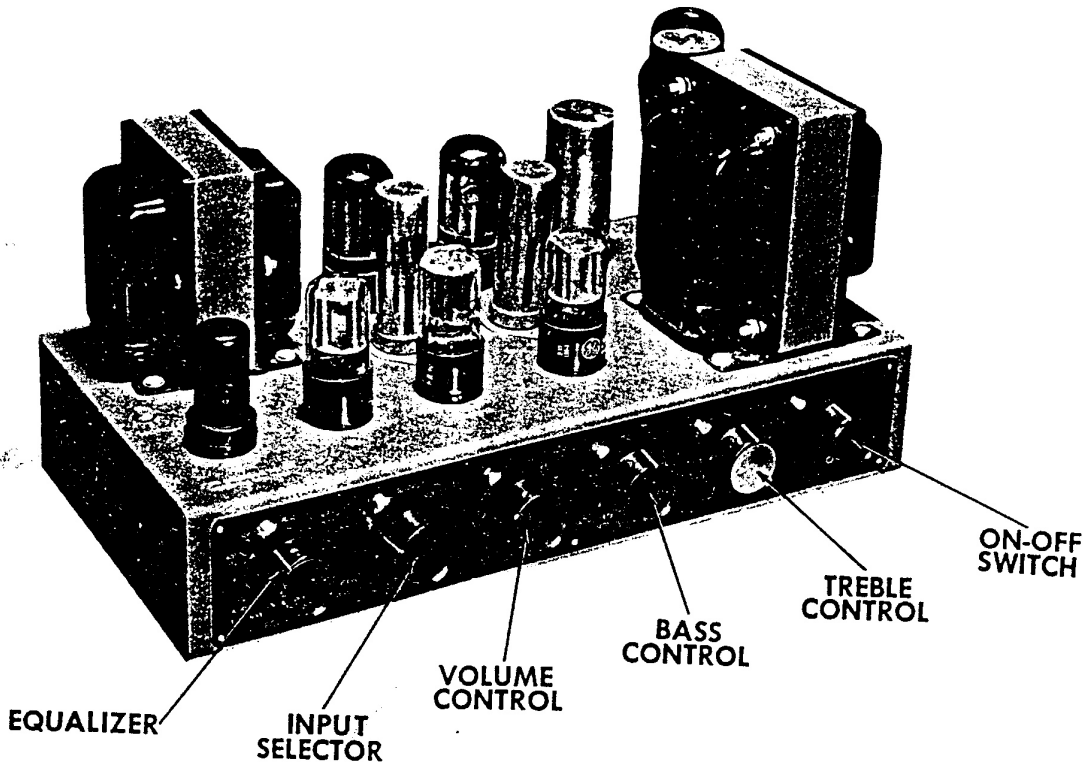




MODEL 2200



BELL SOUND
MODEL 2200

| | |
|---------------|--|
| TRADE NAME | Bell Sound Model 2200 |
| MANUFACTURER | Bell Sound Systems, Inc., 555 Marion Rd., Columbus, Ohio |
| TYPE SET | AC Operated 7 Channel Audio Amplifier |
| TUBES (Seven) | Types 12SC7 Pre. Amp., 6SL7GT AF Amp., 6SN7GTA Phase Inv., 6SL7GT Driver, (2) 5881 Audio Output, 5U4G LV Rectifier |
| POWER SUPPLY | 105-125 Volts AC-50/60 Cycles RATING 1.24 Amp @ 117 Volts AC |

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 the particular type of replacement part listed."
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DATE 6-53

SET 207

FOLDER 1

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA | | | RTMA BASE TYPE | NOTES |
|----------|----------------|---------------------|----------------------|-------------|----------------|-------|
| | | Bell Sound PART No. | STANDARD REPLACEMENT | REPLACEMENT | | |
| V1 | Pre Amplifier | 12SC7 | 12SC7 | 9S | | |
| V2 | AF Amplifier | 6SL7GT | 6SL7GT | 8BD | | |
| V3 | Phase Inverter | 6SN7GTA | 6SN7GTA | 8BD | | |
| V4 | Driver | 6SL7GT | 6SL7GT | 7AC | | |
| V5 | Audio Output | 5881 | 5881 | 7AC | | |
| V6 | Audio Output | 5881 | 5881 | 7AC | | |
| V7 | Rectifier | 5U4G | 5U4G | 5T | | |

