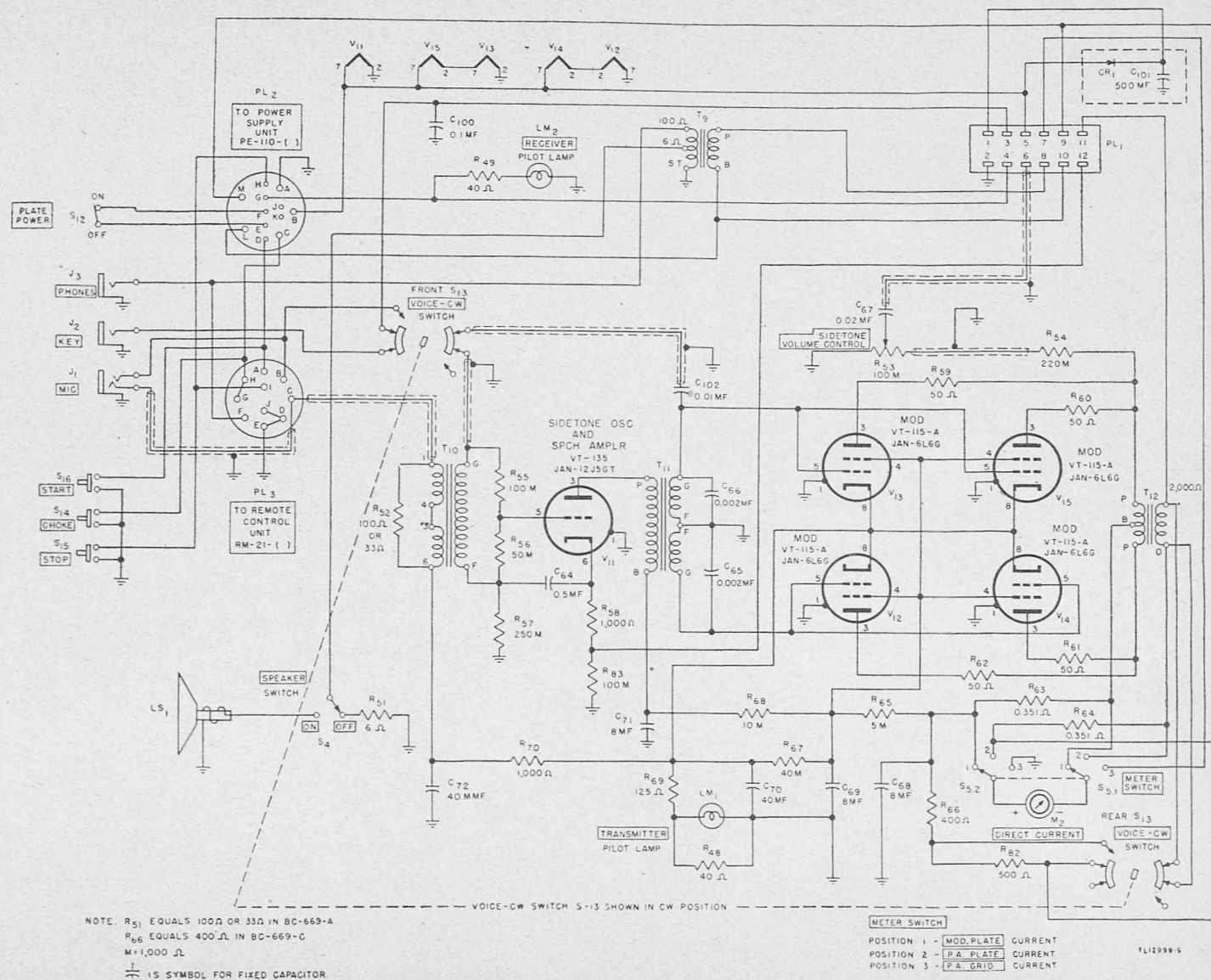


| REF SYMBOL | VALUE    | RATING     |
|------------|----------|------------|
| C64        | 0.5 MF   | 200 VDCW   |
| C65        | 0.002 MF | 500 VDCW   |
| C66        | 0.002 MF | 500 VDCW   |
| C67        | 0.02 MF  | 600 VDCW   |
| C68        | 8 MF     | 1,000 VDCW |
| C69        | 8 MF     | 1,000 VDCW |
| C70        | 40 MF    | 100 VDCW   |
| C71        | 8 MF     | 1,000 VDCW |
| C72        | 40 MF    | 100 VDCW   |
| C100       | 0.1 MF   | 400 VDCW   |
| C101       | 500 MF   | 25 VDCW    |
| C102       | 0.01 MF  | 400 VDCW   |

| REF SYMBOL | VALUE                                                   | RATING       |
|------------|---------------------------------------------------------|--------------|
| R48        | 40 OHMS                                                 | 2 W          |
| R49        | 40 OHMS                                                 | 2 W          |
| R51        | BC-669-A,<br>100 OR<br>33 OHMS                          | 1/2 W<br>2 W |
|            | BC-669-B<br>AND -C,<br>5 OHMS                           | 2 W          |
| R52        | 100 OR<br>33 OHMS                                       | 1/2 W<br>2 W |
| R53        | 100,000 OHMS<br>(POTENTIOMETER)                         |              |
| R54        | 220,000 OHMS                                            | 1 W          |
| R55        | 100,000 OHMS                                            | 1/2 W        |
| R56        | 50,000 OHMS                                             | 1/2 W        |
| R57        | 250,000 OHMS                                            | 1/2 W        |
| R58        | 1,000 OHMS                                              | 1/2 W        |
| R59        | 50 OHMS                                                 | 1/2 W        |
| R60        | 50 OHMS                                                 | 1/2 W        |
| R61        | 50 OHMS                                                 | 1/2 W        |
| R62        | 50 OHMS                                                 | 1/2 W        |
| R63        | 0.351 OHM                                               | 300 MA       |
| R64        | 0.351 OHM                                               | 300 MA       |
| R65        | 5,000 OHMS                                              | 20 W         |
| R66        | BC-669-A<br>AND -B,<br>500 OHMS<br>WITH 400-<br>OHM TAP | 50 W         |
|            | BC-669-C,<br>400 OHMS                                   | 50 W         |
| R67        | 40,000 OHMS                                             | 20 W         |
| R68        | 10,000 OHMS                                             | 10 W         |
| R69        | 125 OHMS                                                | 10 W         |
| R70        | 1,000 OHMS                                              | 2 W          |
| R82        | 500 OHMS                                                | 50 W         |
| R83        | 100,000 OHMS                                            | 1/2 W        |



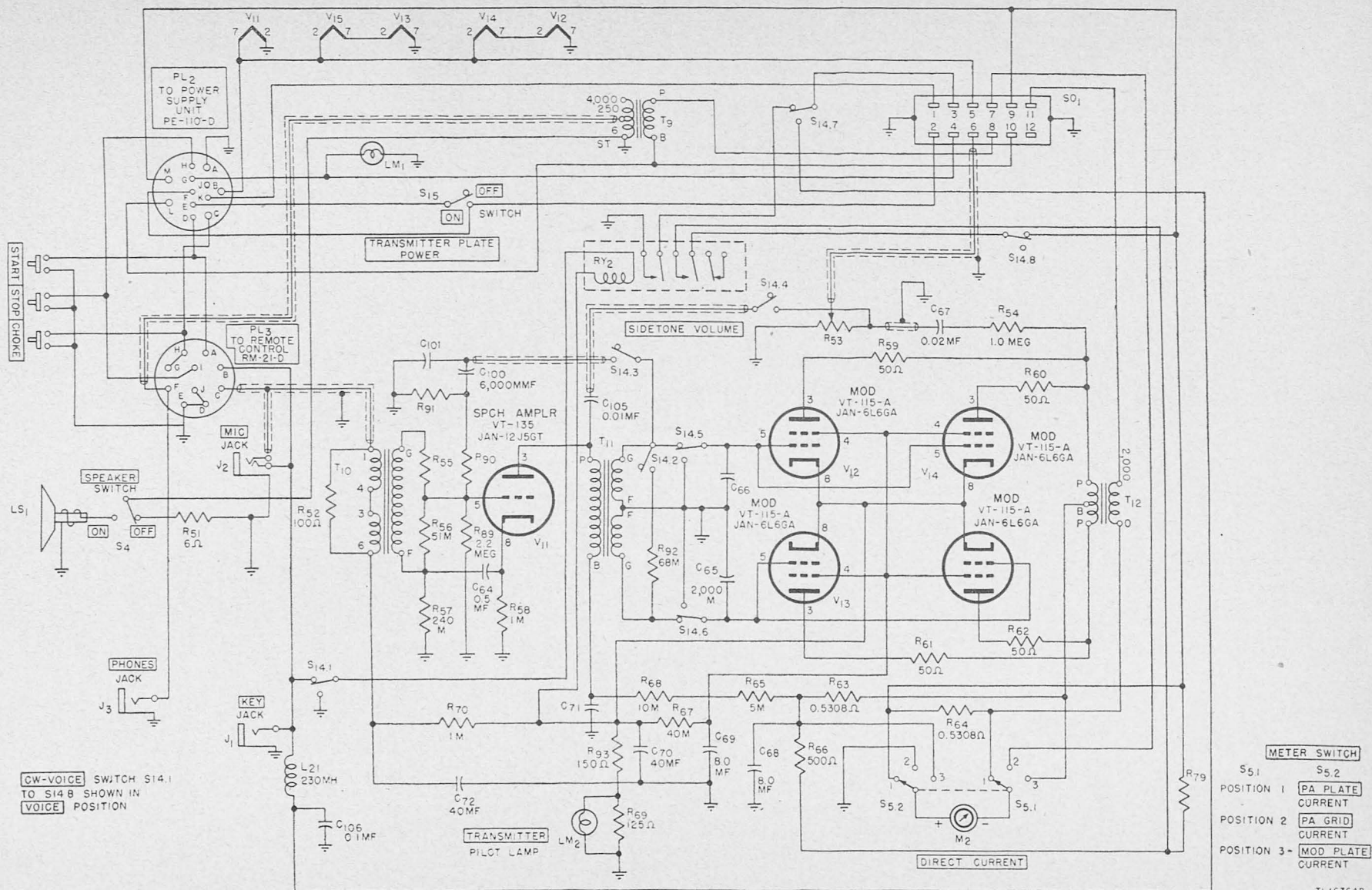
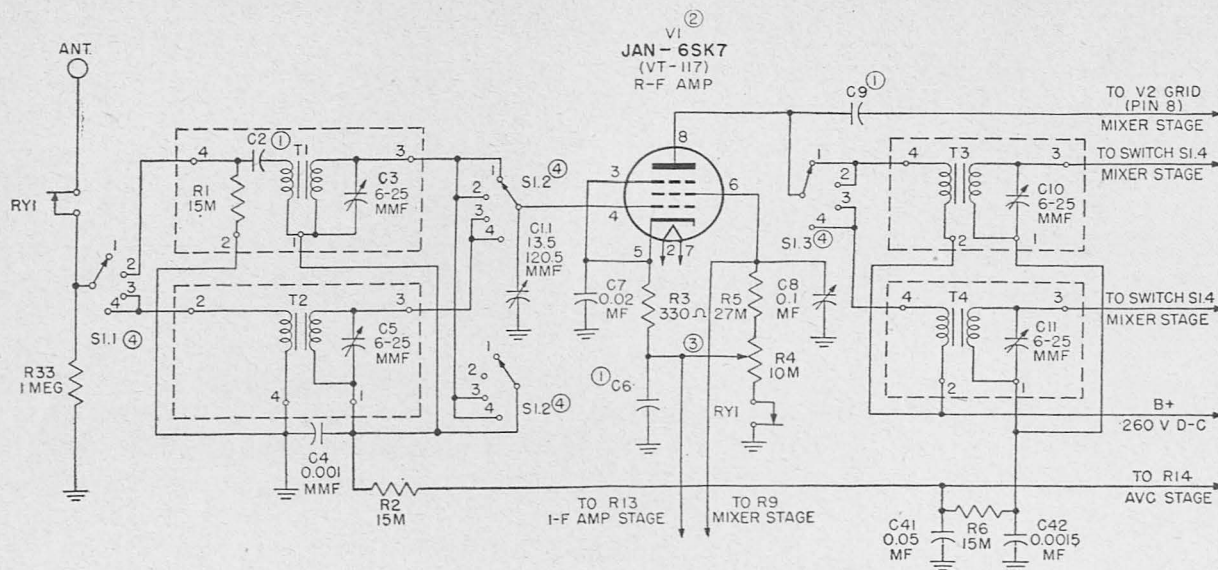


Figure 7. Radio Receiver and Transmitter BC-669-D, modulator section, schematic.



① VALUES OF THESE CIRCUIT ELEMENTS VARY IN DIFFERENT MODELS. VALUES ARE AS FOLLOWS:

| MODEL    | C2         | C6      | C9      |
|----------|------------|---------|---------|
| BC-669-A | 0.0045 MMF | 1 MF    | 3 MMF   |
| BC-669-B | 0.006 MF   | 0.05 MF | 2.5 MMF |
| BC-669-C | 0.0045 MF  | 0.01 MF | 3 MMF   |

② GLASS TUBE JAN-6SK7 GT/G (VT-117-A) USED IN BC-669-B AND BC-669-C.

③ CATHODE CIRCUIT VARIES BETWEEN MODELS. MAIN CIRCUIT DIAGRAM IS FOR BC-669-A. CATHODE CIRCUITS FOR BC-669-B AND BC-669-C ARE SHOWN IN SMALLER DIAGRAMS.

④

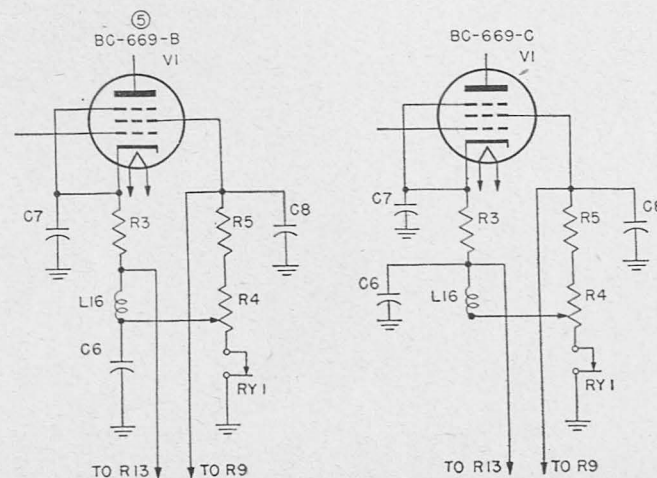
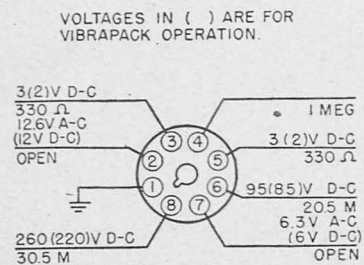
| SI POSITION | OPERATION | BAND | FREQUENCY    |
|-------------|-----------|------|--------------|
| 1           | CRYSTAL   | 1    | 1680-2750 KC |
| 2           | MANUAL    | 1    | 1680-2750 KC |
| 3           | CRYSTAL   | 2    | 2700-4450 KC |
| 4           | MANUAL    | 2    | 2700-4450 KC |

⑤ BC-669-B ON ORDER NO. 32780-PHILA-43 IS THE SAME AS MODEL BC-669-C.

