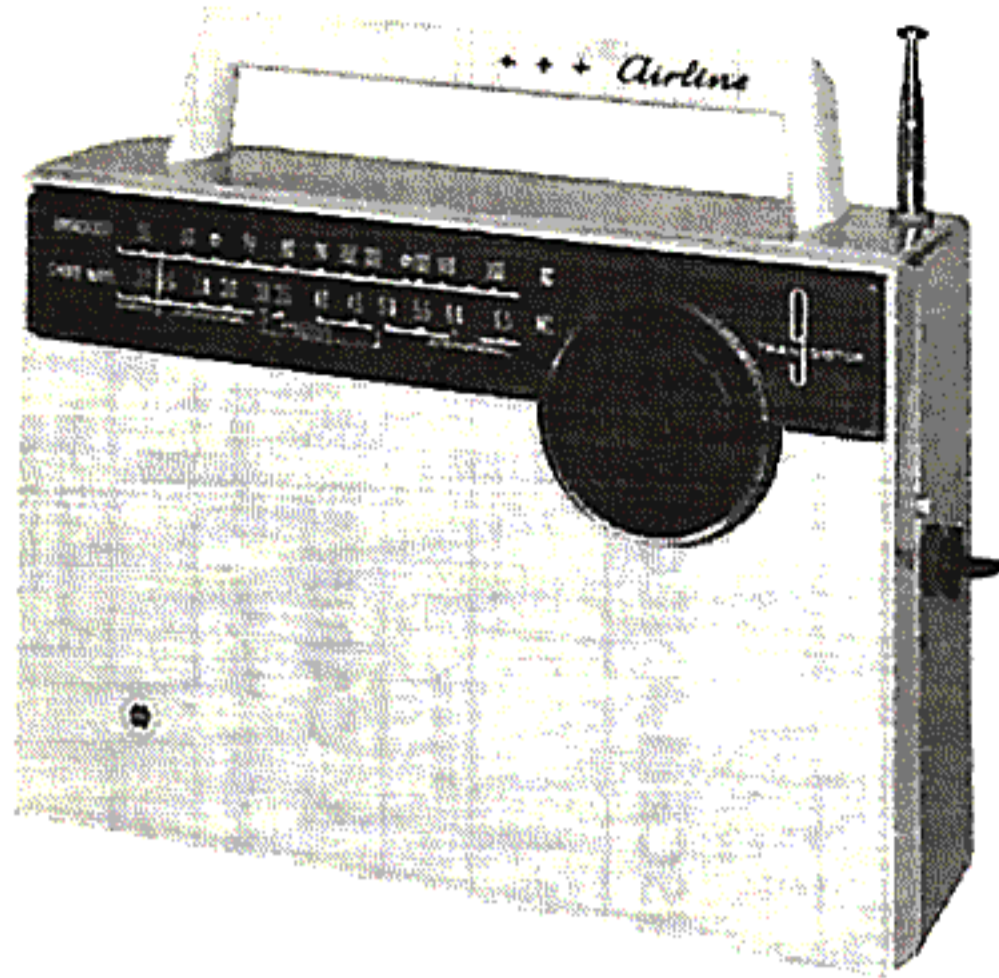


with

**CIRCUITRACE<sup>®</sup>**



TRADE NAME: Airline Model GTM-1230A  
 SUPPLIER: Montgomery Ward & Co.,  
 619 Chicago Ave., Chicago 7, Illinois  
 TYPE SET: 9 Transistor AM-SW Receiver  
 POWER SUPPLY: 9 Volts DC  
 RATING: 12MA @ 9VDC (No Signal, Min. Volume)  
 25MA @ 9VDC (Signal, Normal Volume)  
 TUNING RANGE: BROADCAST 540 - 1650KC  
 SHORTWAVE 2.4 - 6.5MC