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 CAP. VOLT | REPLACEMENT DATA | | | | | NOTES |
|----------|------------------|---------------------|------------------|--------------------|-------------------------|---------------|----------|
| | | Bell Sound PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBIER PART No. | ERIE PART No. | |
| C1A | 20 | AFH4-14 | | | D013 | FP444 | TVL-4783 |
| C1B | 450 | | | | | | |
| C1C | 450 | | | | | | |
| C1D | 450 | | | | | | |
| C2A | 20 | | | | | | |
| C2B | 450 | | | | | | |
| C2C | 50 | | | | | | |
| C3A | 20 | | | | | | |
| C3B | 450 | | | | | | |
| C4 | 150 | | | | | | |
| C5 | 25 | | | | | | |
| C6 | 10000 | | | | | | |
| C7 | 500 | | | | | | |
| C8 | 500 | | | | | | |
| C9 | 500 | | | | | | |
| C10 | 500 | | | | | | |
| C11 | 470 | | | | | | |
| C12 | 45 | | | | | | |
| C13 | 45 | | | | | | |
| C14 | 47 | | | | | | |
| C15 | 47 | | | | | | |
| C16 | 47 | | | | | | |
| C17 | 47 | | | | | | |
| C18 | 200 | | | | | | |
| C19 | 200 | | | | | | |
| C20 | 100 | | | | | | |
| C21 | 100 | | | | | | |
| C22 | 100 | | | | | | |
| C23 | 100 | | | | | | |
| C24 | 100 | | | | | | |
| C25 | 100 | | | | | | |
| C26 | 100 | | | | | | |
| C27 | 100 | | | | | | |
| C28 | 100 | | | | | | |
| C29 | 100 | | | | | | |
| C30 | 100 | | | | | | |
| C31 | 100 | | | | | | |
| C32 | 100 | | | | | | |
| C33 | 100 | | | | | | |
| C34 | 100 | | | | | | |
| C35 | 100 | | | | | | |
| C36 | 100 | | | | | | |
| C37 | 100 | | | | | | |
| C38 | 100 | | | | | | |
| C39 | 100 | | | | | | |
| C40 | 100 | | | | | | |
| C41 | 100 | | | | | | |
| C42 | 100 | | | | | | |
| C43 | 100 | | | | | | |
| C44 | 100 | | | | | | |
| C45 | 100 | | | | | | |
| C46 | 100 | | | | | | |
| C47 | 100 | | | | | | |
| C48 | 100 | | | | | | |
| C49 | 100 | | | | | | |
| C50 | 100 | | | | | | |
| C51 | 100 | | | | | | |
| C52 | 100 | | | | | | |
| C53 | 100 | | | | | | |
| C54 | 100 | | | | | | |
| C55 | 100 | | | | | | |
| C56 | 100 | | | | | | |
| C57 | 100 | | | | | | |
| C58 | 100 | | | | | | |
| C59 | 100 | | | | | | |
| C60 | 100 | | | | | | |
| C61 | 100 | | | | | | |
| C62 | 100 | | | | | | |
| C63 | 100 | | | | | | |
| C64 | 100 | | | | | | |
| C65 | 100 | | | | | | |
| C66 | 100 | | | | | | |
| C67 | 100 | | | | | | |
| C68 | 100 | | | | | | |
| C69 | 100 | | | | | | |
| C70 | 100 | | | | | | |
| C71 | 100 | | | | | | |
| C72 | 100 | | | | | | |
| C73 | 100 | | | | | | |
| C74 | 100 | | | | | | |
| C75 | 100 | | | | | | |
| C76 | 100 | | | | | | |
| C77 | 100 | | | | | | |
| C78 | 100 | | | | | | |
| C79 | 100 | | | | | | |
| C80 | 100 | | | | | | |
| C81 | 100 | | | | | | |
| C82 | 100 | | | | | | |
| C83 | 100 | | | | | | |
| C84 | 100 | | | | | | |
| C85 | 100 | | | | | | |
| C86 | 100 | | | | | | |
| C87 | 100 | | | | | | |
| C88 | 100 | | | | | | |
| C89 | 100 | | | | | | |
| C90 | 100 | | | | | | |
| C91 | 100 | | | | | | |
| C92 | 100 | | | | | | |
| C93 | 100 | | | | | | |
| C94 | 100 | | | | | | |
| C95 | 100 | | | | | | |
| C96 | 100 | | | | | | |
| C97 | 100 | | | | | | |
| C98 | 100 | | | | | | |
| C99 | 100 | | | | | | |
| C100 | 100 | | | | | | |

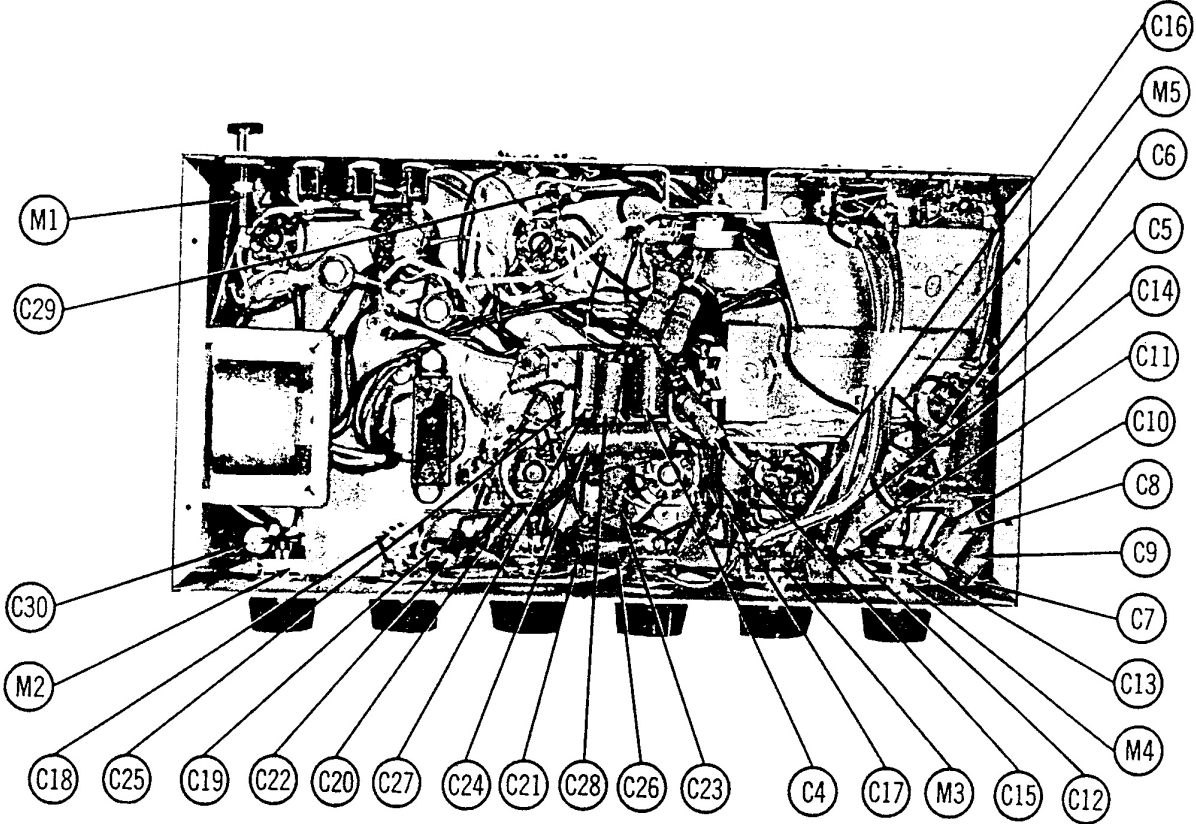
Note: Some models use 1 MFD in this application.