FOR TEST CONDITIONS SEE PARAGRAPH 23.

NOTE:

⎓ IS SYMBOL FOR FIXED CAPACITOR  
 ⎓ IS SYMBOL FOR VARIABLE CAPACITOR  
 M = 1,000 OHMS



TL 15704

Figure 28. Radio Receiver and Transmitter BC-669-(\*), r-f amplifier stage, schematic diagram.

### 37. Mixer or Converter Stage (fig. 29)

a. FUNCTION OF STAGE. (1) Grid No. 3 of Tube JAN-6SA7 (V2) receives signal voltage amplified by tube V1 through inductive coupling provided by r-f transformer T3 or T4. Primary switching for the two frequency bands is effected by switch section S1.3. Secondary switching in two frequency bands is provided by switch section S1.4. The tuned circuit formed by T3 secondary and capacitor section C1.2 determines the frequency of the signal received by grid No. 3.

(2) Tube V2 receives its plate voltage through resistor R11, the primary of i-f transformer T5, and resistor R10. The voltage is filtered of radio frequency by capacitor C14.

(3) The cathode of tube V2 is biased by the voltage drop across resistor R7, and is bypassed by capacitor C12.

(4) An a-v-c voltage is applied through resistor R6 and T3 secondary to grid No. 3 of tube V2, and is filtered by capacitor C41. Filtering assists in maintaining voltage level, and in preventing overloading of the tube by very strong signals.

b. REPAIR DATA ON MIXER OR CONVERTER STAGE. Defective action in a BC-669-(\*) receiver may be

caused by faults on the mixer stage. Among these are the following:

(1) *Dead set.* This may be due to a defective Tube JAN-6SA7, or to improper tube voltages. The oscillator may not be working, or it may be operating at a frequency which will not pass the i-f transformer. The i-f transformer may be defective. If no r-f signal is present, rub the metal part of the screw driver on the stator of the oscillator tuning capacitor. Little or no noise in the loudspeaker indicates a defective oscillator.

**Caution:** Keep fingers or body away from the metal part of the screw driver.

A negative voltage across oscillator grid leak R8 indicates an operative oscillator. No voltage, or positive voltage, indicates trouble. Infinity or high reading on an ohmmeter across oscillator coils T7, T8, or L2 indicates trouble.

(2) *Fading.* This may be caused by dirty or loose band-switch contacts. It may also be caused by loose windings on r-f coils, by open or shorted resistors, by poorly soldered contacts, or by defective dielectric in trimmers or padders.

(3) *Distortion.* This may be caused by a defective mixer tube, by open or shorted a-v-c capacitors,

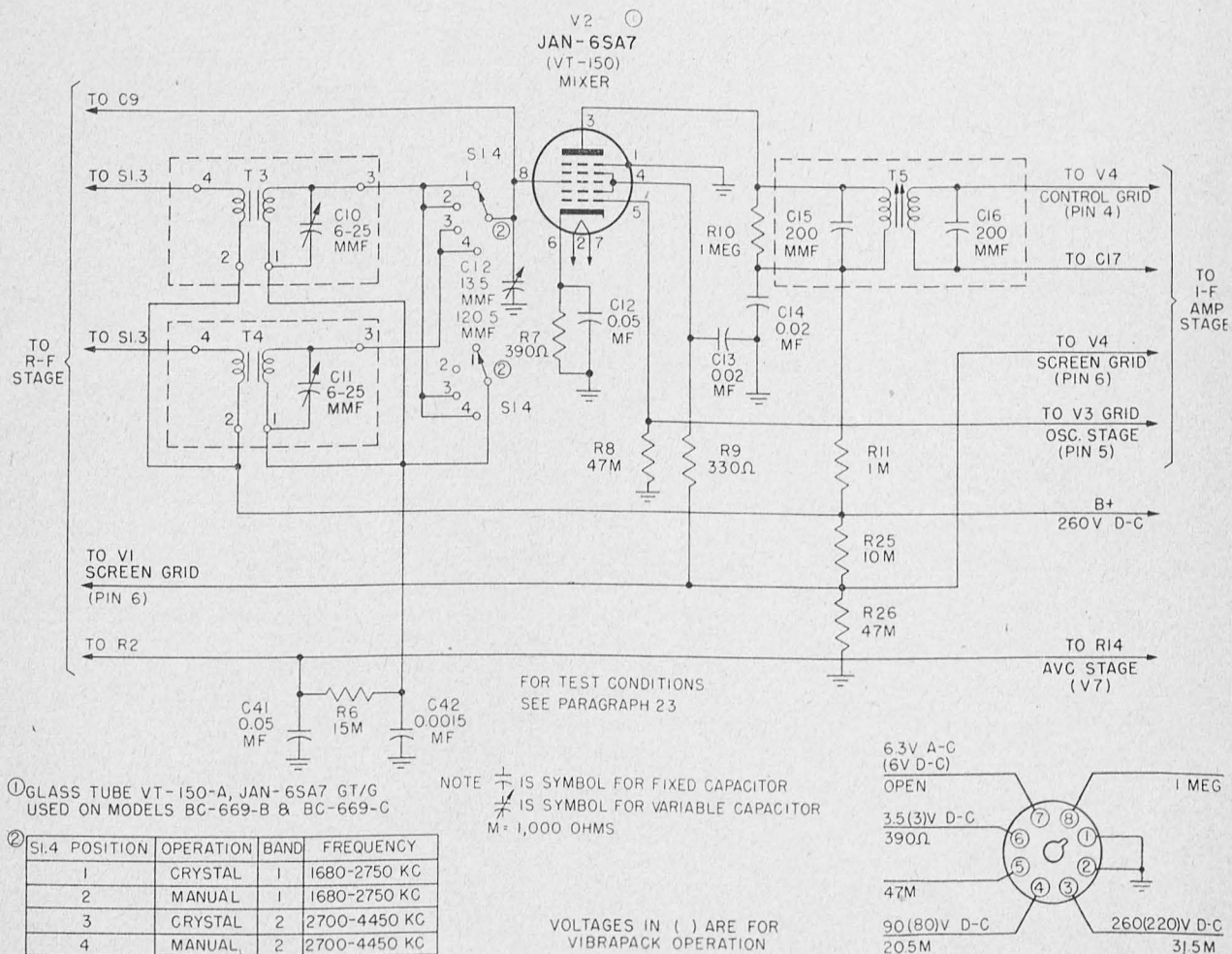
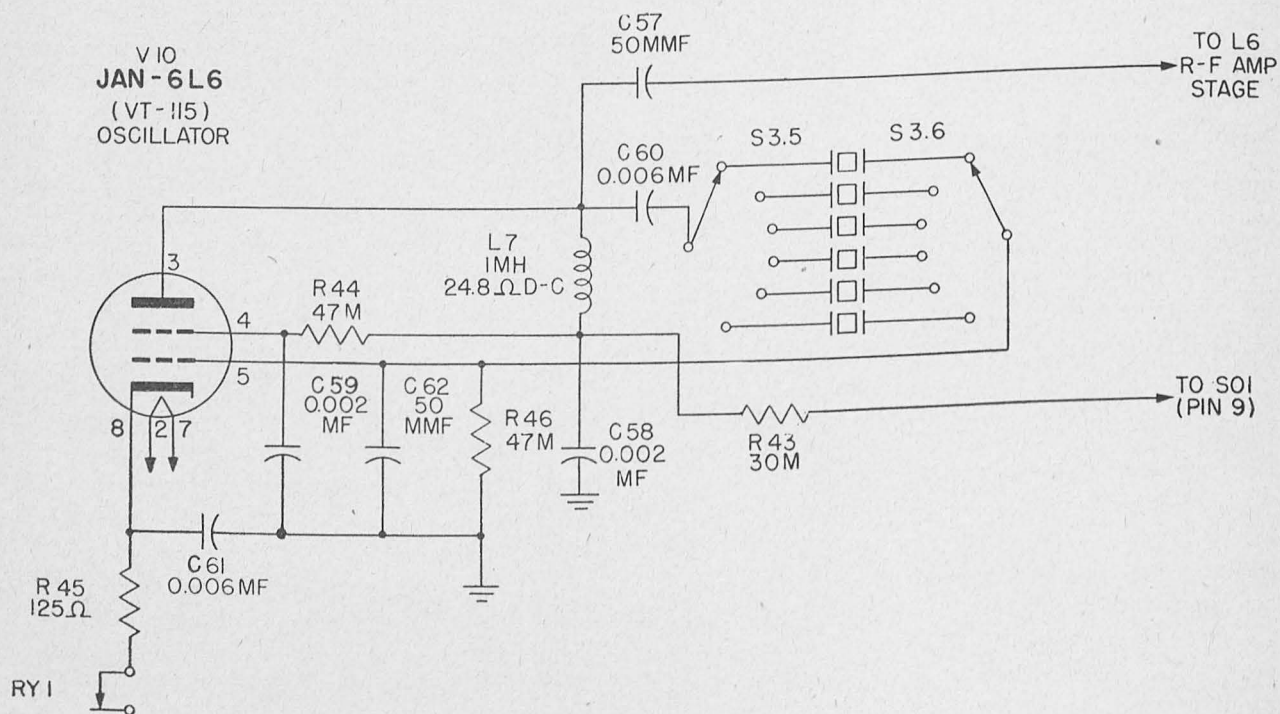


Figure 29. Radio Receiver and Transmitter BC-669-(\*), mixer stage, schematic diagram.



FOR TEST CONDITIONS  
SEE PARAGRAPH 23.

NOTE:  $\text{---}\text{||}\text{---}$  IS SYMBOL FOR FIXED CAPACITOR  
M=1,000 OHMS.

VALUES IN [ ] APPLY TO TRANSMIT OPERATION.  
TUBES NOT EXCITED UNDER VIBRAPACK OPERATION.

TL 19706

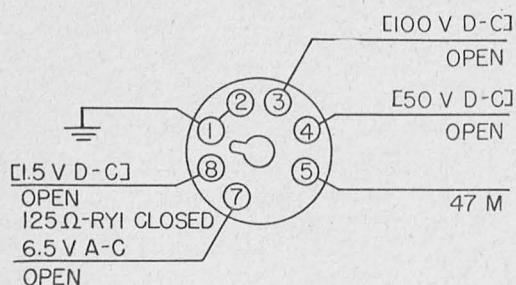
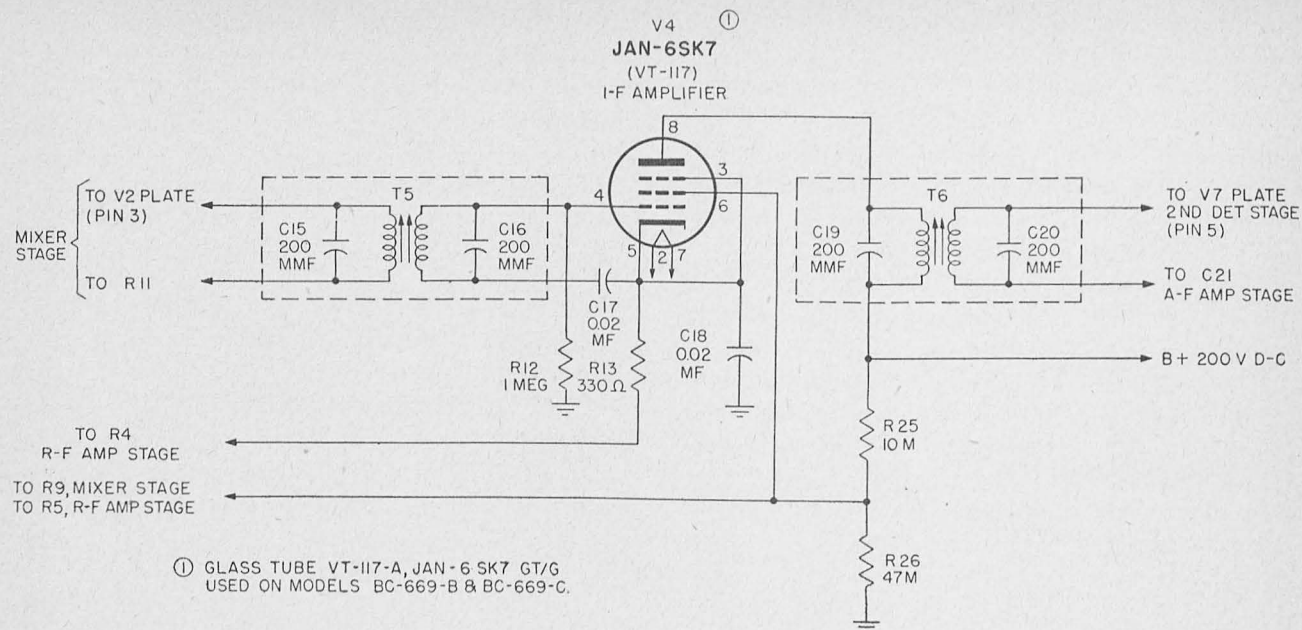
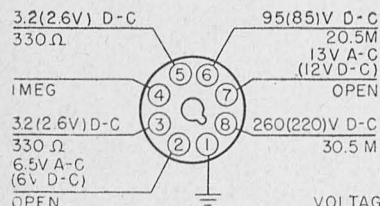


Figure 30. Radio Receiver and Transmitter BC-669-(\*), heterodyne oscillator stage, schematic diagram.



FOR TEST CONDITIONS  
SEE PARAGRAPH 23.



NOTE:  $\frac{1}{\text{---}}$  IS SYMBOL FOR FIXED CAPACITOR.  
M = 1,000 OHMS.

TL 19707

VOLTAGES IN ( ) ARE FOR  
VIBRAPACK OPERATION.

