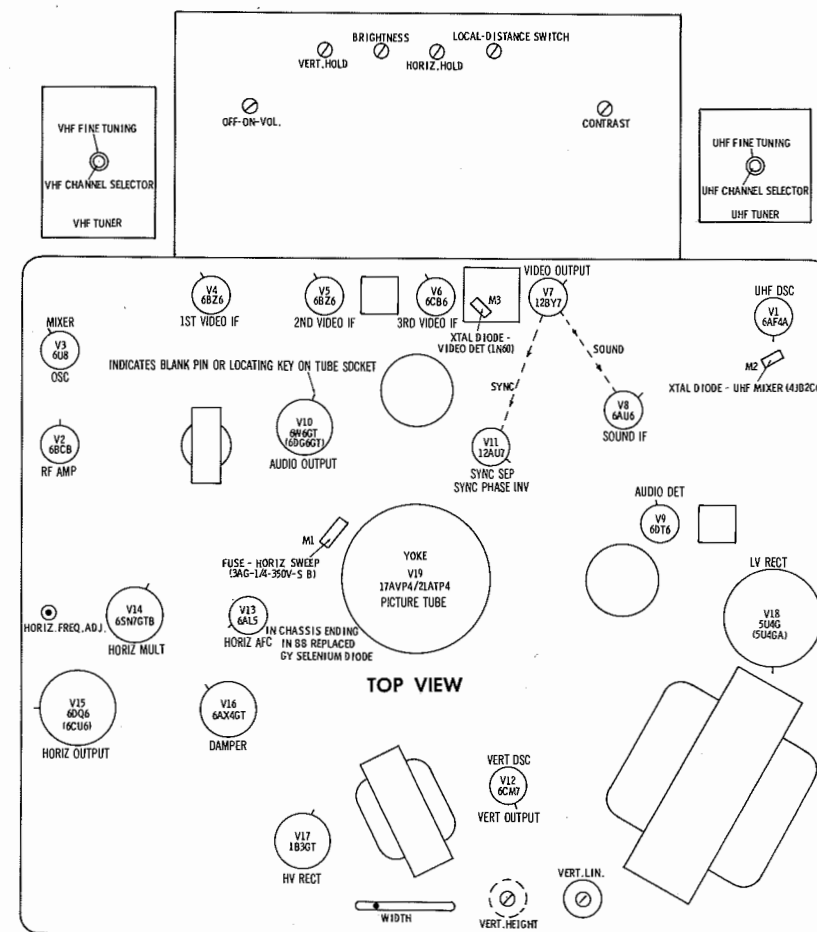


VHF TUNER-LEFT SIDE



VHF TUNER-RIGHT SIDE

## TUBE PLACEMENT CHART



SPARTAN CHASSIS U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB, U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB (18 Series)

## TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

### POWER SUPPLY FAILURE

No raster, no sound - V18, V10

### LOSS OF PICTURE OR SOUND

No pic, no sound, has raster - V4, V5, V6, Diode (M3), V7, V10

No pic, no sound, has snow - V2, V3, V4, V1 (UHF)

No pic, has sound, has raster - V7, V19

Has pic, no sound - V8, V9, V10

### SYNC FAILURE

No vert. sync - V11, V12

No horiz. sync - V11, V13 (Diode in "BB" Chassis), V14

No vert. or horiz. sync - V11

### SWEEP FAILURE

No raster, has sound - V13, V14, V15, V16, V17, V19, Fuse (M1)

No vertical deflection - V12

Poor vert. linearity or foldover - V12

Poor horiz. linearity or foldover - V14, V15, V16

Narrow picture - V14, V15, V16, V18

Vert. off freq. - V11, V12

Horiz. off freq. - V11, V13, V14

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt bias battery to the ungrounded side of C58. Connect the negative lead of a 1.5 volt bias battery to the ungrounded side of C59. Connect the positive leads to chassis. Set the local-distant switch to local position. Turn the contrast control fully counter clockwise.

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

| DUMMY ANTENNA | SWEEP GENERATOR COUPLING                              | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL                      | CONNECT SCOPE                                       | ADJUST     | REMARKS   |
|---------------|---|---------------------------|----------------------------|------------------------------|---|------------|---|
| 1. .001MFD    | High side to grid (pin 1) of V4. Low side to chassis. | 43.0MC (10MC Swp)         | 47.25MC                    | Any unused channel           | Vert. Amp. thru 10K to point . Low side to chassis. | A1         | Preset A4 by turning fully counter clockwise. Adjust to place marker in trap notch as in Fig. 1. This may be done with the slug in either of two positions. Use the one farthest from the chassis.                        |
| 2. "          | "   | "                         | 42.75MC<br>45.75MC         | "                            | "   | A2, A3, A4 | Adjust A2 for maximum gain with markers as indicated in Fig. 2. Adjust A3 to place 45.75MC at 50% on curve. Adjust A4 to place 42.75MC at 60%. Use only enough sweep generator output to provide usable pattern on scope. |
| 3. "          | High side to point . Low side to chassis.             | "                         | "                          | Any unused high band channel | "   | A5, A6     | Adjust A5 for maximum gain with 45.75MC at 45% on response curve. Adjust A6 for maximum gain and proper tilt as in Fig. 2.  |
| 4. 1000Ω      | High side to point . Low side to tuner chassis.       | "                         | "                          | UHF                          | "   | A7         | Adjust for response similar to Fig. 2 with MINIMUM tilt.  |