CONTROLS

| ITEM No. | RATING RESIST. ANCE | WAITS | REPLACEMENT DATA | | | | | INSTALLATION NOTES |
|----------|---------------------|-------|---------------------|--------------|--------------------|--------------------|-----------------|------------------------|
| | | | Bell-Sound PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | MALORY PART No. | |
| R1 | 3 Meg | | B20068P14 | | | | | Treble |
| R2 | 1 Meg | | B20068P13 | | | | | Base |
| R3 | 250KΩ | | B20068P12 | | | | | Volume |
| R4 | 100Ω | 2 | B20068P15 | W-100 | A43-100 | VK-121 | R100L | Balance-Wire Wound |
| R5 | 100Ω | 2 | B20068P15 | Not Req. | FKS-1/4 | Not Req. | Not Req. | Attach to R4A |
| R6 | 100Ω | 2 | B20068P15 | Not Req. | A43-1/4 | VK-121 | R100L | Hum Balance-Wire Wound |
| R7 | 100Ω | 2 | B20068P15 | Not Req. | FKS-1/4 | Not Req. | Not Req. | Attach to R5A |

* Open in center-Approximately 3 Meg on one side and 500KΩ on the other side.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

| ITEM No. | RATING | | REPLACEMENT DATA | | ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|----------|----------|------|----------------------|--------------|----------|----------|------|----------------------|--------------|-------|
| | OHMS | WATT | Bell. Sound PART No. | IRC PART No. | | OHMS | WATT | Bell. Sound PART No. | IRC PART No. | |
| R6 | 150KΩ | | | BTS-190K | R33 | 330KΩ-5% | | BTS-330K-5% | | |
| R7 | 47KΩ | | | BTS-47K | R34 | 33KΩ-5% | | BTS-33K-5% | | |
| R8 | 1.2Meg | | | BTS-1.2Meg | R35 | 33KΩ-5% | | BTS-33K-5% | | |
| R9 | 27KΩ | | | BTS-27K | R36 | 10KΩ | | BTS-10K | | |
| R10 | 10KΩ | | | BTS-10K | R37 | 3300Ω | | BTS-3300 | | |
| R11 | 27KΩ | | | BTS-27K | R38 | 100KΩ | | BTS-100K | | |
| R12 | 10Meg | | | BTS-10Meg | R39 | 100Ω-5% | | BTS-100 | | |
| R13 | 27KΩ | | | BTS-27K | R40 | 6800Ω-5% | | BTS-6800-5% | | |
| R14 | 27KΩ | | | BTS-27K | R41 | 3300Ω | | BTS-3300 | | |
| R15 | 1.2Meg | | | BTS-1.2Meg | R42 | 56KΩ-5% | | BTS-56K-5% | | |
| R16 | 1.2Meg | | | BTS-1.2Meg | R43 | 2.2Meg | | BTS-2.2Meg | | |
| R17 | 820KΩ | | | BTS-820K | R44 | 56KΩ-5% | | BTS-56K-5% | | |
| R18 | 820KΩ | | | BTS-820K | R45 | 1.2Meg | | BTS-1.2Meg | | |
| R19 | 10Meg | | | BTS-10Meg | R46 | 1500Ω | | BTS-1500 | | |
| R20 | 10Meg | | | BTS-10Meg | R47 | 3300Ω | | BTS-3300 | | |
| R21 | 240KΩ-5% | | | BTS-240K-5% | R48 | 1.2Meg | | BTS-1.2Meg | | |
| R22 | 270KΩ | | | BTS-270K | R49 | 100KΩ | | BTS-100K | | |
| R23 | 56KΩ-5% | | | BTS-56K-5% | R50 | 100KΩ | | BTS-100K | | |
| R24 | 15KΩ | | | BTS-15K | R51 | 470KΩ | | BTS-470K | | |
| R25 | 100KΩ | | | BTS-100K | R52 | 250Ω | | BTS-250 | | |
| R26 | 2200Ω | | | BTS-2200 | R53 | 250Ω | | BTS-250 | | |
| R27 | 100KΩ | | | BTS-100K | R54 | 470KΩ | | BTS-470K | | |
| R28 | 47KΩ | | | BTS-47K | R55 | 1000Ω | | BTS-1000 | | |
| R29 | 2200Ω | | | BTS-2200 | R56 | 18KΩ | | BTS-18K | | |
| R30 | 1.2Meg | | | BTS-1.2Meg | R57 | 8000Ω | | BTS-8000 | | |
| R31 | 1.2Meg | | | BTS-1.2Meg | R58 | 2000Ω | | BTS-2000 | | |
| R32 | 27KΩ | | | BTS-27K | R59 | 2000Ω | | BTS-2000 | | |