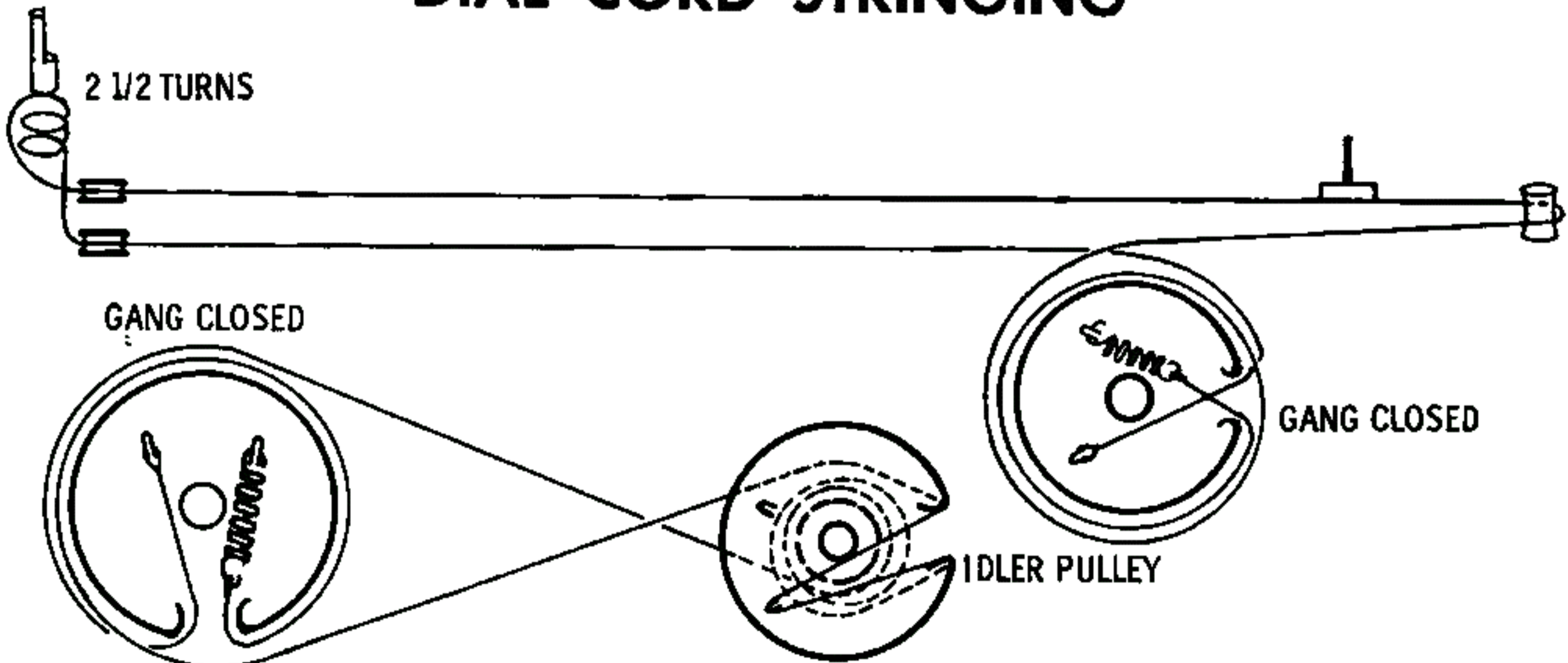
## ALIGNMENT INSTRUCTIONS

Check for specified source voltage.  
 Fashion loop of several turns of wire and connect generator across loop.  
 Adjust output of generator to radiate only enough signal into receiver to obtain a suitable indication.  
 Suggested Alignment Tools:

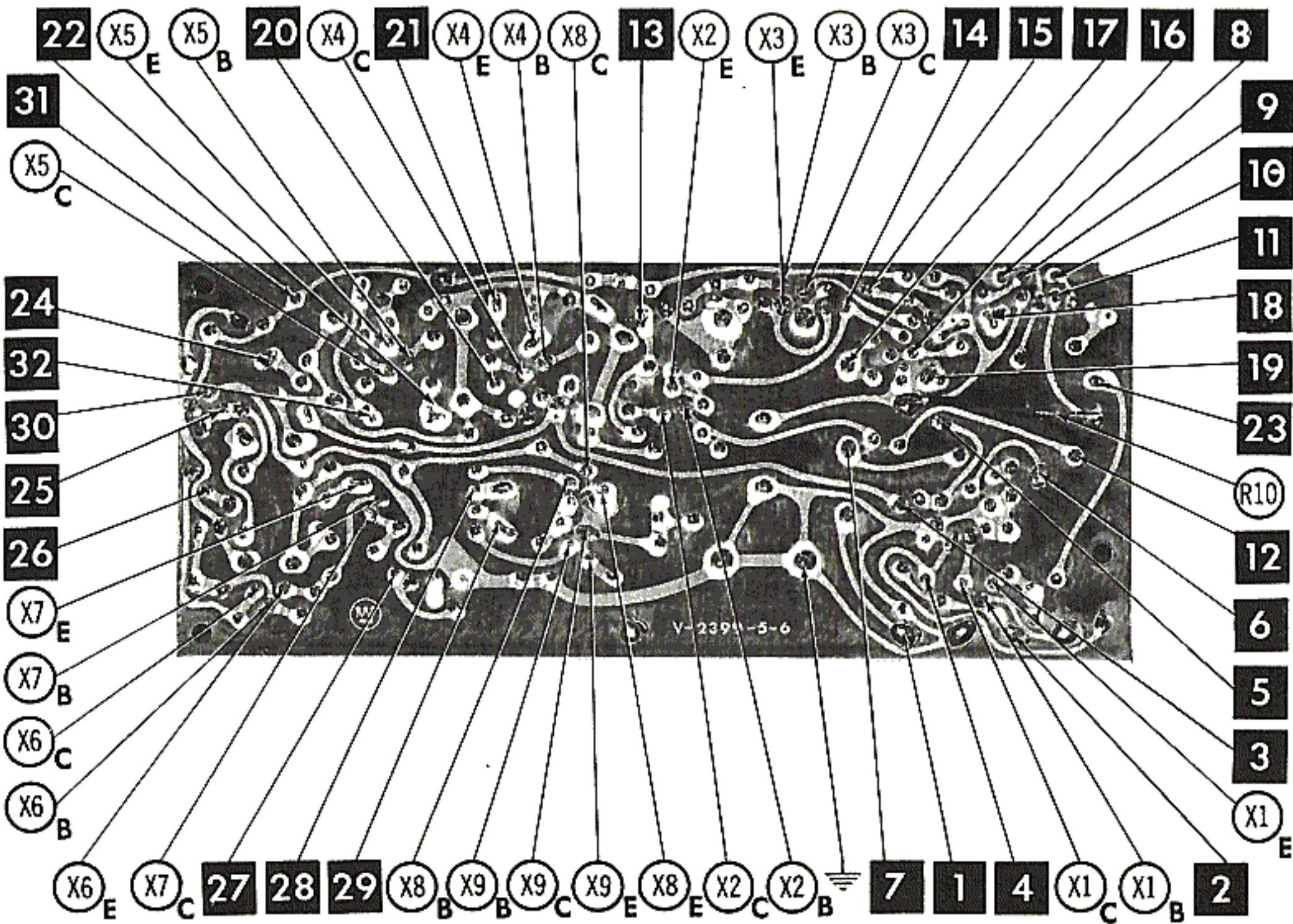
A1, A6.....GENERAL CEMENT #5067, 8282, 8606.....WALSCO #2526, 2543  
 A5, A10, A11.....GENERAL CEMENT #9440.....WALSCO #2501  
 A4, A7, A8, A9.....GENERAL CEMENT #5000, 5066, 8290.....WALSCO #2528, 2525, 2512

| SIGNAL GENERATOR FREQUENCY | RADIO DIAL SETTING      | INDICATOR                       | ADJUST     | REMARKS  |
|----------------------------|-------------------------|---------------------------------|------------|--|
| 455KC (400v Mod.)          | Tuning gang fully open. | Output Meter across voice coil. | A1, A2, A3 | Adjust for maximum. Repeat as required.                        |
| 1650KC                     | "                       | "                               | A4         | Adjust for maximum.  |
| 600KC                      | Tune to Signal.         | "                               | A5, A6     | Rock tuning gang and adjust for maximum. Repeat steps 2 and 3. |
| 1400KC                     | "                       | "                               | A7, A8     | Adjust for maximum.  |
| 6.5MC                      | "                       | "                               | A9         | "  |
| 2.4MC                      | 2.4MC                   | Output Meter across voice coil. | A10        | Adjust for maximum.  |
| 2.6MC                      | 2.6MC                   | "                               | A11        | "  |
| 5.8MC                      | 5.8MC                   | "                               | A12        | "  |