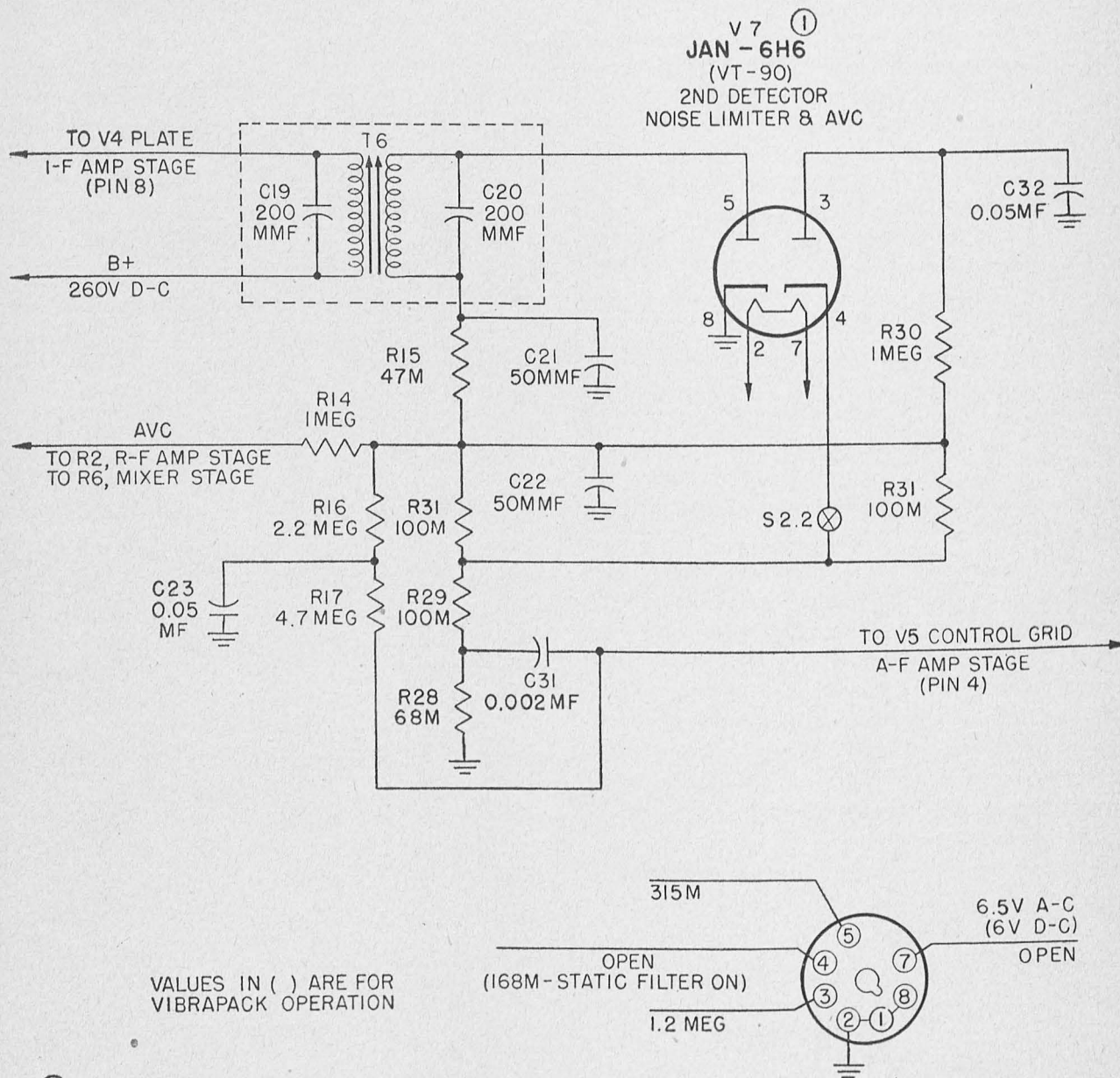
Figure 31. Radio Receiver and Transmitter BC-669-(\*), i-f amplifier stage, schematic diagrams.

### c. PARTS DATA.

| Ref. symbol           | Signal Corps stock No. | Name of part and description                                                                  | Function           |
|-----------------------|------------------------|-----------------------------------------------------------------------------------------------|--------------------|
| C15                   | 3D390                  | CAPACITOR: 200 mmf, $\pm 5\%$ ; 500 vdcw; molded silver-mica; small postage stamp type        | T5 pri resonator.  |
| C15 C <sup>1</sup>    | 3D390                  | CAPACITOR: 200 mmf, $\pm 5\%$ ; 500 vdcw; temp coef 0.0075; tubular, ceramic                  | T5 pri resonator.  |
| C16                   | 3D390                  | CAPACITOR: 200 mmf, $\pm 5\%$ ; 500 vdcw; molded silver-mica; small postage stamp type        | T5 pri resonator.  |
| C16 C <sup>1</sup>    | 3D390                  | CAPACITOR: 200 mmf, $\pm 5\%$ ; 500 vdcw; temp coef 0.00075; tubular, ceramic                 | T5 pri resonator.  |
| C17 A, B <sup>1</sup> | 3DA20-45               | CAPACITOR: 0.02 mf, $-10\%$ $+20\%$ ; 400 vdcw; molded paper                                  | T5 sec return.     |
| C17 C <sup>1</sup>    | 3DA20-45               | CAPACITOR: 0.02 mf, $\pm 20\%$ ; 400 vdcw; molded paper                                       | T5 sec return.     |
| C18 A, B <sup>1</sup> | 3DA20-45               | CAPACITOR: 0.02 mf, $-10\%$ $+20\%$ ; 400 vdcw; molded paper                                  | V4 cathode bypass. |
| C18 C <sup>1</sup>    | 3DA20-45               | CAPACITOR: 0.02 mf, $\pm 20\%$ ; 400 vdcw; molded paper                                       | V4 cathode bypass. |
| R12                   | 3Z6801-16              | RESISTOR: 1-megohm $\pm 20\%$ $\frac{1}{2}$ watt; insulated carbon                            | V4 grid leak.      |
| R13                   | 3Z6033-9               | RESISTOR: 330 ohms $\pm 10\%$ ; $\frac{1}{2}$ watt; insulated carbon                          | V4 cathode bias.   |
| T5                    | 2Z9641.11              | TRANSFORMER, i-f: 385 kc; double permeability tuned; contains capacitors C14 and C16; special | 1st i-f amp coil.  |
| V4 A <sup>1</sup>     |                        | TUBE, JAN-6SK7, VT-117                                                                        | Rcvr i-f amp.      |
| V4 B, C <sup>1</sup>  |                        | TUBE, JAN-6SK7GT/G, VT-117-A                                                                  | Rcvr i-f amp.      |
| V4 B, C <sup>2</sup>  |                        | TUBE, JAN-6SK7GT/G, VT-117-A                                                                  | Rcvr i-f amp.      |

<sup>1</sup> Applies only to models indicated.

<sup>2</sup> Applies only to models indicated on Orders Nos. 32780-Phila-43 and 32781-Phila-43.



① V7 IS A JAN 6H6-GT/G GLASS TUBE  
FOR MODELS BC-669-B, AND BC-669-C

FOR TEST CONDITIONS SEE PARAGRAPH 23.

TL19708

NOTE:

 IS SYMBOL FOR FIXED CAPACITOR  
 IS SYMBOL FOR VARIABLE CAPACITOR  
 M = 1,000 OHMS

Figure 32. Radio Receiver and Transmitter BC-669-(\*) second detector, noise limiter, and a-v-c stage, schematic diagram.

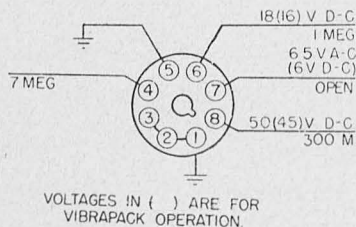
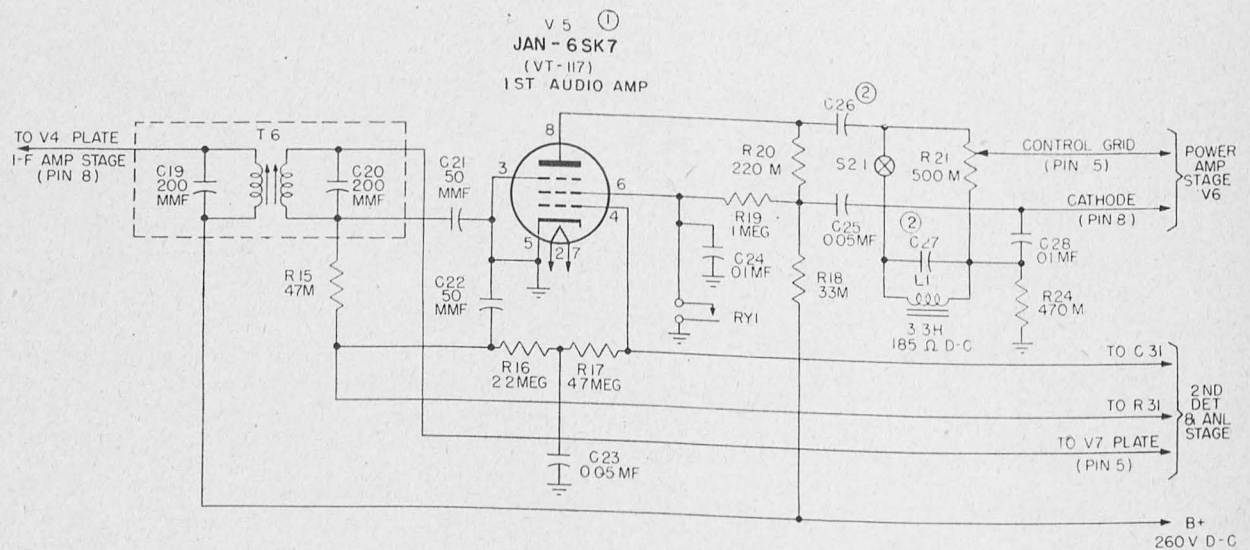
are the receiver troubles which may originate in this stage.

(1) *Dead unit and dead audio component.* Check tube V5. If it is defective, replace it. Shorted plate-load resistor R20 cancels the normal voltage drop across the resistor, raises plate potential and increases current in the circuit. When the plate voltage of V5 is excessive or when there is no output at the control grid (pin No. 5) of tube V6, check resistor R20. Check capacitors C20, C21, C22, C23, C24, C25, and C26. Replace any defective capacitors. Check resistors R15, R16, R17, R18, R19, R25, and R26. Replace any defective resistors.

(2) *Distortion.* Make sure that other stages are operating properly. If distortion continues, check resistors by voltage measurements for heating and consequent value change after set is in operation. Check all soldered connections.

(3) *Hum.* Check all filter capacitors. Check tubes against possible internal shorts.

(4) *Weak reception.* Check to make sure that filaments are getting proper voltage throughout unit. Check B+ to its source through pin and contacts No. 8 and 10 in plug PL1, and socket SO1 to pin No. 1 in plug PL2.



NOTE:

IS SYMBOL FOR FIXED CAPACITOR  
IS SYMBOL FOR VARIABLE CAPACITOR  
M=1,000 OHMS

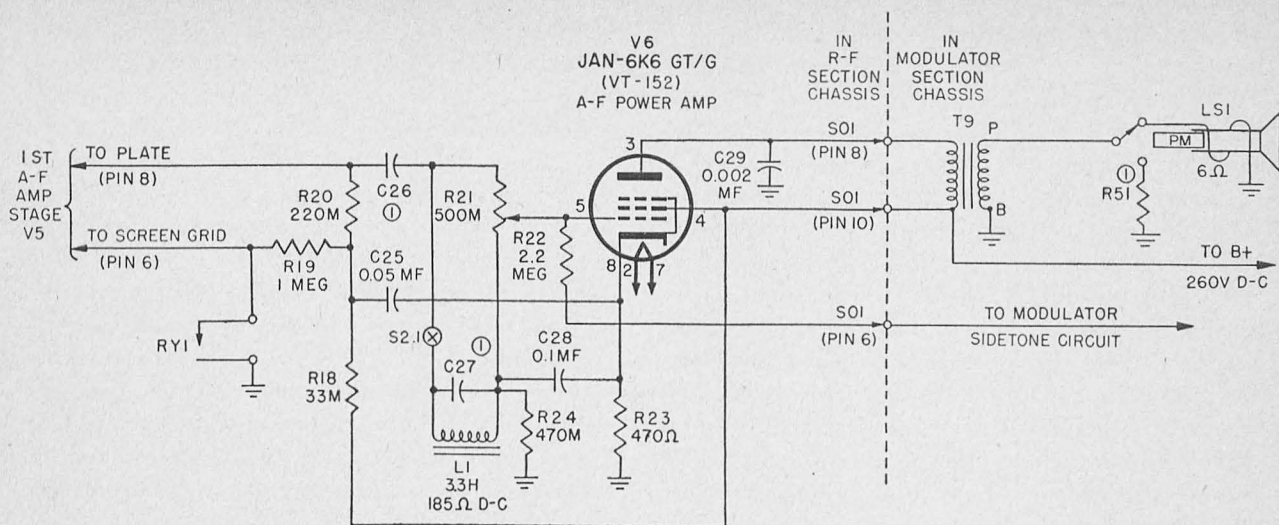
① GLASS TUBE VT-117-A, JAN-6SK7 GT/G  
USED ON MODELS BC-669-B & BC-669-C

| MODEL    | C26       | C27       |
|----------|-----------|-----------|
| BC-669-A | 0.005 MMF | 0.0075 MF |
| BC-669-B | 0.006 MMF | 0.007 MF  |
| BC-669-C | 0.005 MMF | 0.0075 MF |

FOR TEST CONDITIONS SEE PARAGRAPH 23.

TL19709

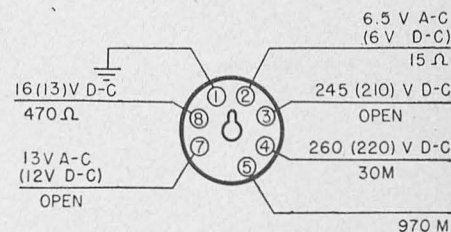
Figure 33. Radio Receiver and Transmitter BC-669-(\*), audio-voltage amplifier stage, schematic diagram.



①

| MODEL    | C26      | C27       | R51         |
|----------|----------|-----------|-------------|
| BC-669-A | 0.005 MF | 0.0075 MF | 100Ω<br>33Ω |
| BC-669-B | 0.006 MF | 0.007 MF  | 6Ω          |
| BC-669-C | 0.005 MF | 0.0075 MF | 6Ω          |

VALUES IN ( ) ARE FOR  
VIBRAPACK OPERATION



FOR TEST CONDITIONS SEE PARAGRAPH 23.

NOTE:

⊢ IS SYMBOL FOR FIXED CAPACITOR

⊢ IS SYMBOL FOR VARIABLE CAPACITOR

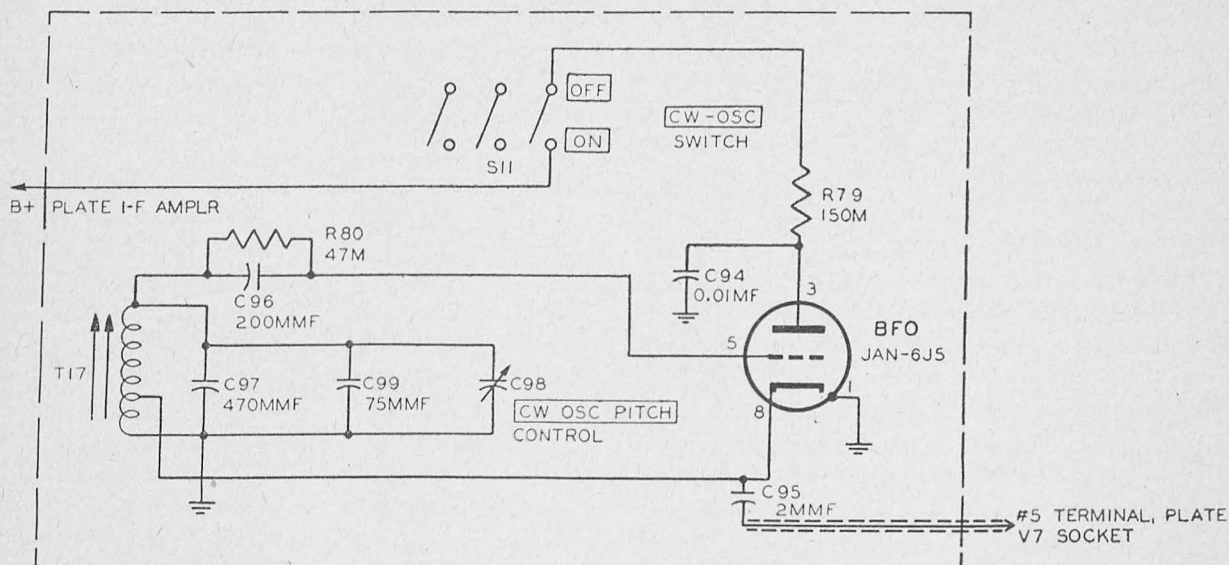
M=1,000 OHMS

Figure 34. Radio Receiver and Transmitter BC-669-(\*), audio-power amplifier stage, schematic diagram.