TRANSFORMER (POWER)

| ITEM No. | RATING | | | REPLACEMENT DATA | | |
|----------|------------------|-----------------|--------------------------|----------------------|------------------|------------------|
| | PRI. | SEC. 1 | SEC. 2 | Bell. Sound PART No. | STANCOR PART No. | CHICAGO PART No. |
| T1 | 117VAC ① 1.2A | 80VDC ② 1.4A | SEC. 3 148ADC ③ 3A | B-20236 | PC-8412 | PV-300 ① |

① Drill new mounting holes

TRANSFORMER (AUDIO OUTPUT)

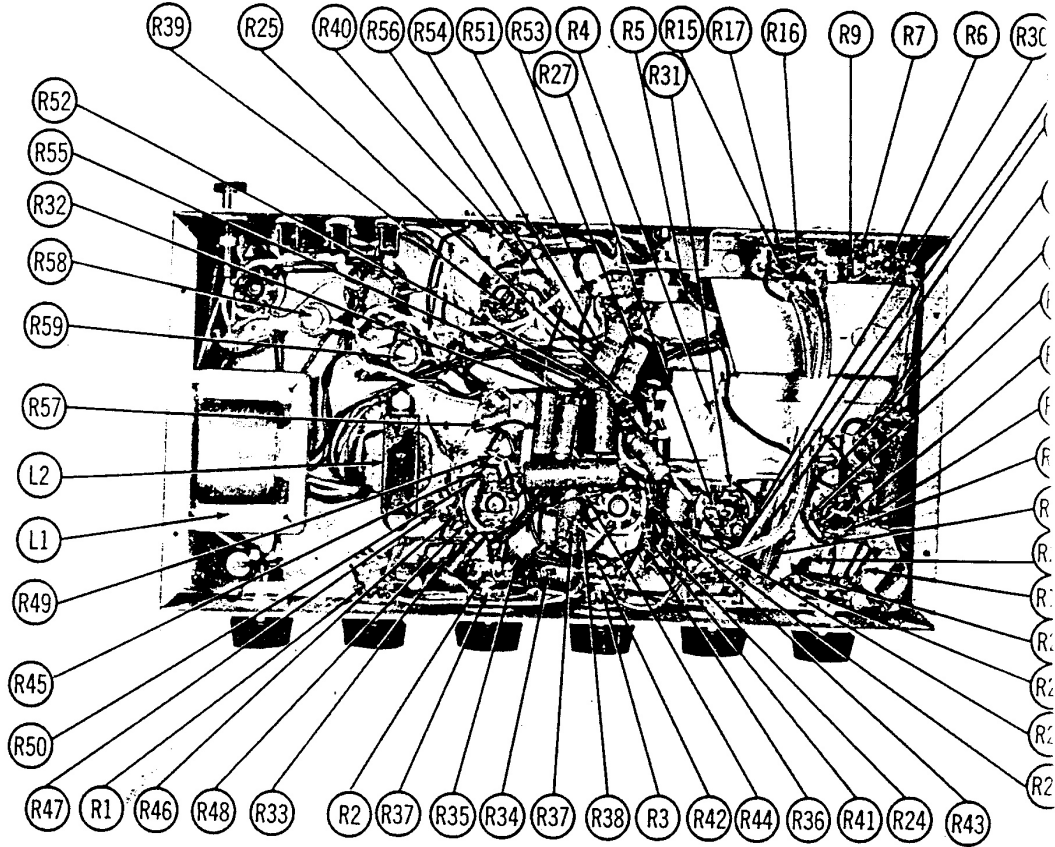
| ITEM No. | RATING | | | REPLACEMENT DATA | | |
|----------|-----------|---------|--------|----------------------|------------------|------------------|
| | IMPEDANCE | DC RES. | SEC. | Bell. Sound PART No. | STANCOR PART No. | CHICAGO PART No. |
| T2 | 6KΩCT | 160ΩTap | 118ΩCT | B-20235 | | |

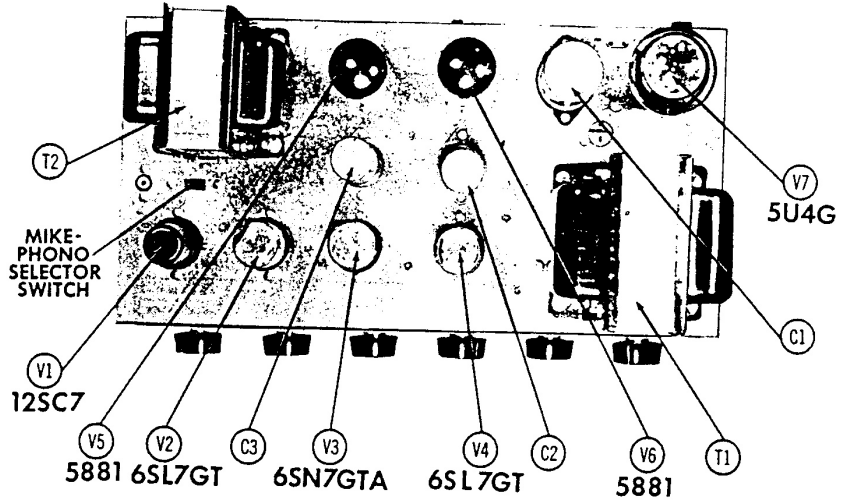
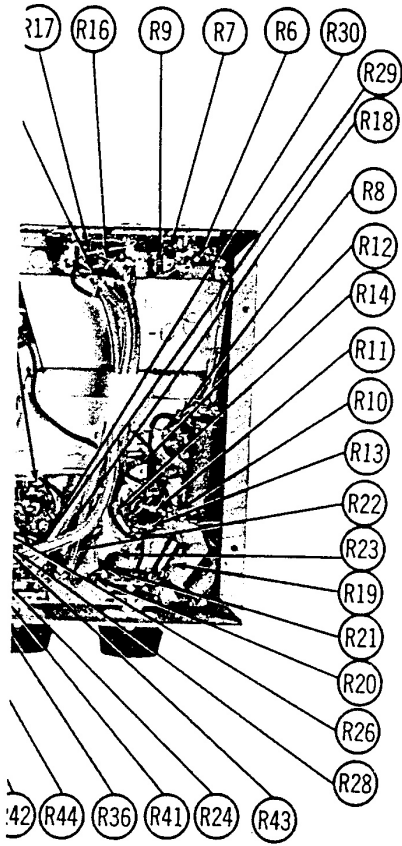
① 8Ω
② 4Ω
③ 16Ω
Calhode
SUBJECT