SOUND IF ALIGNMENT

Tune the receiver to a strong local TV station and adjust A8 for maximum volume and MINIMUM distortion.

Reduce the signal input by removing the antenna or by placing an attenuator between the antenna and antenna terminals so that with the volume control set for maximum volume, the sound will be barely audible.

Adjust A9 for MINIMUM noise and clearest sound.

With the same weak signal, adjust A10 and A11 for MINIMUM noise and clearest sound.

Reduce the signal input even further until noise is present retouch A9 for MINIMUM noise and clearest sound.

VHF OSCILLATOR ALIGNMENT

Leave bias connect as under Video IF Alignment. Leave local-distant switch in local position and contrast full counter clockwise.

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Set the fine tuning control to the mid-position of its range.

Use only enough sweep generator output to provide usable pattern on scope.

| DUMMY ANTENNA | SWEEP GENERATOR COUPLING                        | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE                                       | ADJUST | REMARKS   |
|---------------|---|---------------------------|----------------------------|---------|---|--------|---|
| 5. Fig. 3     | Across antenna terminals thru network (Fig. 3). | 213MC (10MC Swp)          | 211.25MC                   | 13      | Vert. Amp. thru 47K to point . Low side to chassis. | A12    | Adjust to place sound marker in trap notch as in Fig. 4. Video marker should fall at 50%. |
|               |   | 207MC (10MC Swp)          | 205.25MC                   | 12      |   | A13    |   |
|               |   | 201MC (10MC Swp)          | 199.25MC                   | 11      |   | A14    |   |
|               |   | 195MC (10MC Swp)          | 193.25MC                   | 10      |   | A15    |   |
|               |   | 189MC (10MC Swp)          | 187.25MC                   | 9       |   | A16    |   |
|               |   | 183MC (10MC Swp)          | 181.25MC                   | 8       |   | A17    |   |
|               |   | 177MC (10MC Swp)          | 175.25MC                   | 7       |   | A18    |   |
|               |   | 171MC (10MC Swp)          | 169.25MC                   | 6       |   | A19    |   |
|               |   | 165MC (10MC Swp)          | 163.25MC                   | 5       |   | A20    |   |
|               |   | 159MC (10MC Swp)          | 157.25MC                   | 4       |   | A21    |   |
|               |   | 153MC (10MC Swp)          | 151.25MC                   | 3       |   | A22    |   |
|               |   | 147MC (10MC Swp)          | 145.25MC                   | 2       |   | A23    |   |
|               |   | 141MC (10MC Swp)          | 139.25MC                   |         |   |        |   |
|               |   | 135MC (10MC Swp)          | 133.25MC                   |         |   |        |   |
|               |   | 129MC (10MC Swp)          | 127.25MC                   |         |   |        |   |
|               |   | 123MC (10MC Swp)          | 121.25MC                   |         |   |        |   |