### c. PARTS DATA.

| Ref. symbol | Signal Corps stock No. | Name of part and description                                                    | Function                  |
|-------------|------------------------|---------------------------------------------------------------------------------|---------------------------|
| C29 A*      | 3DA2-71                | CAPACITOR: 0.002 mf $\pm 20\%$ ; 800 vdcw; molded mica; postage stamp type..... | V6 plate bypass.          |
| C29 B,C*    | 3DA2-71                | CAPACITOR: 0.002 mf $\pm 10\%$ ; 2,500 vdcw; molded mica .....                  | V6 plate bypass.          |
| C30 A,B*    | 3DA50-57               | CAPACITOR: 0.05 mf $-10\%$ $+20\%$ ; 600 vdcw; molded paper .....               | V6 screen bypass.         |
| C30 C       | 3DA50-57               | CAPACITOR: 0.05 mf $\pm 20\%$ ; 600 vdcw; molded paper .....                    | V6 screen bypass.         |
| R22         | 3Z6802A2-9             | RESISTOR: 2.2 megohms $\pm 20\%$ ; $\frac{1}{2}$ watt; insulated carbon .....   | Sidetone coupling.        |
| R23         | 3Z6047-7               | RESISTOR: 470 ohms $\pm 10\%$ ; 2 watts; insulated carbon .....                 | V6 cathode bias.          |
| R47         | 3Z6001 E 5-2           | RESISTOR: 15 ohms $\pm 10\%$ ; 10 watts.....                                    | V6 fil dropping.          |
| V6          |                        | TUBE, JAN-6K6GT/G, (VT-152) .....                                               | Rev'r audio-power output. |
| V6 B,C*     |                        | TUBE, JAN-6K6GT/G, (VT-1252) .....                                              | Rev'r audio-power output. |

\* Applies only to indicated models.



NOTE.  $\text{---}\text{||}\text{---}$  IS SYMBOL FOR FIXED CAPACITOR  
 $\text{---}\text{||}\text{---}$  IS SYMBOL FOR VARIABLE CAPACITOR.  
 M=1,000  $\Omega$

TL11952S

Figure 35. Radio Receiver and Transmitters BC-669-AM, -BM, and -CM, beat-frequency oscillator stage.

#### d. PARTS DATA (Receiver).

| Ref. symbol | Signal Corps stock No. | Name of part and description                                                                     | Function                         |
|-------------|------------------------|--------------------------------------------------------------------------------------------------|----------------------------------|
| C94 .....   | (*) .....              |                                                                                                  | Plate bypass capacitor.          |
| C95 .....   | 3D9003-12 .....        | CAPACITOR: fixed; mica; 3 mf; $\pm 20\%$ ; 500 vdcw; Dubilier type 5WLS .....                    | Coupling capacitor.              |
| C96 .....   |                        | CAPACITOR: Same as C95 .....                                                                     | Grid coupling capacitor.         |
| C97 .....   | 3K2551143 .....        | CAPACITOR: fixed; silver mica; 500 mf; $\pm 2\%$ ; 300 vdcw; JAN type CM25D50011G .....          | Padding capacitor.               |
| C98 .....   |                        | CAPACITOR: Same as C97 .....                                                                     | Pitch control capacitor.         |
| C99 .....   | (*) .....              |                                                                                                  | Padding capacitor.               |
| R79 .....   | 3RC21BE154M..          | RESISTOR: fixed; carbon; 150,000 ohms; $\pm 20\%$ ; $\frac{1}{2}$ watt .....                     | Plate voltage-dropping resistor. |
| R80 .....   | (*) .....              |                                                                                                  | Grid bias resistor.              |
| S1.1 .....  | 3Z9825-80.2 .....      | SWITCH: rotary; selector; 7 pole; 4-position; 3-section; Erla No. 13848 (for model C only) ..... | Circuit selector.                |
| T17 .....   | 2Z9641.182 .....       | COIL ASSEMBLY: radio; bfo; iron core; Erla No. 16117 .....                                       | B-f-o plate inductance.          |
| VT-94 ..... | 2J6J5 .....            | TUBE: JAN-6J5 .....                                                                              | Oscillator tube.                 |

\* Indicates stock not available.

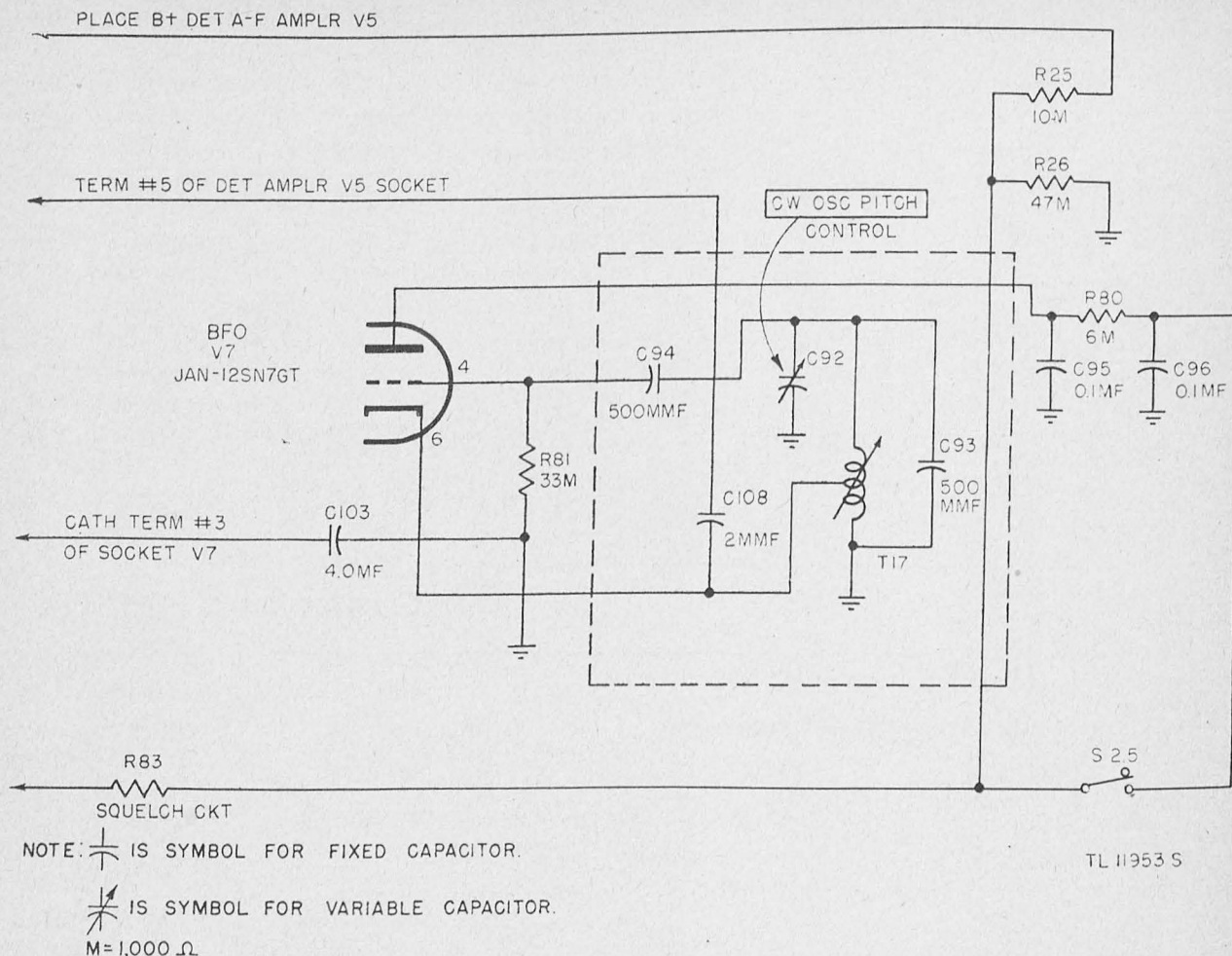
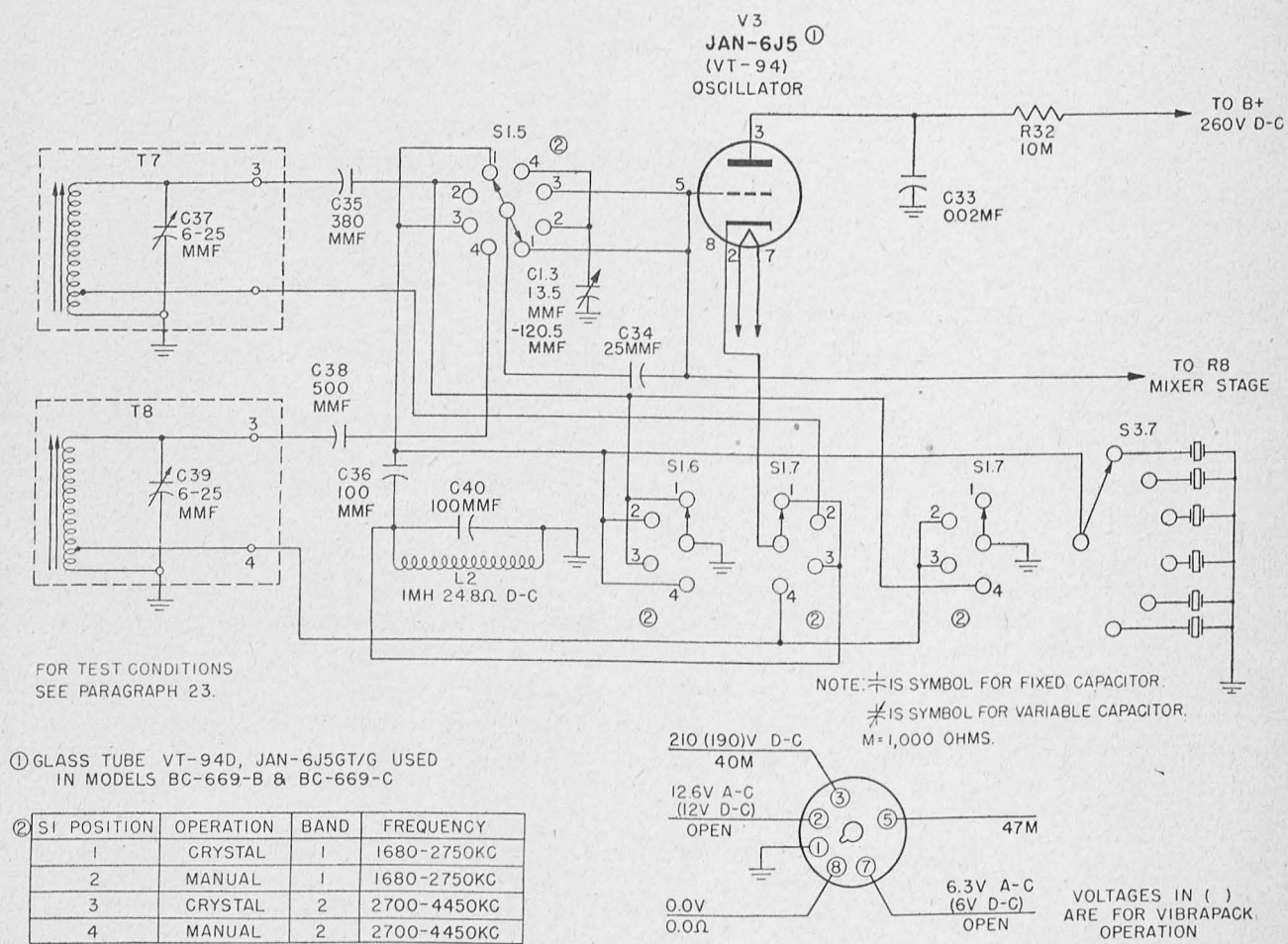


Figure 36. Radio Receiver and Transmitter BC-669-D, beat-frequency oscillator stage.

c. PARTS DATA (Model D) (Receiver.)