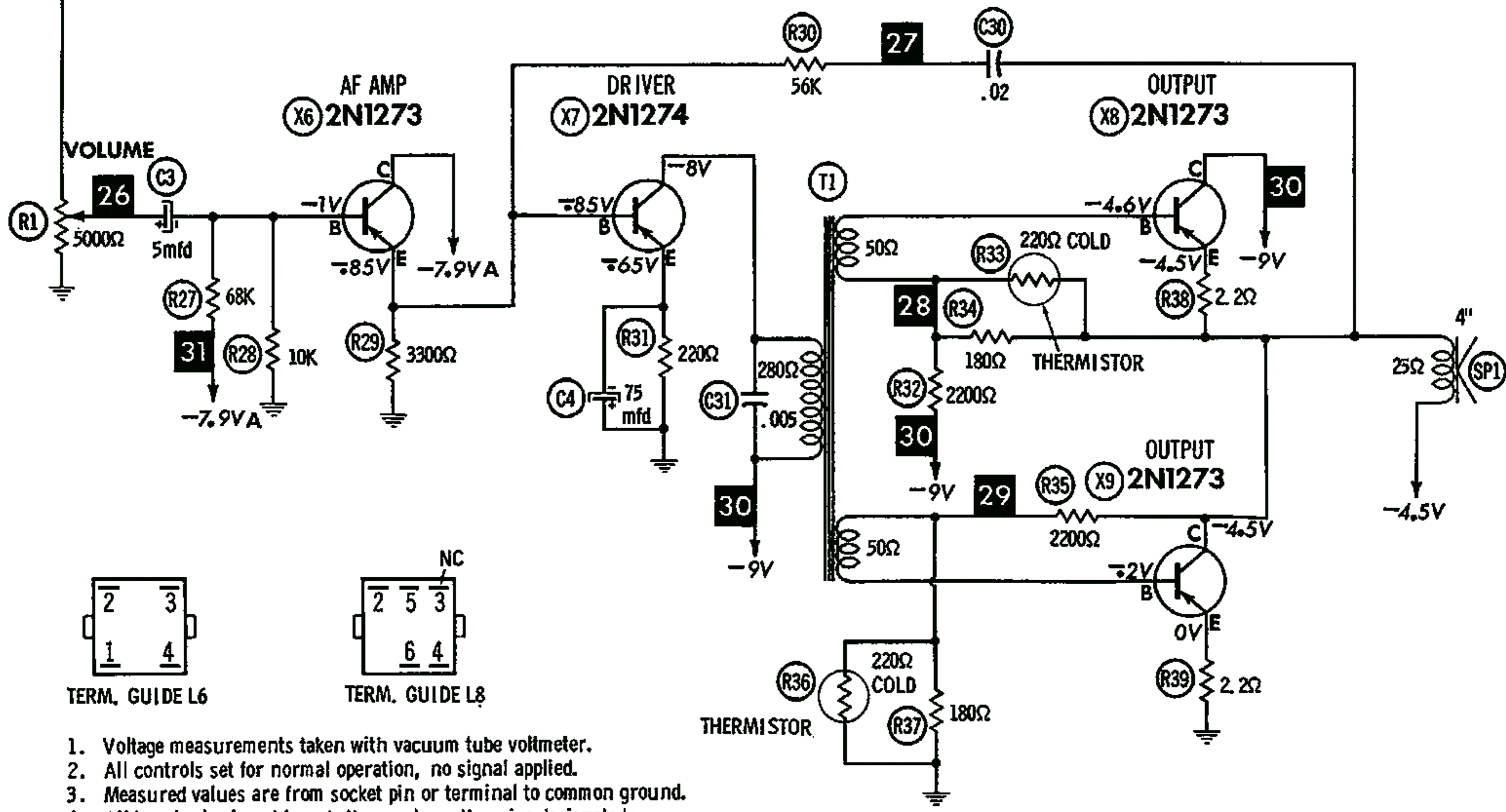
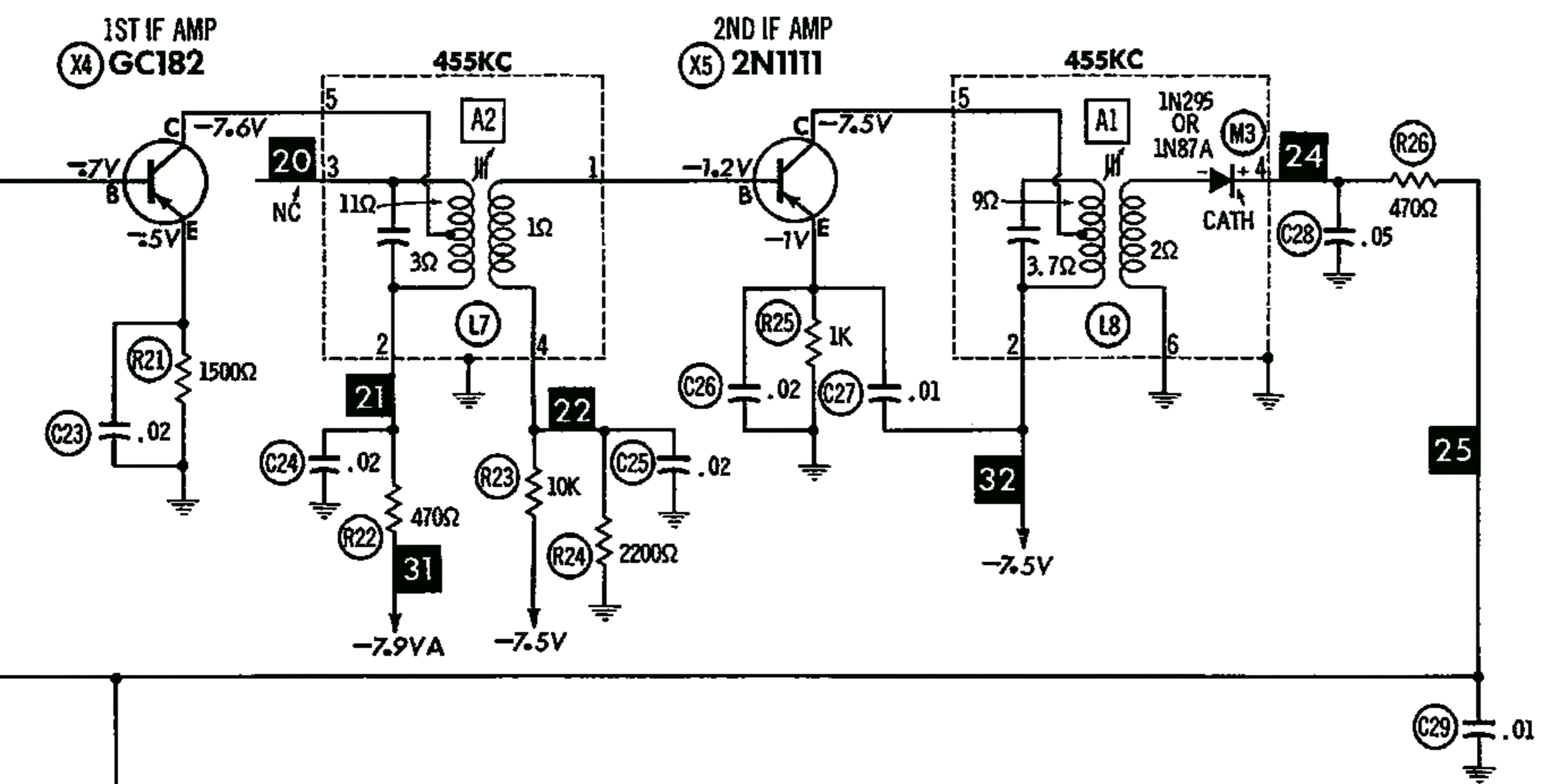
## DIAL CORD STRINGING