FILTER CHOKE

| ITEM No. | RATINGS | | | REPLACEMENT DATA | | |
|----------|---------------|-----------------|-----------------------|----------------------|------------------|------------------|
| | TOTAL CURRENT | D.C. RESISTANCE | INDUCTANCE TO CURRENT | Bell. Sound PART No. | STANCOR PART No. | CHICAGO PART No. |
| L1 | 1.60ADC | 30Ω | 4.8 H _v | B-20055 | C-1710 | C-13X |
| L2 | 1.00ADC | 55Ω | 10 H _v | B-20058 | C-1710 | C-13X |

CHASSIS—BOTTOM VIEW





TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING | | REPLACEMENT DATA | | | | NOTES |
|----------|----------------|------------------|---------------------|------------------|----------------|------------------|-------|
| | IMPEDANCE | DC RES. | Bell Sound PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | |
| T2 | 6KΩ CT @ 50 Hz | 180 Ω CT @ 70 Hz | B-20235 | | | | |
| | 40 Cathode | 480 Cathode | | | | | |
| | 1080 CT | 2.40C-T | | | | | |

FILTER CHOKE

| ITEM No. | RATINGS | | REPLACEMENT DATA | | | | | |
|----------|----------------------|------------------|---------------------|---------------------|------------------|----------------|------------------|----------------|
| | TOTAL DIRECT CURRENT | D. C. RESISTANCE | INDUCTANCE (1000 μ) | Bell Sound PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | TRIAD PART No. |
| L1 | .140 ADC | 900 | 4.8 H _v | B-20055 | C-1710 | | | |
| L2 | .008 ADC | 5500 | 10 H _v | B-20058 | C-1515 | C-2881 | | C-13X |

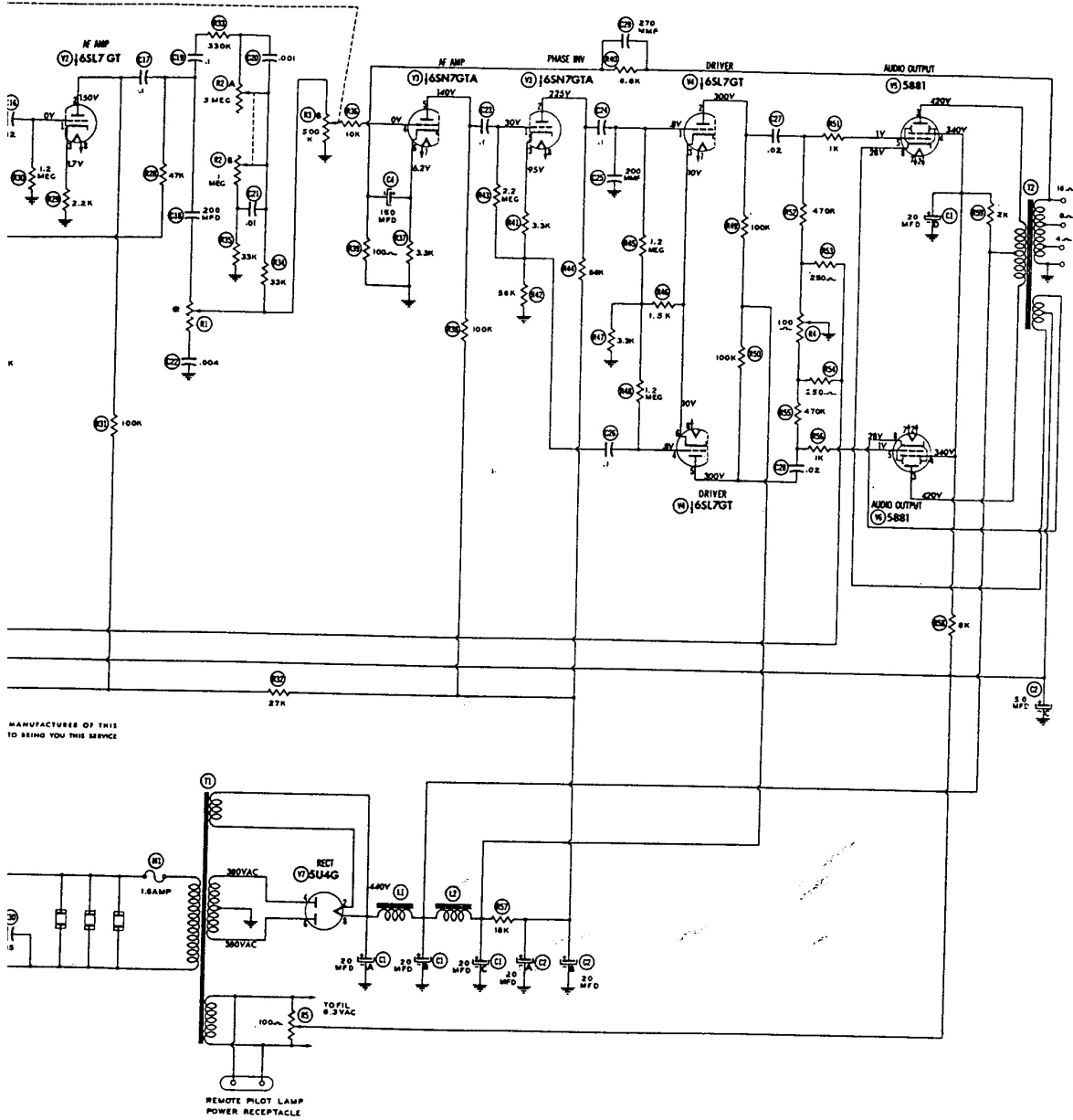
PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