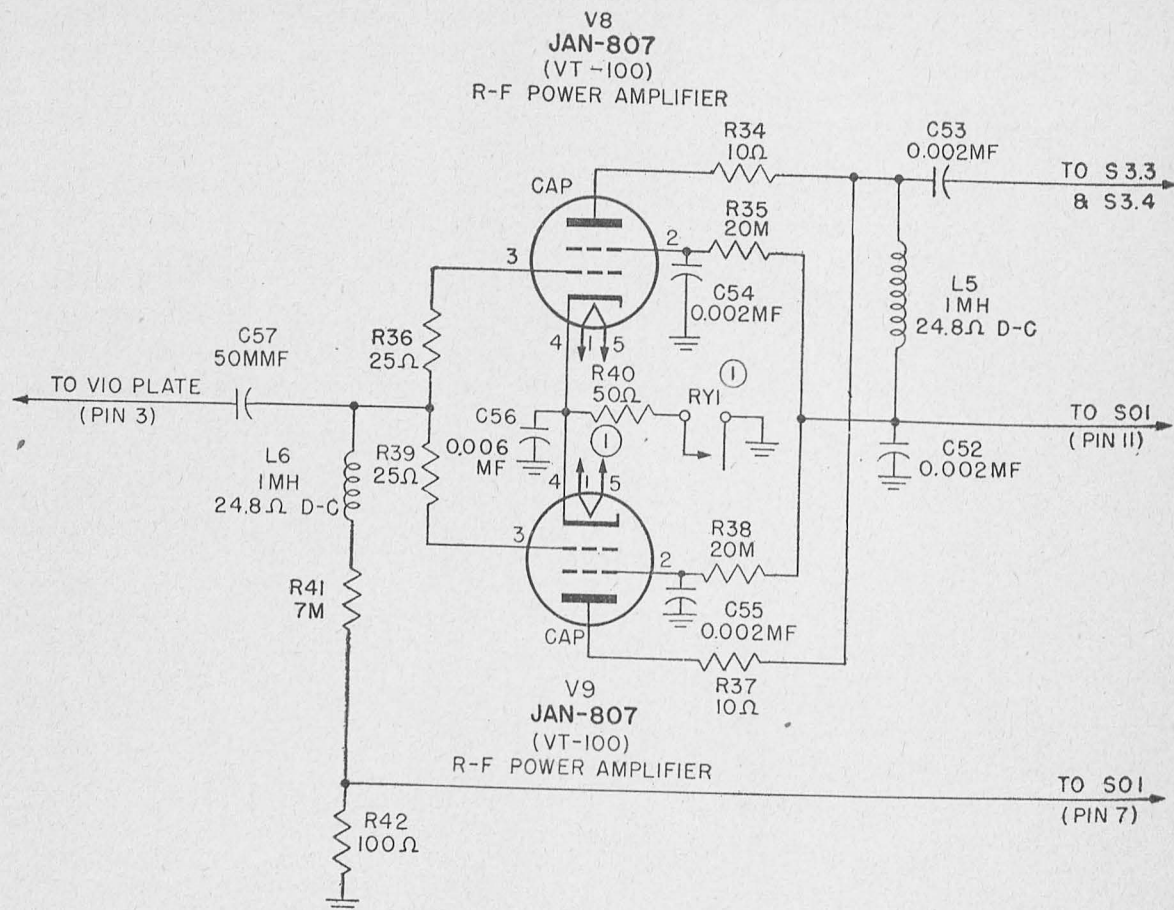
| Ref. symbol | Signal Corps stock No. | Name of part and description                                                             | Function                          |
|-------------|------------------------|------------------------------------------------------------------------------------------|-----------------------------------|
| C92 .....   | (*)                    |                                                                                          | Pitch control capacitor.          |
| C93 .....   | 3K2551143 .....        | CAPACITOR: fixed; silver mica; 500 mmf; $\pm 2\%$ ; 300 vdcw; JAN type CM25D50011G ..... | Padding capacitor.                |
| C94 .....   |                        | CAPACITOR: Same as C93 .....                                                             | Grid coupling capacitor.          |
| C95 .....   | 3DA100-112.1 ..        | CAPACITOR: fixed; paper; 0.1 mf $\pm 20\%$ ; 100 vdcw molded mica; type 345-21 .....     | Filter capacitor.                 |
| C96 .....   |                        | CAPACITOR: Same as C95 .....                                                             | Filter capacitor.                 |
| C103 .....  | 3DB4-165 .....         | CAPACITOR: fixed; paper; 4 mf $+14\%$ $-6\%$ ; 50 vdcw; Gudeman No. 7541 .....           | Cathode coupling capacitor.       |
| R25 .....   | 3Z6610-70 .....        | RESISTOR: fixed; wire-wound; 10,000 ohms $\pm 10\%$ ; 10 watt; Utah type VWQ .....       | Plate voltage-dropping resistor.  |
| R26 .....   | 3RC21BE473K ..         | RESISTOR: fixed; carbon; 47,000 ohms, $\pm 10\%$ ; 1 watt .....                          | Voltage regulating resistor.      |
| R80 .....   | 3RC21BE622 ...         | RESISTOR: fixed; carbon; 6,000 ohms, $\pm 10\%$ ; $\frac{1}{2}$ watt .....               | Resistance filter.                |
| R81 .....   | 3RC21BE333M ..         | RESISTOR: fixed; carbon; 33,000 ohms, $\pm 20\%$ ; $\frac{1}{2}$ watt .....              | Grid leak resistor.               |
| R83 .....   | 3RC21BE224K ..         | RESISTOR: fixed; carbon; 220,000 ohms, $\pm 10\%$ ; $\frac{1}{2}$ watt .....             | Squelch cathode voltage dropping. |
| T17 .....   | 2Z9641.182 .....       | COIL ASSEMBLY: radio; bfo; iron core; Erla No. 16117 .....                               | B-f-o plate inductance.           |
| S2.5 .....  | 3Z9825-62.170 ..       | SWITCH: rotary; 2 position; 6 pole; Erla No. 16101 ..                                    | Circuit selector.                 |
| V7 .....    | 2J12SN7GT ...          | TUBE: JAN-12SN7GT .....                                                                  | Oscillator tube.                  |

\* Indicates stock not available.

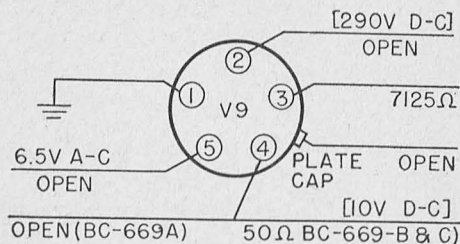
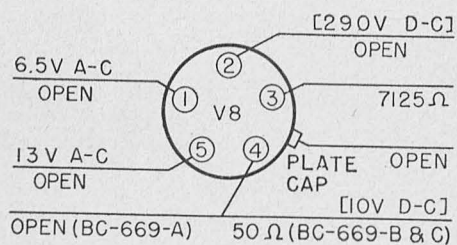


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Figure 37. Radio Receiver and Transmitter BC-669-(\*), transmitter oscillator stage, schematic diagram

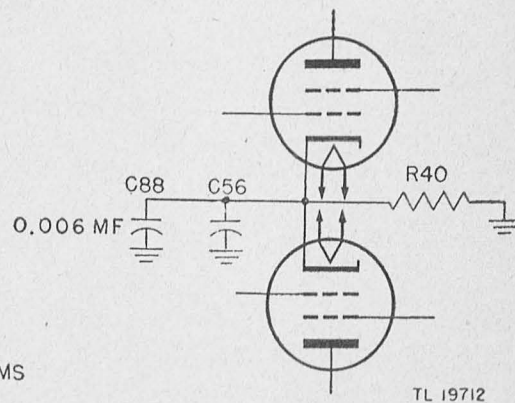


VALUES IN [ ] ARE FOR TRANSMIT OPERATION. TUBES NOT EXCITED UNDER VIBRA-PACK OPERATION.



① FOR TEST CONDITIONS SEE PARAGRAPH 23.

② ON MODEL BC-669-B & C CATHODE CIRCUIT CHANGED AS SHOWN IN SMALL DIAGRAM.



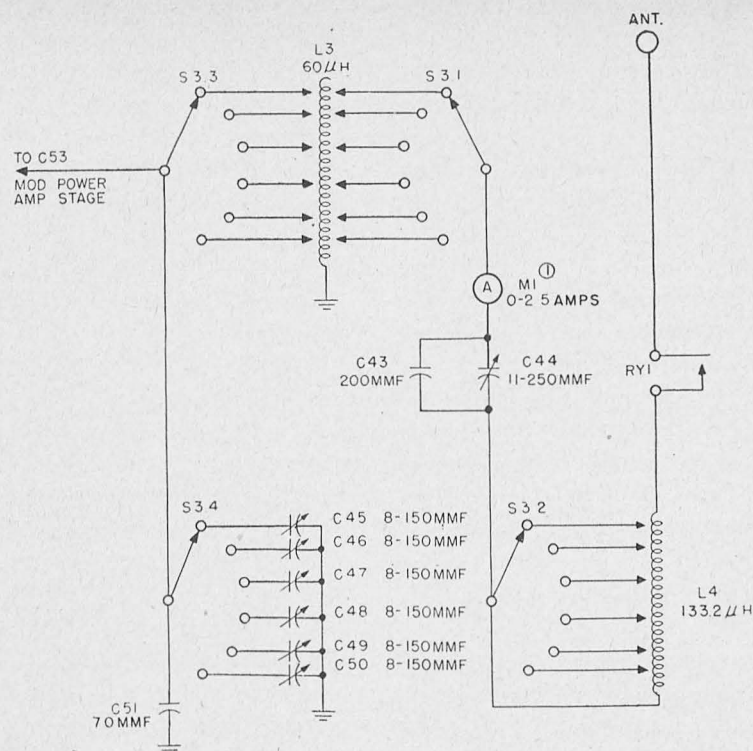
NOTE:

M = 1,000 OHMS

IS SYMBOL FOR FIXED CAPACITOR

IS SYMBOL FOR VARIABLE CAPACITOR

Figure 38. Radio Receiver and Transmitter BC-669-(\*), transmitter r-f amplifier stage, schematic diagram.



① ON BC-669-A, SOME UNITS  
HAVE METER MI CONNECTED  
ON THE ANTENNA SIDE OF COIL L4

NOTE:

⊢ IS SYMBOL FOR FIXED CAPACITOR

⊢ IS SYMBOL FOR VARIABLE CAPACITOR

TL 19713

Figure 39. Radio Receiver and Transmitter BC-669-(\*), transmitter antenna coupling stage, schematic diagram.

#### e. PARTS DATA.

| Ref. symbol  | Signal Corps stock No. | Name of part and description                                                               | Function                                                                          |
|--------------|------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| C43 .....    | 3D9200-37 .....        | CAPACITOR: 200 mmf $\pm 5\%$ ; 1,430 vacw; 3.5 amps r-f @ 3,000 kc; molded mica .....      | Shunt capacitor for C44.<br>Transmitter ant. tuning.<br>Transmitter ant. loading. |
| C44 .....    | 3D925CV-1 .....        | CAPACITOR: 11 mmf to 250 mmf; variable, air .....                                          |                                                                                   |
| L4 .....     | 3C4003-1 .....         | COIL ASSEMBLY, r-f: 133.2 mh; special .....                                                |                                                                                   |
| M1 .....     | 3F511 .....            | AMMETER: 0 to 2.5 amps r-f; thermocouple type; accuracy $\pm 2\%$ full scale to 6 mc ..... | Ant. current indicator.                                                           |
| RY1 A,C* ... | 2Z7638.3/1 .....       | RELAY: DPDT plus one set of normally open contacts; coil 115 v, 60 cps ac; special .....   | Antenna change-over.                                                              |
| RY1 B* ..... | 2Z7638.3/1 .....       | RELAY: DPDT plus one set of normally open contacts; coil 115 v, 60 cps ac; special .....   | Antenna change-over.                                                              |
| S3.2 .....   | 3Z9825-62.25 ...       | SWITCH ASSEMBLY: single-section ceramic; 6-position through 360° .....                     | L4 switching.                                                                     |

\* Applies only to models indicated.

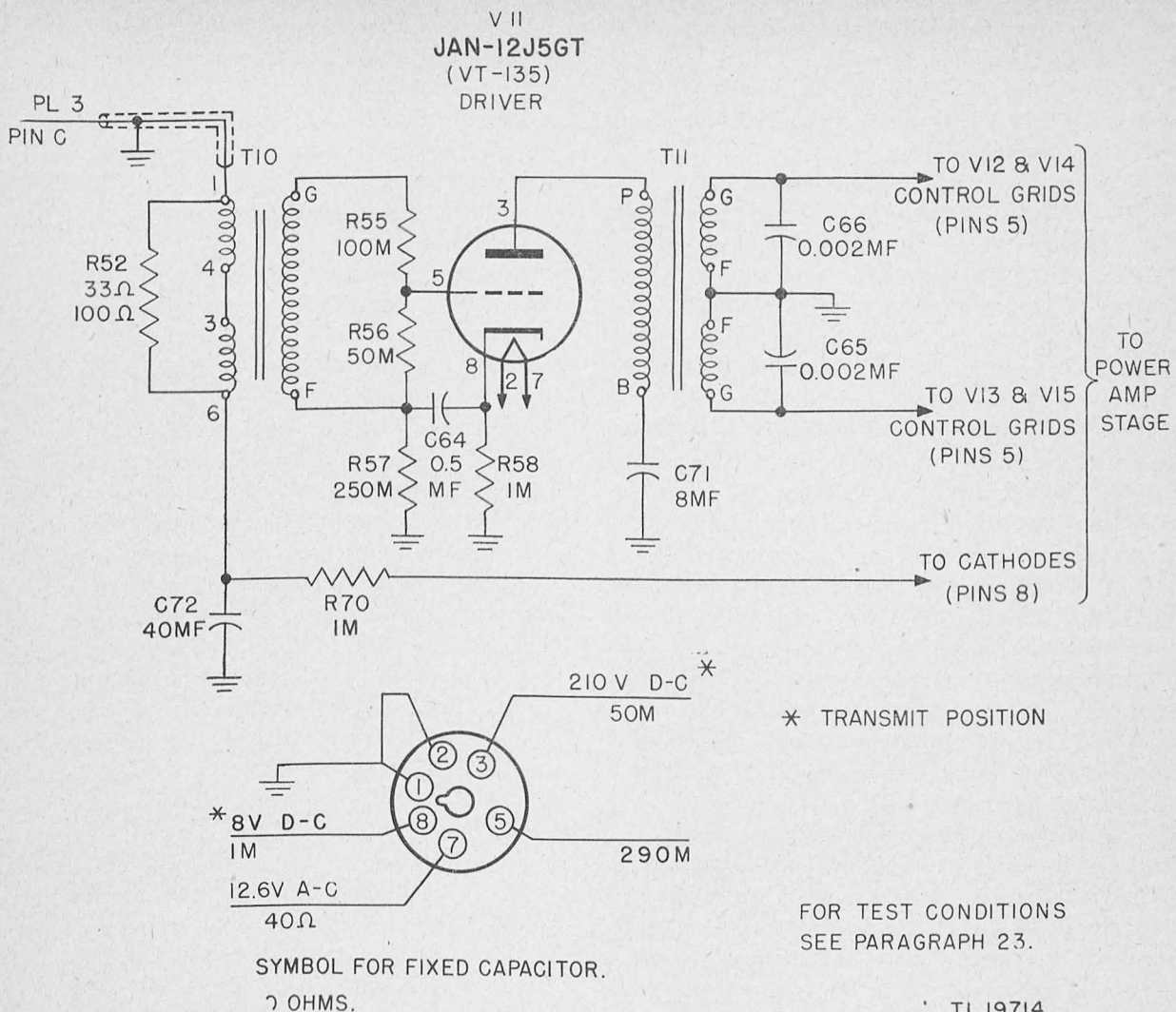


Figure 40. Radio Receiver and Transmitter BC-669-(\*), modulator low-level microphone voltage amplifier stage, schematic diagram.

#### c. PARTS DATA.

| Ref. symbol | Signal Corps stock No. | Name of part and description                                                                                  | Function                                |
|-------------|------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| C64         | 3DA500-73              | CAPACITOR: 0.5 mf +14% -6%; 200 vdcw; paper, oil-filled; bathtub type                                         | V11 cathode bypass.                     |
| C72         | 3DB40-17               | CAPACITOR: dual; 40 mf, +65% -0; 100 vdcw; dry electrolytic tubular 5-pin plug-in                             | V12, V13, V14, V15, cathode bypass.     |
| R52         | 3Z6010-18              | RESISTOR: 100 ohms ±10%; ½ watt; insulated wire-wound                                                         | T10 pri load.                           |
| R52         | 3Z6010-18              | RESISTOR: 35 ohms ±10%; 2 watts; insulated carbon                                                             | T10 pri load.                           |
| R55         | 3Z6010-18              | RESISTOR: 100,000 ohms ±10%; ½ watt; insulated carbon                                                         | V11 input voltage divider.              |
| R56         | 3Z6650-45              | RESISTOR: 50,000 ohms ±10%; ½ watt; insulated carbon                                                          | V11 grid load.                          |
| R57         | 3Z6725-17              | RESISTOR: 250,000 ohms ±10%; ½ watt; insulated carbon                                                         | V11 grid circuit filter.                |
| R58         | 3Z4525                 | RESISTOR: 1,000 ohms ±10%; ½ watt; insulated carbon                                                           | V11 cathode bias.                       |
| R70         | 3Z6100-34              | RESISTOR: 1,000 ohms ±10%; 2 watts; insulated wire-wound                                                      | Mic voltage filter and dropping.        |
| T10         | 2Z9631.45              | TRANSFORMER: microphone; pri to match 400-ohm carbon microphone; sec to match single class A grid; metal case | Microphone T-24- ( ) input to V11 grid. |
| V11         |                        | TUBE: JAN-12J5GT, VT-135                                                                                      | Modulator driver.                       |
| V11 B,C*    |                        | TUBE: JAN-12J5GT, VT-135                                                                                      | Modulator driver.                       |

\* Applies only to models indicated.