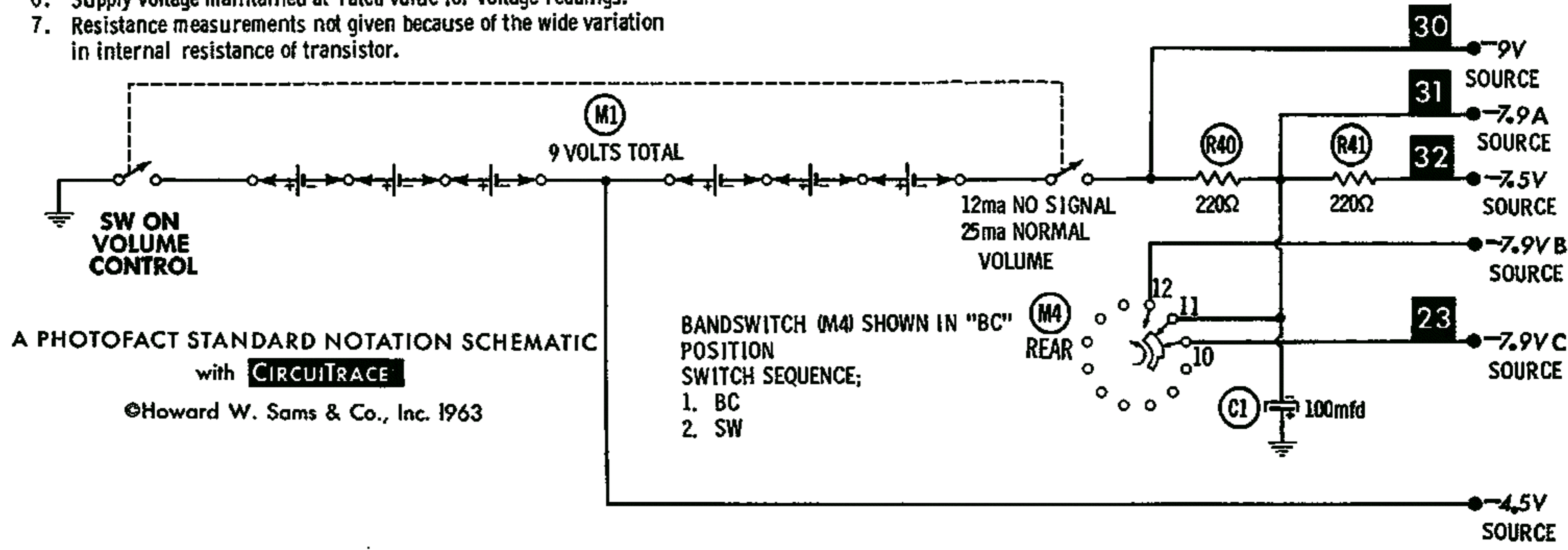
**HOWARD W. SAMS & CO., INC.** Indianapolis 6, Indiana