| ITEM No. | TYPE | RATING | REPLACEMENT DATA | | | | |
|----------|------|------------------------|------------------------|---------------------|----------------|-------------|--|
| | | | Bell Sound PART No. | LITTELFUSE PART No. | BUSS PART No. | NOTES | |
| M1 | BAG | 1 6/10A 125V (Slo-Blo) | | | | | |
| | | | FUSE | HOLDER | FUSE HOLDER | FUSE HOLDER | |
| | | | 31301.6 (3AG-1 6/10A-) | 342001 | MDL-1 6/10 BXP | | |

MISCELLANEOUS

| ITEM No. | PART NAME | Bell Sound PART No. | NOTES |
|----------|-----------|---------------------|---------------------|
| M2 | Switch | | Power (On/Off) |
| M3 | Switch | | Input Selector |
| M4 | Switch | | Frequency Equalizer |
| M5 | Switch | | Mike-Phono Selector |

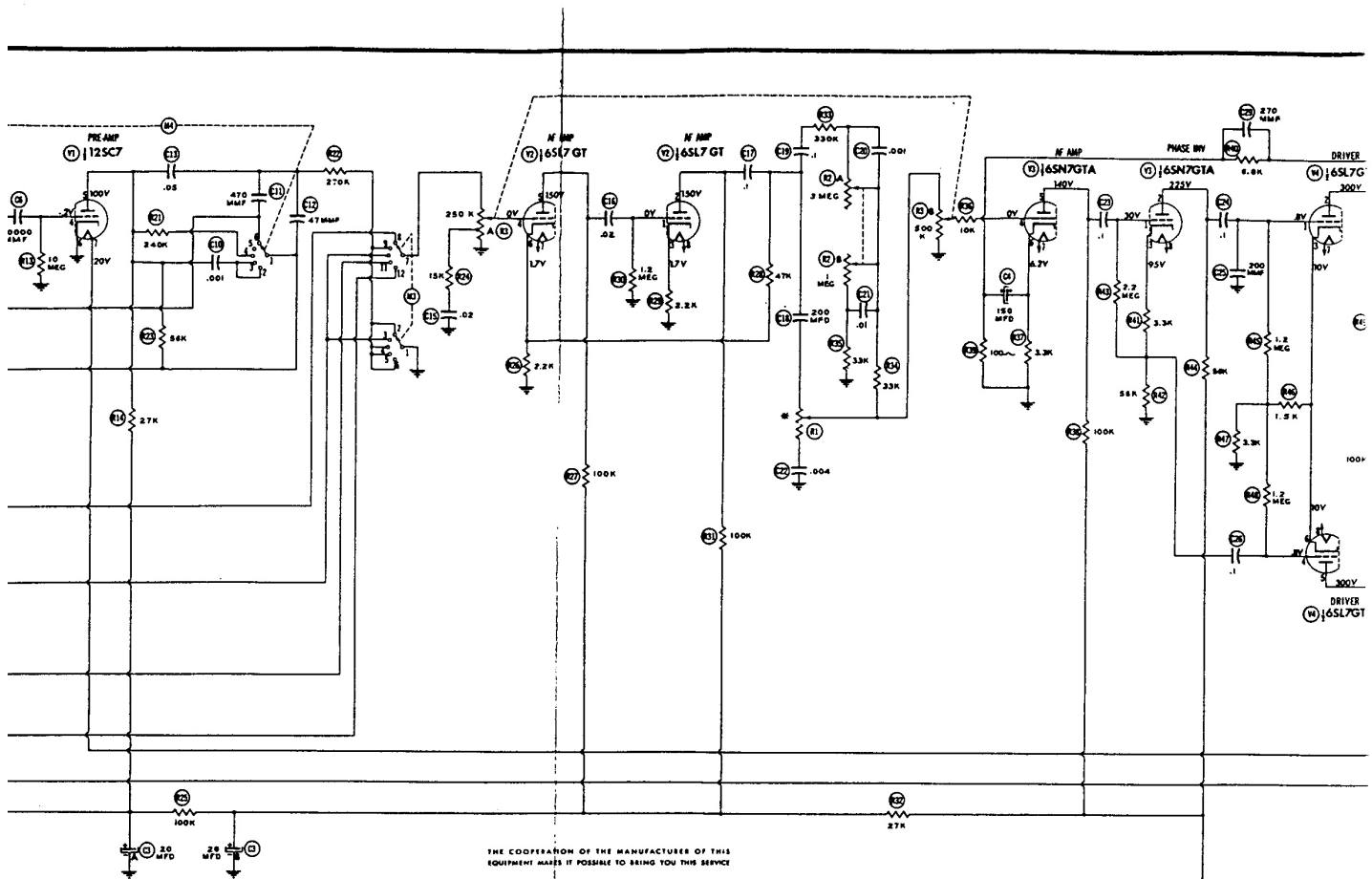


RESISTANCE READINGS

| Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 |
|---------|--------|--------|-------|--------|--------|-------|-------|-------|
| 12SC7 | 0Ω | ↑172KΩ | 10Meg | 10Meg | ↑172KΩ | 0Ω | 200Ω | 200Ω |
| 6SL7GT | 1.2Meg | ↑145KΩ | 2.2KΩ | 10Ω | ↑145KΩ | 2.2KΩ | 200Ω | 200Ω |