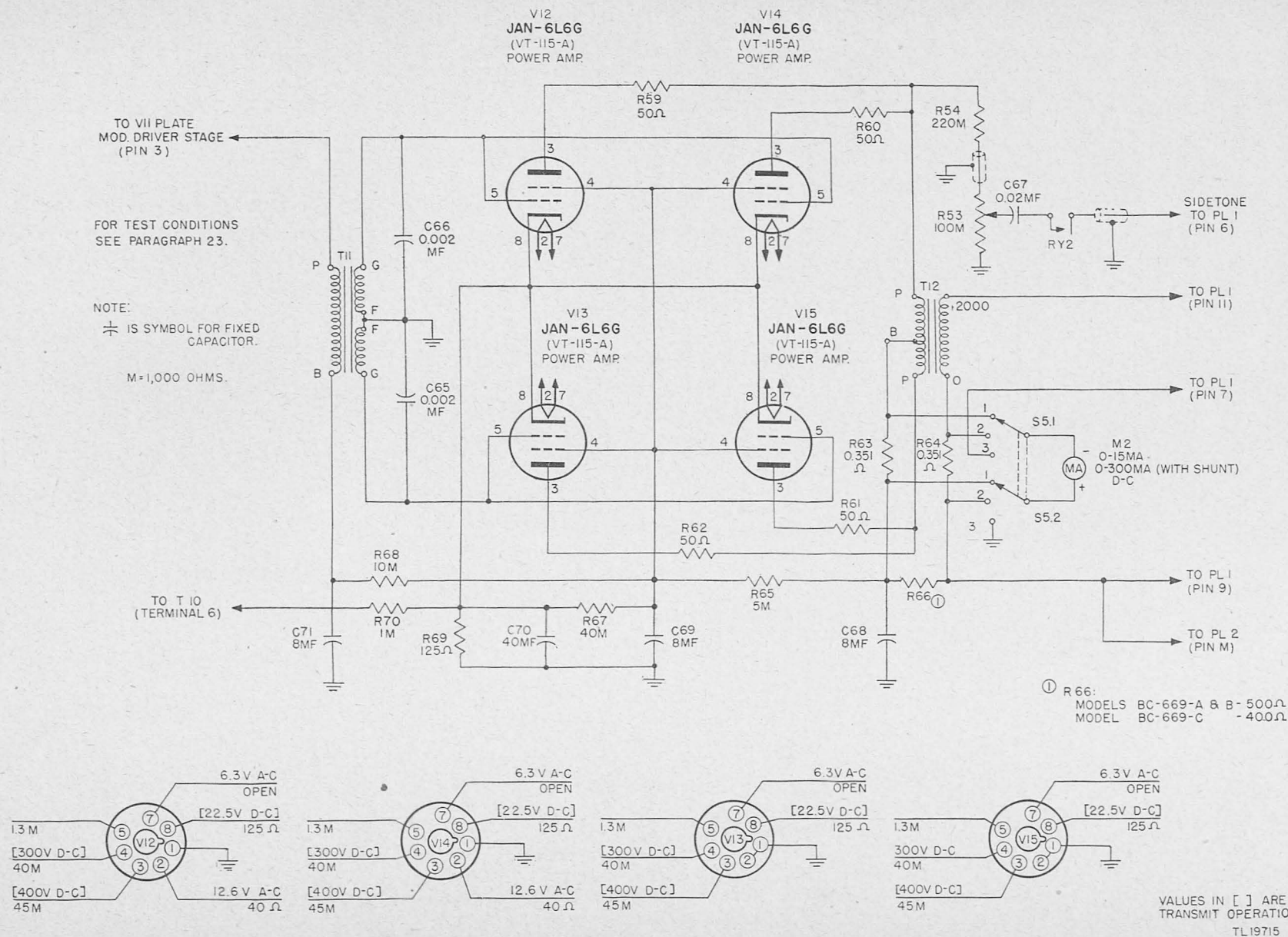


Figure 41. Radio Receiver and Transmitter BC-669-(\*), modulator class AB1-af power-amplifier stage, schematic diagram

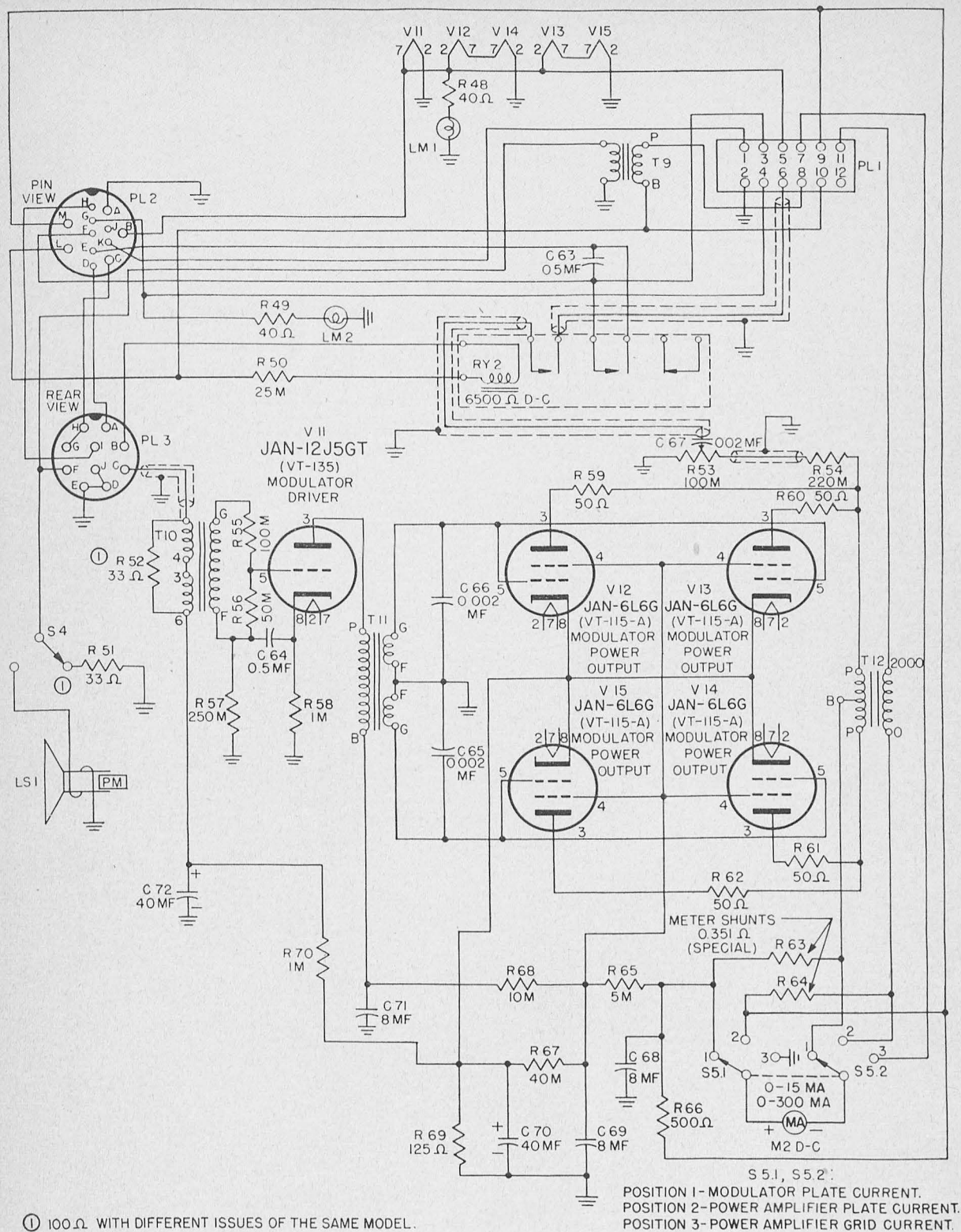


Figure 48. Radio Receiver and Transmitter BC-669-A, modulator section, schematic diagram.

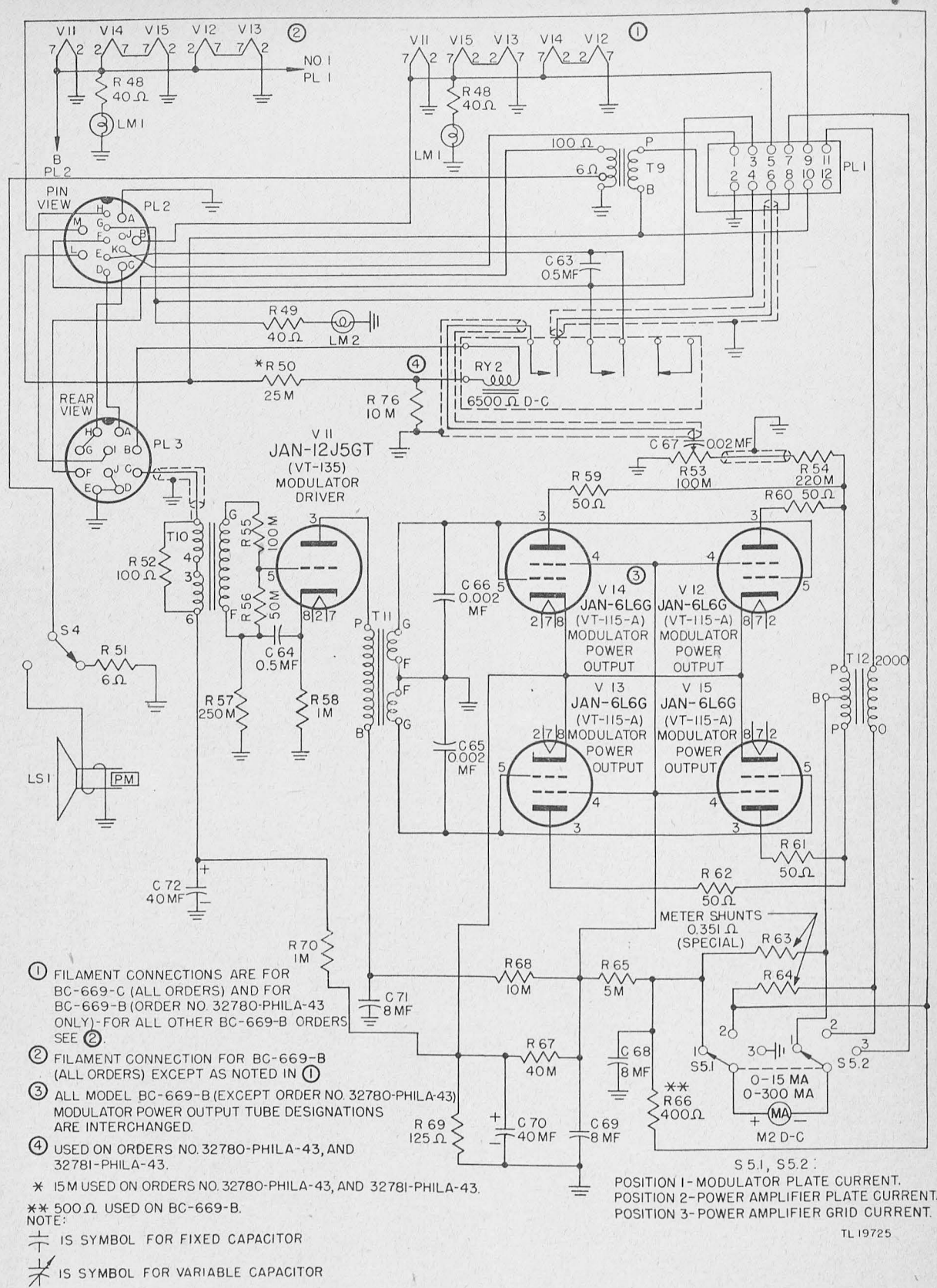
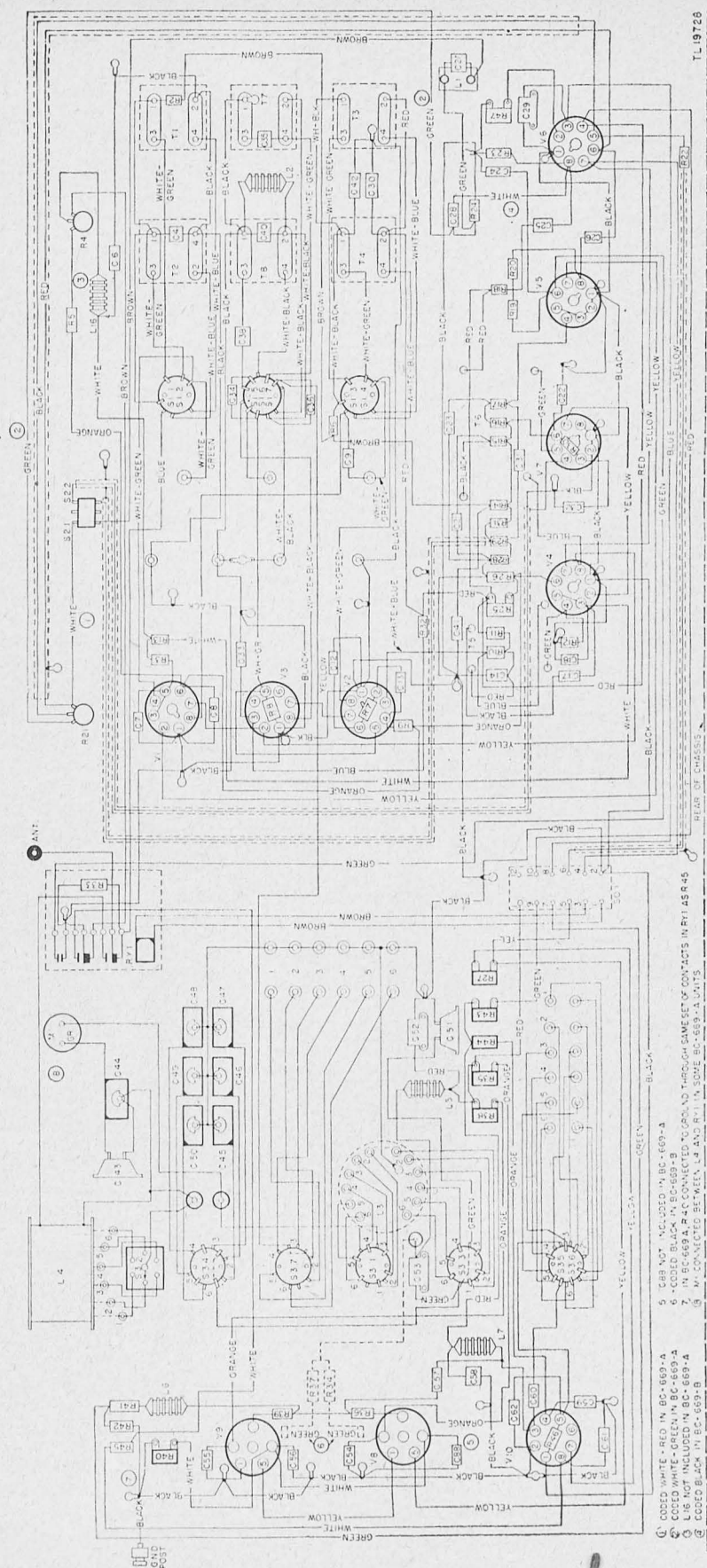


Figure 49. Radio Receiver and Transmitter BC-669-B and -C, modulator section, schematic diagram.