1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.



A PHOTOFACIT STANDARD NOTATION SCHEMATIC  
with **CIRCUITRACE**

©Howard W. Sams & Co., Inc. 1963

BANDSWITCH (M4) SHOWN IN "BC"  
POSITION  
SWITCH SEQUENCE;  
1. BC  
2. SW

## TRANSISTORS

| ITEM No. | ORIG. TYPE | USE         | REPLACEMENT DATA |                           |              | NOTES |
|----------|------------|-------------|------------------|---------------------------|--------------|-------|
|          |            |             | DELCO PART No.   | GENERAL ELECTRIC PART No. | RCA PART No. |       |
| X1       | GC181      | RF Amp.     | DS-25            | GE-1                      |              | PNP   |
| X2       | GC181      | Mixer       | DS-25            | GE-1                      |              | PNP   |
| X3       | GC181      | Osc.        | DS-25            | GE-1                      |              | PNP   |
| X4       | GC182      | 1st IF Amp. | DS-25            | GE-1                      |              | PNP   |
| X5       | 2N1111     | 2nd IF Amp. | DS-25            | GE-1                      | 2N410        | PNP   |
| X6       | 2N1273     | AF Amp.     | DS-26            | GE-2                      | 2N406        | PNP   |
| X7       | 2N1274     | Driver      | DS-26            | GE-2                      | 2N406        | PNP   |
| X8       | 2N1273     | Output      | DS-26            | GE-2                      | 2N408        | PNP   |
| X9       | 2N1273     | Output      | DS-26            | GE-2                      | 2N408        | PNP   |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING |       | REPLACEMENT DATA |                  |                           |                           |                             |                  |                  |
|----------|--------|-------|------------------|------------------|---------------------------|---------------------------|-----------------------------|------------------|------------------|
|          | CAP.   | VOLT. | AIRLINE PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | GENERAL ELECTRIC PART No. | GENERAL INSTRUMENT PART No. | MALLORY PART No. | SPRAGUE PART No. |
| C1       | 100    | 10    | 218V012H20       | BCD10100         | ECPB417                   | MT1-19                    | MLV100-10                   | PET1400          | VL-1140          |
| C2       | 5      | 25    | 218V048A03       | PTT77            | NLW5-50                   | MT1-3                     | MLV5-25                     | TT25X5           | TE-1202          |
| C3       | 5      | 25    | 218V048A03       | PTT77            | NLW5-50                   | MT1-3                     | MLV5-25                     | TT25X5           | TE-1202          |
| C4       | 75     | 3     | 218V012H17       | CRE220           | NLW75-3                   | MT1-18                    | BL15H                       | TT6X80           | TE-1059          |