| 6SN7GTA | 2.2Meg | ↑74KΩ | 56KΩ | 10KΩ | ↑118KΩ | 3.3KΩ | 200Ω | 200Ω |
| 6SL7GT | 1.2Meg | ↑100KΩ | 4.8KΩ | 1.2Meg | ↑100KΩ | 4.8KΩ | 200Ω | 200Ω |
| 5881 | 0Ω | 200Ω | ↑370Ω | ↑2.1KΩ | 470KΩ | 100Ω | 200Ω | 200Ω |
| 5881 | 0Ω | 200Ω | ↑320Ω | ↑2.1KΩ | 470KΩ | 100Ω | 200Ω | 200Ω |
| 5U4G | INF | 20KΩ | INF | 44Ω | INF | 46Ω | INF | 20KΩ |

↑ MEASURED TO PIN 2 OF V7

■ 6.3VAC MEASURED ACROSS FILAMENTS.



THE COOPERATION OF THE MANUFACTURERS OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

QUALIZER SWITCH (M4) SHOWN IN POSITION "E".

SWITCH SEQUENCE

- 1.- A
- 2.- B
- 3.- C
- 4.- D
- 5.- E

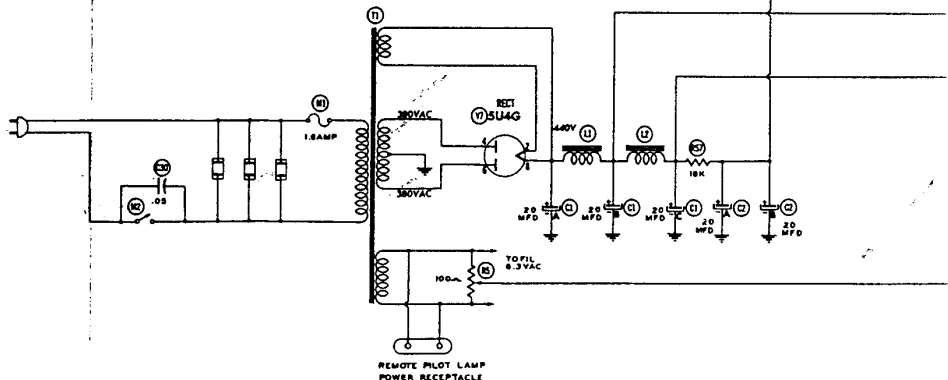
INPUT SELECTOR SWITCH (M3) SHOWN IN TV POSITION

SWITCH SEQUENCE

- 1.- TV
- 2.- MAG.
- 3.- RADIO
- 4.- XTAL
- 5.- TAPE

PARTS LIST FOR VALUE AND APPLICATION

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common negative.
- Line voltage maintained at 117 Volts for voltage readings.
- Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
- All controls at minimum, proper output load connected.