RF, MIXER AND UHF ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

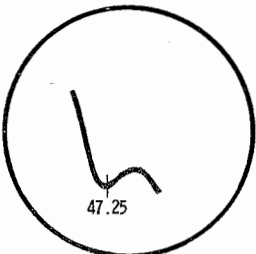


FIG. 1

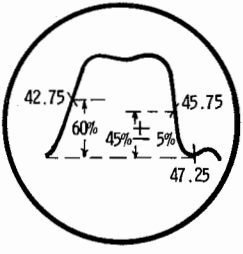


FIG. 2

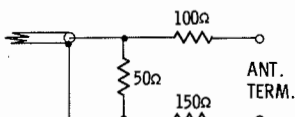


FIG. 3

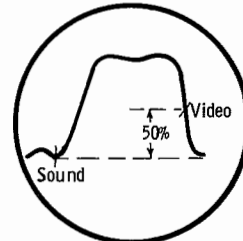
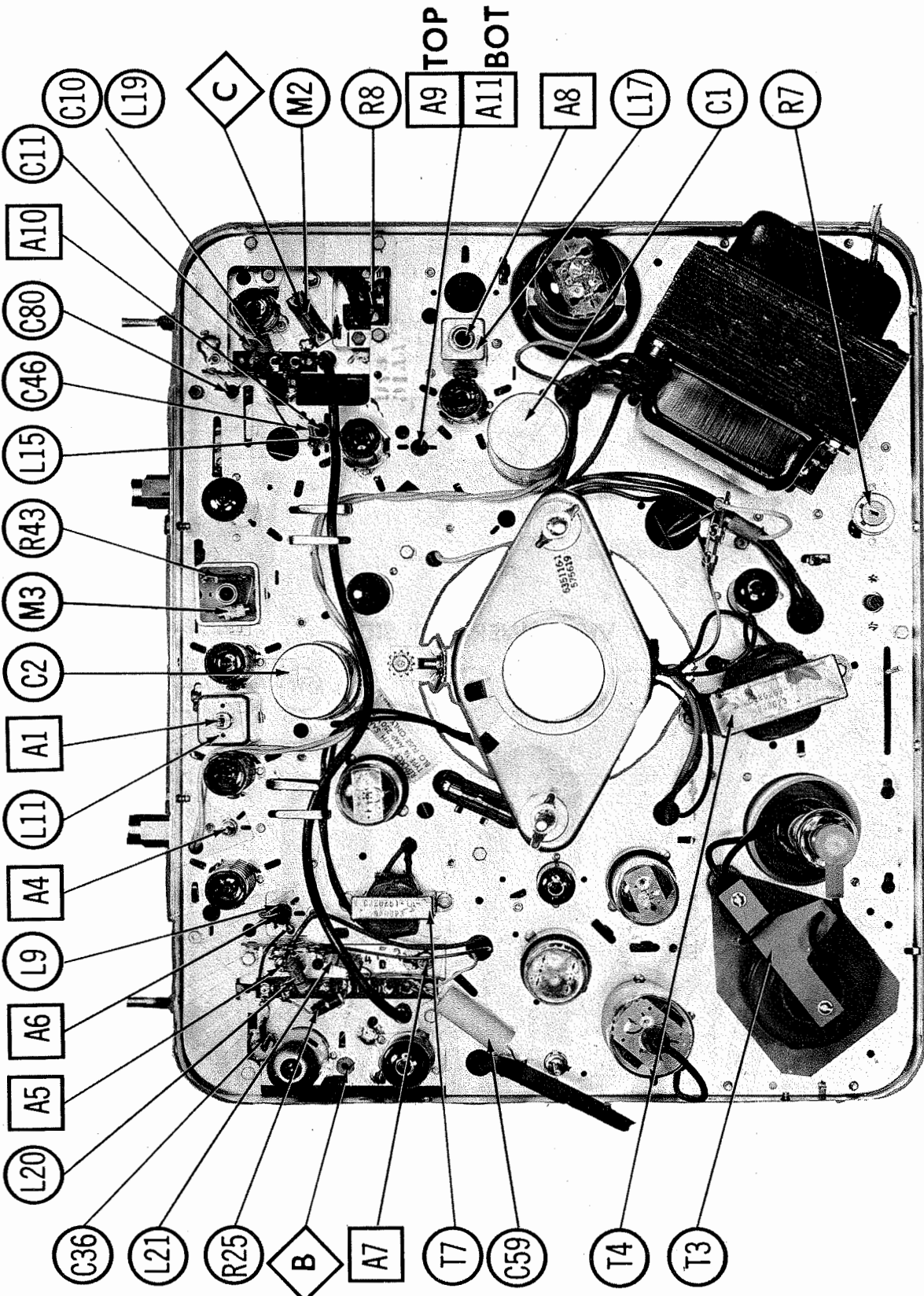
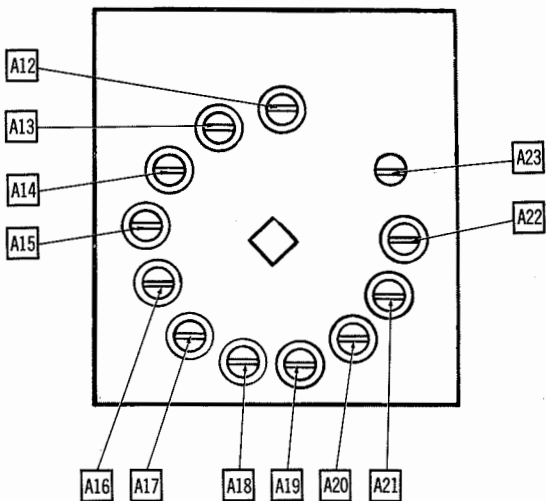


FIG. 4



CHASSIS-TOP VIEW

SPARTAN CHASSIS U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB, U18-01AA, BB, U18-02AA, BB, U18-03AA, BB, U18-04AA, BB (18 Series)