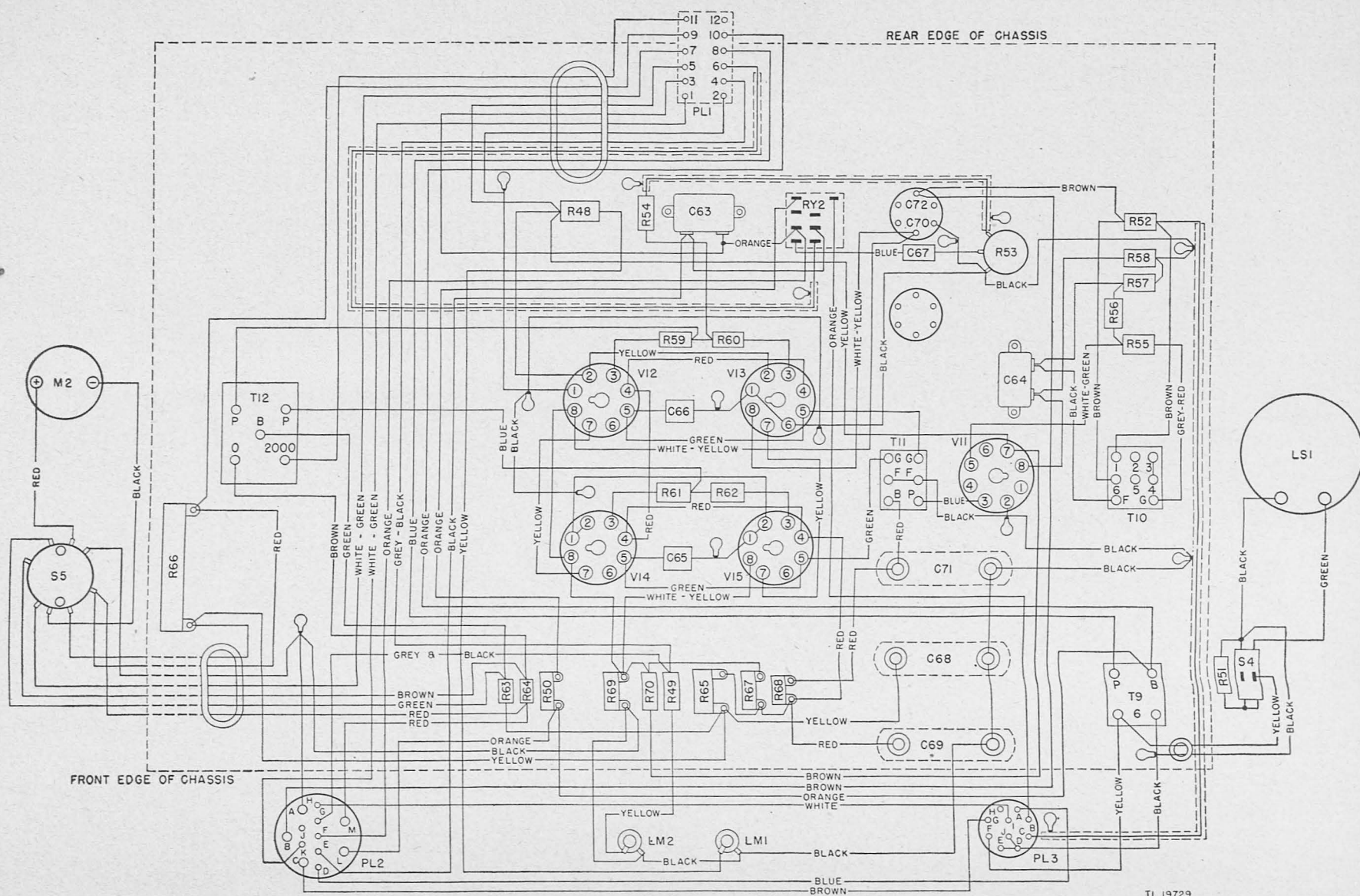


Figure 51. Radio Receiver and Transmitter BC-669-A, modulator section, practical wiring diagram.

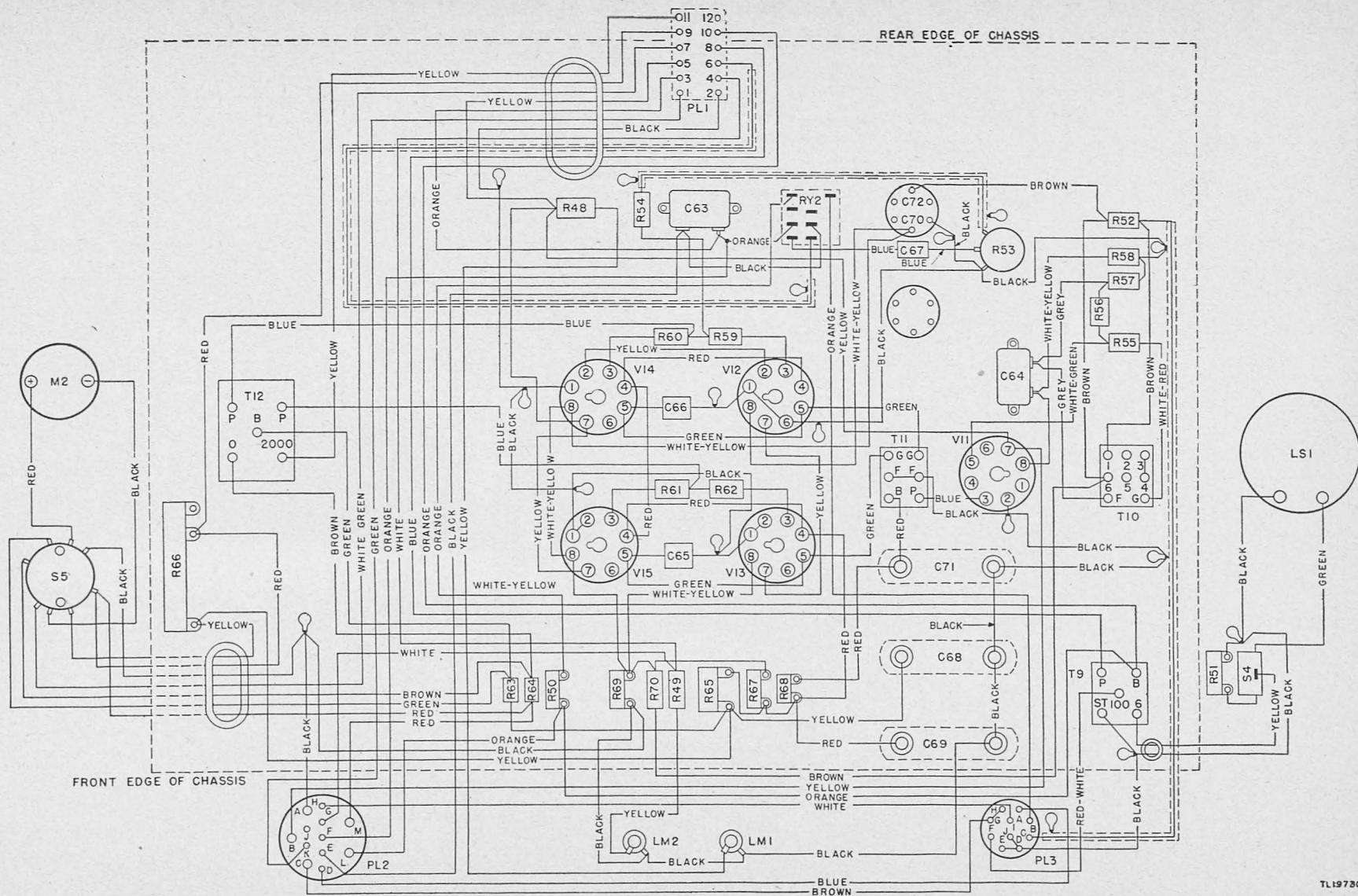


Figure 52. Radio Receiver and Transmitter BC-669-B, modulator section, practical wiring diagram.

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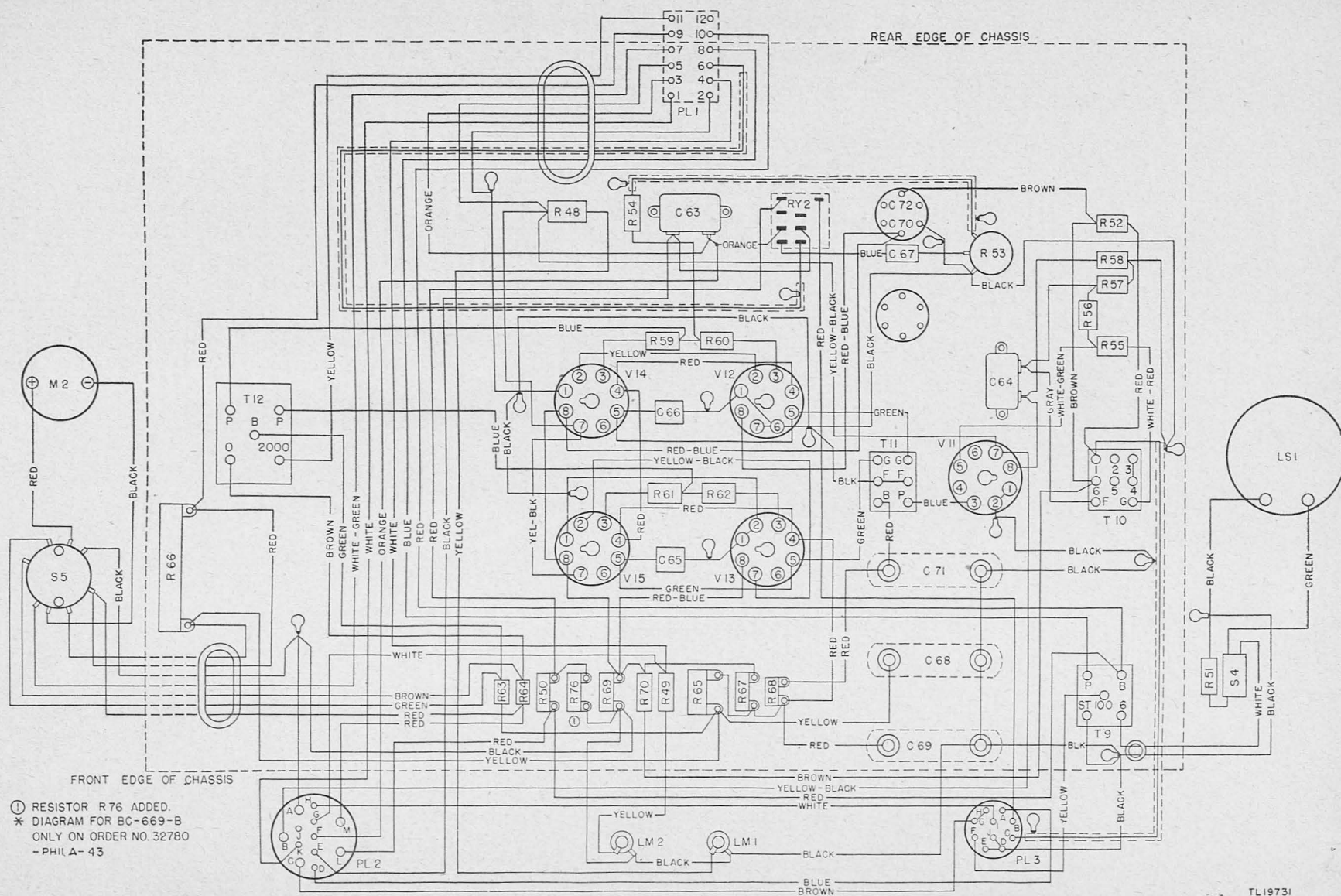


Figure 53. Radio Receiver and Transmitter BC-669-C, modulator section, practical wiring diagram.