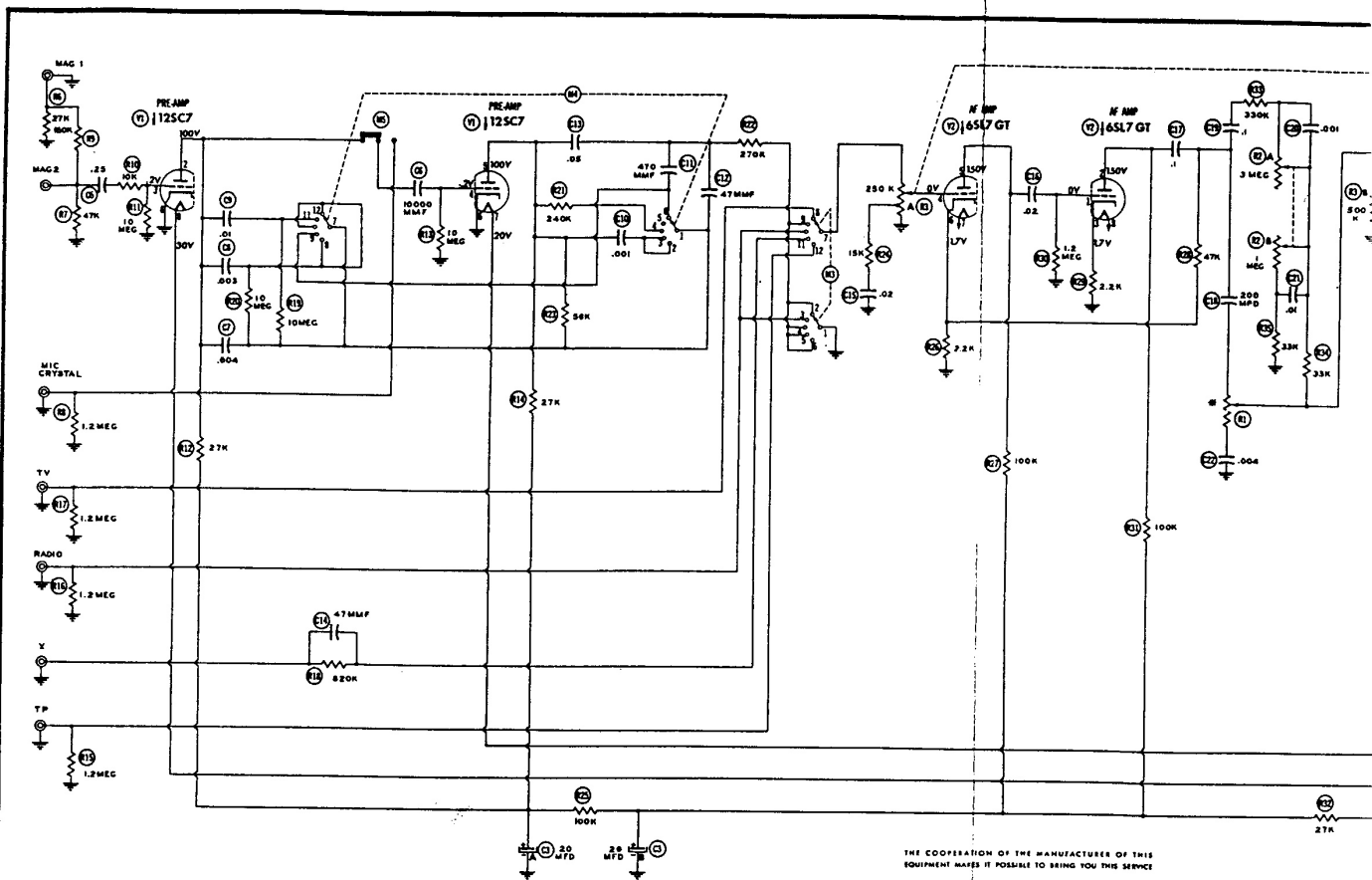


RESISTANCE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 |
|------|---------|--------|--------|-------|--------|--------|-------|-------|-------|
| V 1 | 12SC7 | 0Ω | †172KΩ | 10Meg | 10Meg | †172KΩ | 0Ω | 200Ω | 200Ω |
| V 2 | 6SL7GT | 1.2Meg | †145KΩ | 2.2KΩ | 10Ω | †145KΩ | 2.2KΩ | 200Ω | 200Ω |
| V 3 | 6SN7GTA | 2.2Meg | †74KΩ | 56KΩ | 10KΩ | †118KΩ | 3.3KΩ | 200Ω | 200Ω |
| V 4 | 6SL7GT | 1.2Meg | †100KΩ | 4.8KΩ | 1.2Meg | †100KΩ | 4.8KΩ | 200Ω | 200Ω |
| V 5 | 5881 | 0Ω | 200Ω | †370Ω | †2.1KΩ | 470KΩ | 100Ω | 200Ω | 200Ω |
| V 6 | 5881 | 0Ω | 200Ω | †320Ω | †2.1KΩ | 470KΩ | 100Ω | 200Ω | 200Ω |
| V 7 | 5U4G | INF | 20KΩ | INF | 44Ω | INF | 46Ω | INF | 20Ω |

† MEASURED TO PIN 2 OF V7

■ 6.3VAC MEASURED ACROSS FILAMENTS.



THE COOPERATION OF THE MANUFACTURERS OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

EQUALIZER SWITCH (M4) SHOWN IN POSITION "E".

SWITCH SEQUENCE

- 1.- A
- 2.- B
- 3.- C
- 4.- D
- 5.- E

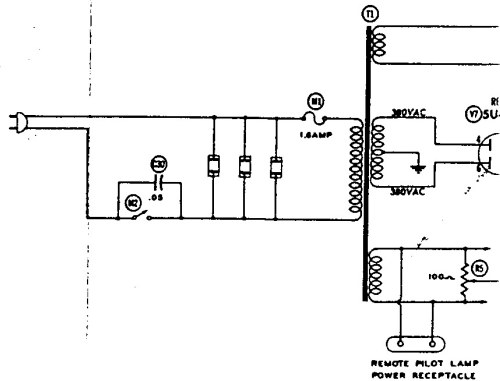
INPUT SELECTOR SWITCH (M3) SHOWN IN TV POSITION

SWITCH SEQUENCE

- 1.- TV
- 2.- MAG.
- 3.- RADIO
- 4.- XTAL
- 5.- TAPE

* SEE PARTS LIST FOR VALUE AND APPLICATION

- 1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
- 2. Socket connections are shown as bottom views.
- 3. Measured values are from socket pin to common negative.
- 4. Line voltage maintained at 117 Volts for voltage readings.
- 5. Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
- 6. All controls at minimum, proper output load connected.



RESISTA

| Item | Tube | Pin 1 | Pin 2 | Pin 3 |
|------|---------|--------|--------|-------|
| V 1 | 12SC7 | 0Ω | †172KΩ | 10Meg |
| V 2 | 6SL7GT | 1.2Meg | †145KΩ | 2.2KΩ |
| V 3 | 6SN7GTA | 2.2Meg | †74KΩ | 56KΩ |
| V 4 | 6SL7GT | 1.2Meg | †100KΩ | 4.8KΩ |
| V 5 | 5881 | 0Ω | 200Ω | †370Ω |
| V 6 | 5881 | 0Ω | 200Ω | †320Ω |
| V 7 | 5U4G | INF | 20KΩ | INF |

† MEASURED
■ 6.3VAC ME