## FIXED CAPACITORS

| ITEM No. | RATING     | REMARKS     | REPLACEMENT DATA |                    |                           |                  |                  |                  |        |
|----------|------------|-------------|------------------|--------------------|---------------------------|------------------|------------------|------------------|--------|
|          |            |             | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ELMENCO PART No. | MALLORY PART No. | SPRAGUE PART No. |        |
| C10      | .05 30V    | #217V508H01 | TTD-05           | CK-503             | H5                        |                  | TA-150           | TG-S50           |        |
| C11      | .05 30V    |             | TTD-05           | CK-503             | H5                        |                  | TA-150           | TG-S50           |        |
| C12      | .05 30V    |             | TTD-05           | CK-503             | H5                        |                  | TA-150           | TG-S50           |        |
| C13      | .9-7mmf    |             | #217V013H39      |                    |                           |                  |                  |                  |        |
| C14      | .01 50V    |             |                  | TTD-01             | CK-103                    | H2               |                  | TA-110           | TG-S10 |
| C15      | .05 30V    |             |                  | TTD-05             | CK-503                    | H5               |                  | TA-150           | TG-S50 |
| C16      | .01 50V    |             |                  | TTD-01             | CK-103                    | H2               |                  | TA-110           | TG-S10 |
| C17      | .02 30V    |             |                  | TTD-02             | CK-203                    | H3               |                  | TA-120           | TG-S20 |
| C18      | .005       |             |                  | TTD-005            | CK-502                    | H1               |                  | TA-250           | TG-D50 |
| C19      | 3.3mmf 10% |             |                  |                    |                           |                  |                  |                  |        |
| C20      | 820 5%     |             |                  |                    | CPR-820J                  | CD19F821J        | DM-19-821J       |                  | MS-382 |
| C21      | 220 5%     |             |                  |                    | CPR-220J                  | CD15F221J        | DM-19-221J       |                  | MS-322 |
| C22      | .05 30V    |             |                  | TTD-05             | CK-503                    | H5               |                  | TA-150           | TG-S50 |
| C23      | .02 30V    | TTD-02      | CK-203           | H3                 |                           | TA-120           | TG-S20           |                  |        |
| C24      | .02 30V    | TTD-02      | CK-203           | H3                 |                           | TA-120           | TG-S20           |                  |        |
| C25      | .02 30V    | TTD-02      | CK-203           | H3                 |                           | TA-120           | TG-S20           |                  |        |
| C26      | .02 30V    | TTD-02      | CK-203           | H3                 |                           | TA-120           | TG-S20           |                  |        |
| C27      | .01        | TTD-01      | CK-103           | H2                 |                           | TA-110           | TG-S10           |                  |        |
| C28      | .05 100V   | TTD-05      | CK-503           | H5                 |                           | TA-150           | TG-S50           |                  |        |
| C29      | .01        | TTD-01      | CK-103           | H2                 |                           | TA-110           | TG-S10           |                  |        |
| C30      | .02 200V   | P288N-02    | DD-203           | PM2S2              | 4DP-2-203                 | PVC212           | 2TM-S20          |                  |        |
| C31      | .005       | TTD-005     | CK-502           | H1                 |                           | TA-250           | TG-D50           |                  |        |