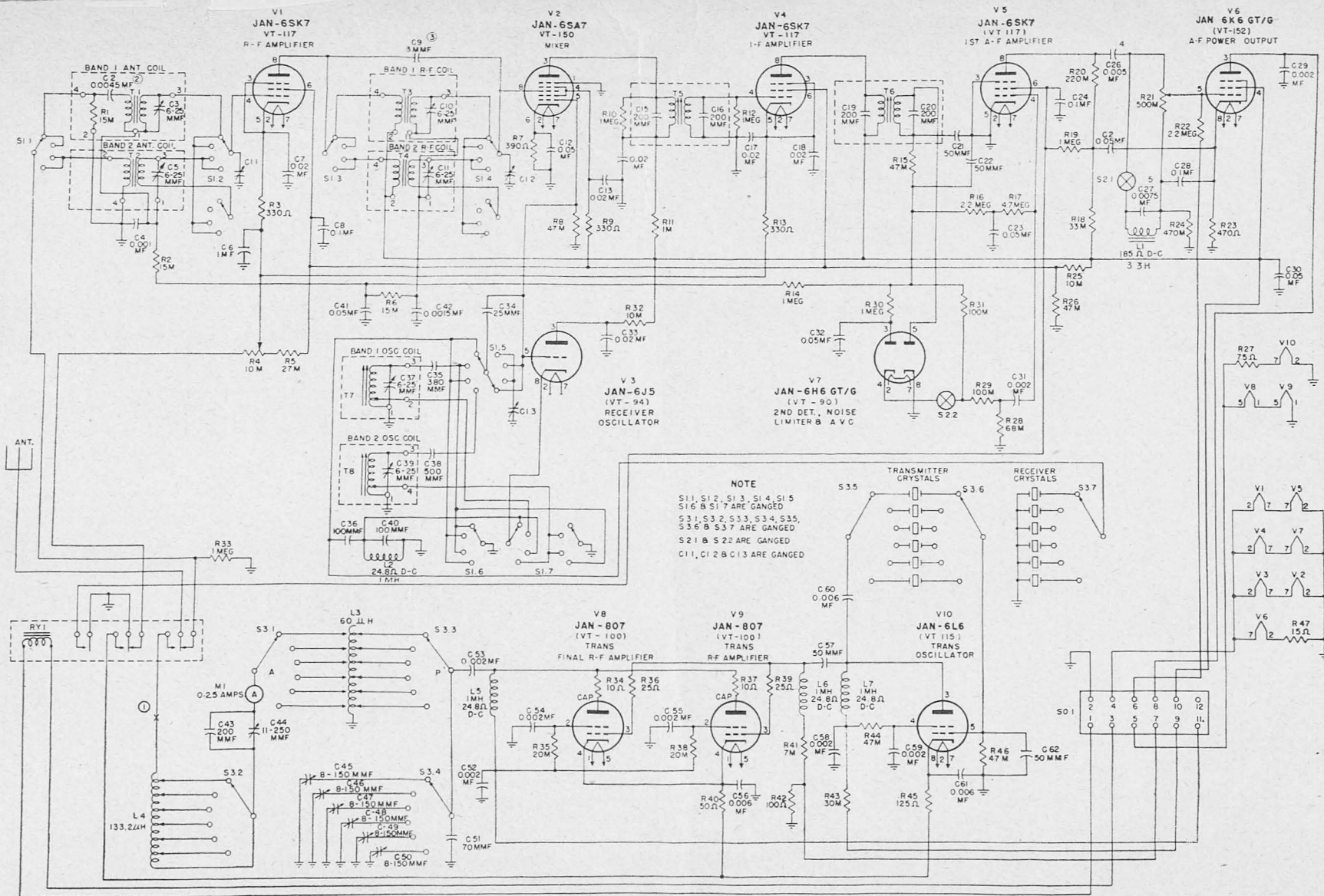
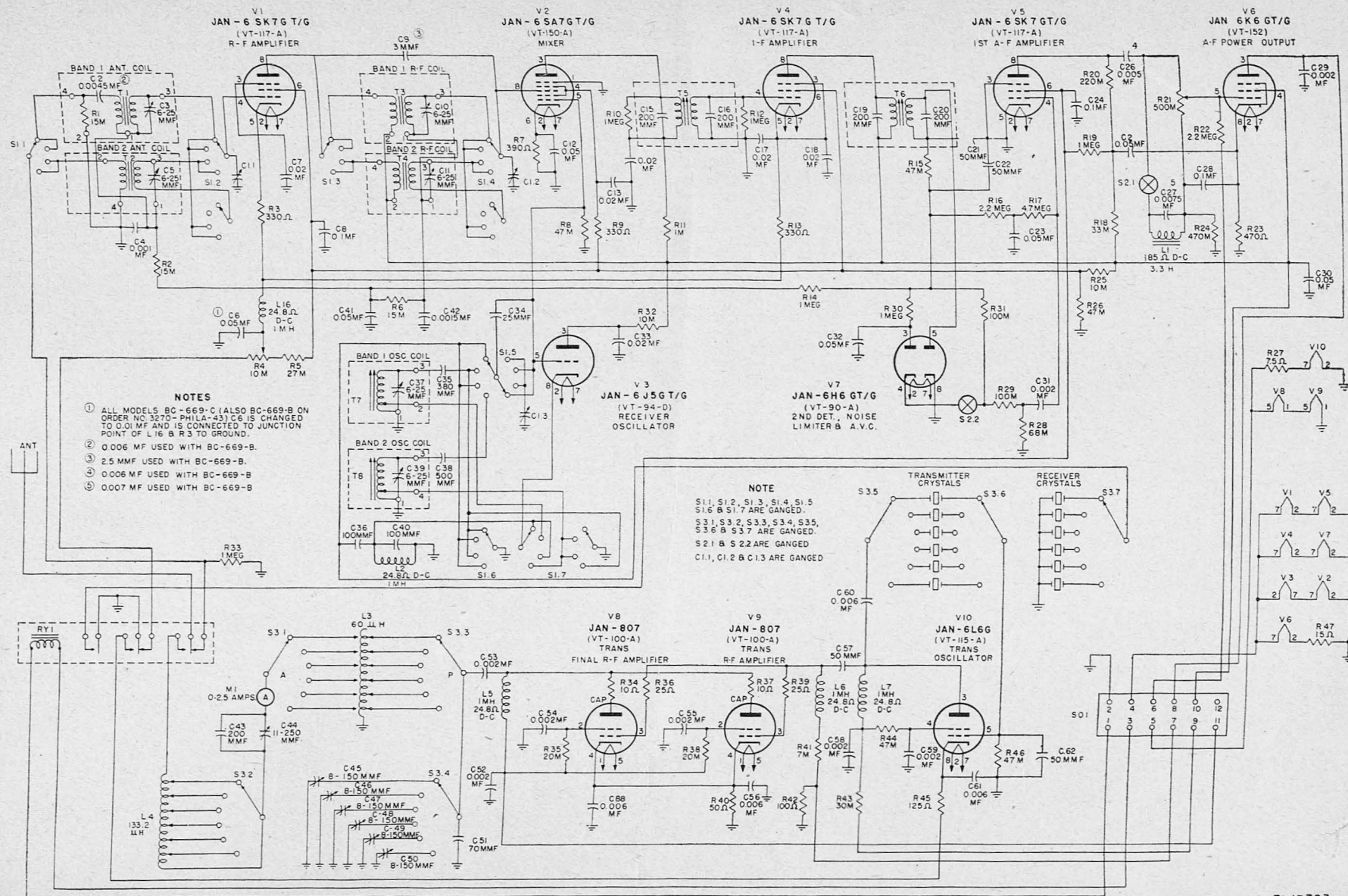


Figure 54. Radio Receiver and Transmitter BC-669-A, schematic diagram.



NOTE:  $\text{—}$  IS SYMBOL FOR FIXED CAPACITOR.

$\text{—}$  IS SYMBOL FOR VARIABLE CAPACITOR.

Figure 55. Radio Receiver and Transmitter BC-669-B and -C, schematic diagram.

| REF SYMBOL | VALUE                  | RATING   |
|------------|------------------------|----------|
| C1.1       | 107.6 MMF              |          |
| C1.2       | 107.6 MMF              |          |
| C1.3       | 107.6 MMF              | 300 VDCW |
| C2         | 0.018 MF               |          |
| C3         | 6-25 MMF (VARIABLE)    | 500 VDCW |
| C4         | 1,000 MMF              |          |
| C5         | 6-25 MMF (VARIABLE)    | 200 VDCW |
| C6         | BC-669-A, 1 MF         | 400 VDCW |
|            | BC-669-B, 0.05 MF      | 400 VDCW |
|            | BC-669-C, 0.01 MF      | 400 VDCW |
|            | 0.02 MF                | 400 VDCW |
|            | 0.1 MF                 | 500 VDCW |
| C7         | BC-669-A AND -C, 3 MMF | 500 VDCW |
| C8         | BC-669-B, 2.5 MMF      | 500 VDCW |
| C9         | 6-25 MMF (VARIABLE)    | 400 VDCW |
| C10        | 6-25 MMF (VARIABLE)    | 400 VDCW |
| C11        | 0.05 MF                | 600 VDCW |
| C12        | 0.02 MF                | 500 VDCW |
| C13        | 0.02 MF                | 400 VDCW |
| C14        | 200 MMF                | 500 VDCW |
| C15        | 200 MMF                | 400 VDCW |
| C16        | 0.02 MF                | 400 VDCW |
| C17        | 0.02 MF                | 400 VDCW |
| C18        | 200 MMF                | 500 VDCW |
| C19        | 200 MMF                | 500 VDCW |
| C20        | 50 MMF                 | 400 VDCW |
| C21        | 50 MMF                 | 400 VDCW |
| C22        | 50 MMF                 | 400 VDCW |
| C23        | 50 MMF                 | 400 VDCW |
| C24        | 50 MMF                 | 400 VDCW |
| C25        | 50 MMF                 | 400 VDCW |
| C26        | 50 MMF                 | 400 VDCW |
| C27        | 50 MMF                 | 400 VDCW |
| C28        | 50 MMF                 | 400 VDCW |
| C29        | 50 MMF                 | 400 VDCW |
| C30        | 50 MMF                 | 400 VDCW |
| C31        | 50 MMF                 | 400 VDCW |
| C32        | 50 MMF                 | 400 VDCW |
| C33        | 50 MMF                 | 400 VDCW |
| C34        | 50 MMF                 | 400 VDCW |
| C35        | 50 MMF                 | 400 VDCW |
| C36        | 50 MMF                 | 400 VDCW |
| C37        | 50 MMF                 | 400 VDCW |
| C38        | 50 MMF                 | 400 VDCW |
| C39        | 50 MMF                 | 400 VDCW |
| C40        | 50 MMF                 | 400 VDCW |
| C41        | 50 MMF                 | 400 VDCW |
| C42        | 50 MMF                 | 400 VDCW |
| C43        | 50 MMF                 | 400 VDCW |
| C44        | 50 MMF                 | 400 VDCW |
| C45        | 50 MMF                 | 400 VDCW |
| C46        | 50 MMF                 | 400 VDCW |
| C47        | 50 MMF                 | 400 VDCW |
| C48        | 50 MMF                 | 400 VDCW |
| C49        | 50 MMF                 | 400 VDCW |
| C50        | 50 MMF                 | 400 VDCW |
| C51        | 50 MMF                 | 400 VDCW |
| C52        | 50 MMF                 | 400 VDCW |

| REF SYMBOL | VALUE     | RATING     |
|------------|-----------|------------|
| C53        | 2,000 MMF | 2,500 VDCW |
| C54        | 2,000 MMF | 2,500 VDCW |
| C55        | 2,000 MMF | 2,500 VDCW |
| C56        | 6,000 MMF | 400 VDCW   |
| C57        | 50 MMF    | 500 VDCW   |
| C58        | 2,000 MMF | 600 VDCW   |
| C59        | 2,000 MMF | 600 VDCW   |
| C60        | 6,000 MMF | 600 VDCW   |
| C61        | 6,000 MMF | 600 VDCW   |
| C62        | 50 MMF    | 500 VDCW   |
| C63        | 6,000 MMF | 600 VDCW   |

| REF SYMBOL | VALUE                        | RATING |
|------------|------------------------------|--------|
| R1         | 15,000 OHMS                  | 1/2 W  |
| R2         | 15,000 OHMS                  | 1/2 W  |
| R3         | 330 OHMS                     | 1/2 W  |
| R4         | 10,000 OHMS (POTENTIOMETER)  | 1 W    |
| R5         | 27,000 OHMS                  | 1/2 W  |
| R6         | 15,000 OHMS                  | 1/2 W  |
| R7         | 390 OHMS                     | 1/2 W  |
| R8         | 47,000 OHMS                  | 1/2 W  |
| R9         | 330 OHMS                     | 1/2 W  |
| R10        | 1 MEGOHM                     | 1/2 W  |
| R11        | 1 MEGOHM                     | 1/2 W  |
| R12        | 330 OHMS                     | 1/2 W  |
| R13        | 1 MEGOHM                     | 1/2 W  |
| R14        | 1 MEGOHM                     | 1/2 W  |
| R15        | 47,000 OHMS                  | 1/2 W  |
| R16        | 2.2 MEGOHMS                  | 1/2 W  |
| R17        | 4.7 MEGOHMS                  | 1/2 W  |
| R18        | 33,000 OHMS                  | 1/2 W  |
| R19        | 1 MEGOHM                     | 1/2 W  |
| R20        | 220,000 OHMS                 | 1/2 W  |
| R21        | 500,000 OHMS (POTENTIOMETER) | 1/2 W  |
| R22        | 2.2 MEGOHMS                  | 2 W    |
| R23        | 470 OHMS                     | 1/2 W  |
| R24        | 470,000 OHMS                 | 1/2 W  |
| R25        | 10,000 OHMS                  | 1 W    |
| R26        | 47,000 OHMS                  | 1 W    |
| R27        | 7.5 OHMS                     | 10 W   |
| R28        | 68,000 OHMS                  | 1/2 W  |
| R29        | 100,000 OHMS                 | 1/2 W  |
| R30        | 1 MEGOHM                     | 1/2 W  |
| R31        | 100,000 OHMS                 | 2 W    |
| R32        | 10,000 OHMS                  | 2 W    |
| R33        | 1 MEGOHM                     | 2 W    |
| R34        | 10 OHMS                      | 2 W    |
| R35        | 20,000 OHMS                  | 10 W   |
| R36        | 25 OHMS                      | 2 W    |
| R37        | 10 OHMS                      | 2 W    |
| R38        | 20,000 OHMS                  | 10 W   |
| R39        | 25 OHMS                      | 1/2 W  |
| R40        | 50 OHMS                      | 10 W   |
| R41        | 7,000 OHMS                   | 2 W    |
| R42        | 100 OHMS                     | 1/2 W  |
| R43        | 15,000 OHMS                  | 10 W   |
| R44        | 47,000 OHMS                  | 1 W    |
| R45        | 125 OHMS                     | 1/2 W  |
| R46        | 47,000 OHMS                  | 1 W    |
| R47        | 15 OHMS                      | 10 W   |

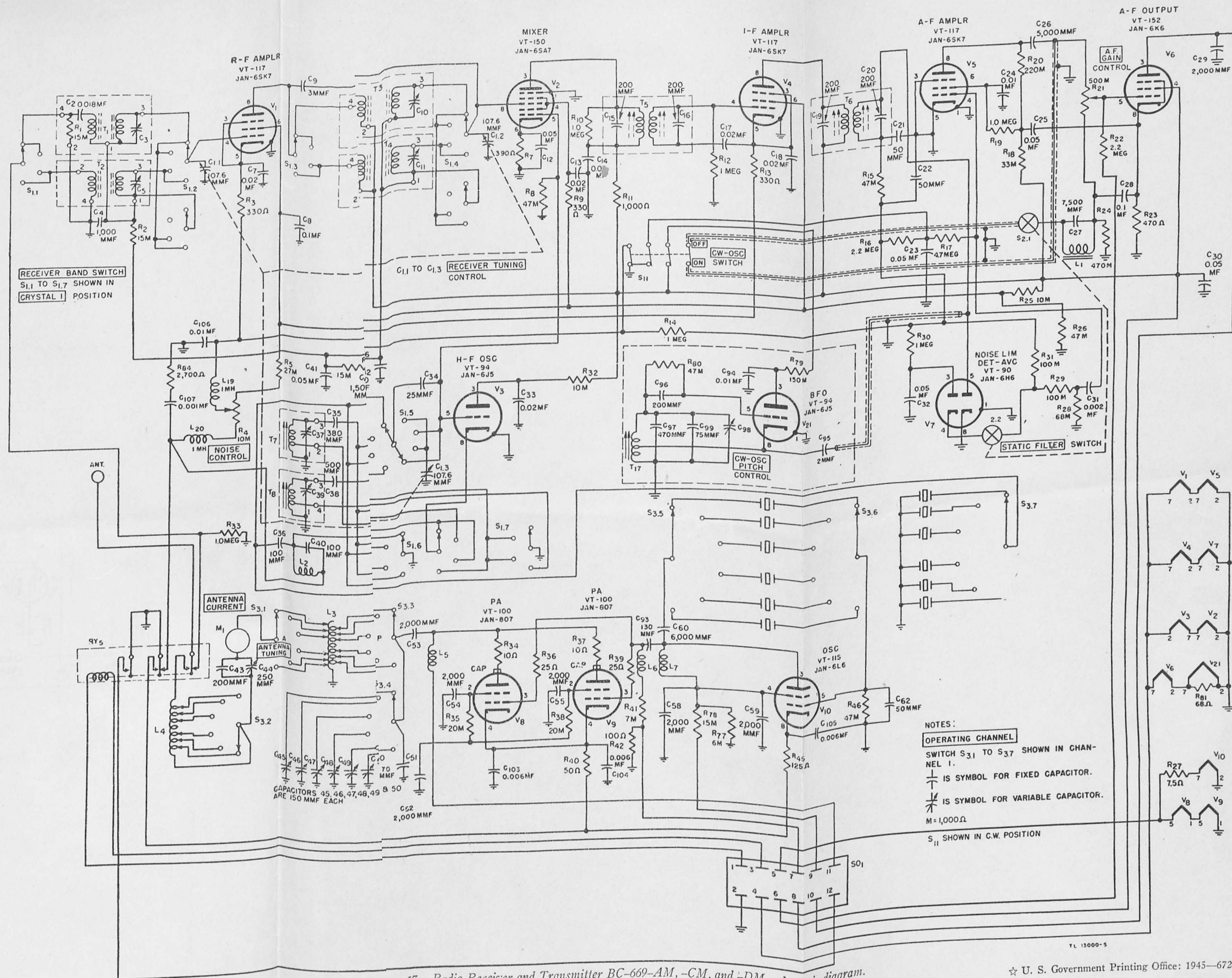


Figure 57. Radio Receiver and Transmitter BC-669-AM, -CM, and -DM, schematic diagram.