# Airline Part Number.

## CONTROLS

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

| ITEM No. | USE             | RESISTANCE | REPLACEMENT DATA |                                  |                    |                  |                  |                             |
|----------|-----------------|------------|------------------|----------------------------------|--------------------|------------------|------------------|-----------------------------|
|          |                 |            | AIRLINE PART No. | CENTRALAB PART No.               | CLAROSTAT PART No. | CTS-IRC PART No. | MALLORY PART No. |                             |
| RI       | Volume & Switch | 2500Ω      | 270V027H17       | F2-5000, SU204, KR-2, AK38, AK39 |                    |                  |                  | RU53A, SL-40, SL-3500, US42 |

# DESCRIPTION

## COILS (RF-IF)

| ITEM No. | USE               | REPLACEMENT DATA |                |                 |                  |                  | NOTES |
|----------|-------------------|------------------|----------------|-----------------|------------------|------------------|-------|
|          |                   | AIRLINE PART No. | MERIT PART No. | MILLER PART No. | STANCOR PART No. | WORKMAN PART No. |       |
| L1       | Loopstick         | 310V052H02       |                |                 |                  |                  |       |
| L2       | RF (BC)           | 235V050H02       |                |                 |                  |                  |       |
| L3       | RF(SW)            | 235V093H01       |                |                 |                  |                  |       |
| L4       | Osc. (SW)         | 230V078H02       |                |                 |                  |                  |       |
| L5       | Osc. (BC)         | 230V077H02       |                |                 |                  |                  |       |
| L6       | 1st IF            | 235V051H03       |                |                 |                  |                  |       |
| L7       | 2nd IF            | 235V051H01       |                |                 |                  |                  |       |
| L8       | 3rd IF Det. Assy. | 235V052H01       |                |                 |                  | TG828            |       |

## TRANSFORMER (DRIVER)

| ITEM No. | TURNS RATIO |       | REPLACEMENT DATA |                |                  |                     |                | NOTES |
|----------|-------------|-------|------------------|----------------|------------------|---------------------|----------------|-------|
|          | PRI.        | SEC.1 | AIRLINE PART No. | MERIT PART No. | STANCOR PART No. | THORDARSON PART No. | TRIAD PART No. |       |
|          |             |       |                  |                |                  |                     |                |       |
| T1       | 2.5         | 1     | 430V076H03       |                |                  |                     |                |       |
|          |             | 1     |                  |                |                  |                     |                |       |

## SPEAKER

| ITEM No. | TYPE      | REPLACEMENT DATA |               | NOTES |
|----------|-----------|------------------|---------------|-------|
|          |           | AIRLINE PART No. | QUAM PART No. |       |
| SP1      | 4" PM 25Ω | 570V079H01       | 4A1Z25        |       |

## BATTERIES

| ITEM No. | VOLTAGE | AIRLINE PART No. | REPLACEMENT DATA |               |                   | NOTES      |
|----------|---------|------------------|------------------|---------------|-------------------|------------|
|          |         |                  | BURGESS          | EVEREADY      | MALLORY           |            |
| M1       | 9       |                  | 230 (or AL-2)    | A100 (or E95) | M-13R (or MN1300) | 6 Required |

## MISCELLANEOUS

| ITEM No. | PART NAME      | AIRLINE PART No. | NOTES   |
|----------|----------------|------------------|---|
| M2       | Tuning Cap.    | 330V028H02       | 3 Gang<br>1N295 (Included in L8)<br>Rotary Wafer Type |
| M3       | Diode (Det.)   | 235V052H01       |   |
| M4       | Switch (BC-SW) | 756V038H02       |   |

## CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

| ITEM            | PART No.   | ITEM          | PART No.   |
|-----------------|------------|---------------|------------|
| Knob - Tuning   | 550V094H03 | Cabinet Front | 513V048H02 |
| Knob - Volume   | 550V155H04 | Cabinet Back  | 513V050H04 |
| Knob - Selector | 550V115H01 |               |            |

## WIRING DATA

|   |                                   |           |
|---|-----------------------------------|-----------|
| General-use Unshielded Hook-up Wire ..... | Use BELDEN No. 8530 (Solid 22AWG) | Available |
|   | 8524 (Stranded 22AWG)             | in        |
|   | 8570 (Stranded 26AWG)             | 12 Colors |

