



862-A

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# TRANSMITTING TRIODE

## WATER & FORCED-AIR COOLED

**Electrical:****GENERAL DATA**

Filament: Tungsten  
 Voltage . . . . . 33 . . . . . a-c or d-c volts  
 Current . . . . . 207 . . . . . amp.  
 Starting - The current should never exceed 400 amperes, even momentarily.

Amplification Factor. . . . . 45

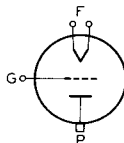
Direct Interelectrode Capacitances (Approx.):

Grid to Plate . . . . . 70 . . . . .  $\mu\text{mf}$   
 Grid to Filament. . . . . 53 . . . . .  $\mu\text{mf}$   
 Plate to Filament . . . . . 4.5 . . . . .  $\mu\text{mf}$

**Physical:**

Terminal Legend:

F - Stranded Filament Terminal  
 G - Ribbon Grid Terminal



P - Water-cooled Plate Terminal

Mounting Position . . . . . Vertical only, glass end up  
 Maximum Overall Length. . . . . 60-3/8"  
 Greatest Radius . . . . . 10"  
 Base (with nozzle for air-cooling of filament seal) No. 3908  
 Water Jacket (with nozzle for air-cooling of bulb) Type UT-1289-A  
 Gasket. . . . . RCA Stock No. 17879

Cooling - Water flow of 15 to 25 gallons per minute must start before application of any voltages and continue for at least 10 minutes after removal of all voltages. Water temperature must not exceed 70°C at socket outlet under any conditions of operation. Air flow of 15 cubic feet per minute in bulb nozzle and 3 cubic feet per minute in filament-seal nozzle is required before the application of any voltages and must continue for at least 10 minutes after removal of voltages to limit the glass temperature to 150°C at the hottest part.

*This tube can often be operated at reduced filament voltage as explained on sheet TYPES OF CATHODES in General Section.*

### A-F POWER AMPLIFIER & MODULATOR - Class B

**Maximum Ratings, Absolute Values:**

D-C PLATE VOLTAGE . . . . . 15000 max. . volts  
 MAX.-SIGNAL D-C PLATE CURRENT\* . . . . . 7.5 max. . amp.  
 MAX.-SIGNAL PLATE INPUT\* . . . . . 100 max. . kw  
 PLATE DISSIPATION\* . . . . . 50 max. . kw

**Typical Operation:**

*Unless otherwise specified, values are for 2 tubes*

D-C Plate Voltage . . . . . 12000 . . . volts  
 D-C Grid Voltage<sup>o</sup> . . . . . 0 . . . volts  
 Peak A-F Grid-to-Grid Voltage . . . . . 2000 . . . volts  
 Zero-Signal D-C Plate Current . . . . . 3 . . . amp.  
 Max.-Signal D-C Plate Current . . . . . 13 . . . amp.  
 Effective Load Res. (plate to plate). . . 1800 . . . ohms  
 Max.-Signal Driving Power . . . . . 450 approx. watts  
 Max.-Signal Power Output. . . . . 90 approx. kw

\* Averaged over any audio-frequency cycle of sine-wave form.  
<sup>o</sup> For a-c filament supply.

MAR. 30, 1945

RCA VICTOR DIVISION  
 RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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## TRANSMITTING TRIODE

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R-F POWER AMPLIFIER - Class B Telephony

Carrier conditions per tube for use with a max. modulation factor of 1.0

**Maximum Ratings, Absolute Values:**

|                             |                |       |
|-----------------------------|----------------|-------|
| D-C PLATE VOLTAGE . . . . . | 20000 max. . . | volts |
| D-C PLATE CURRENT . . . . . | 5 max. . .     | amp.  |
| PLATE INPUT . . . . .       | 100 max. . .   | kw    |
| PLATE DISSIPATION . . . . . | 75 max. . .    | kw    |

**Typical Operation:**

|                                         |       |       |       |         |       |
|-----------------------------------------|-------|-------|-------|---------|-------|
| D-C Plate Voltage . . . . .             | 12000 | 15000 | 18000 | . . .   | volts |
| D-C Grid Voltage <sup>o</sup> . . . . . | -100  | -150  | -200  | . . .   | volts |
| Peak R-F Grid Voltage . . . . .         | 500   | 625   | 750   | . . .   | volts |
| D-C Plate Current . . . . .             | 2.8   | 3.5   | 4.2   | . . .   | amp.  |
| Driving Power # ** . . . . .            | 0.5   | 0.75  | 1.1   | approx. | kw    |
| Power Output . . . . .                  | 11    | 17.5  | 25    | approx. | kw    |

\*\* At crest of a-f cycle with modulation factor of 1.0.

<sup>o</sup> For a-c filament supply.PLATE MODULATED R-F POWER AMPLIFIER - Class C Telephony

Carrier conditions per tube for use with a max. modulation factor of 1.0

**Maximum Ratings, Absolute Values:**

|                             |                |       |
|-----------------------------|----------------|-------|
| D-C PLATE VOLTAGE . . . . . | 12000 max. . . | volts |
| D-C GRID VOLTAGE . . . . .  | -3000 max. . . | volts |
| D-C PLATE CURRENT . . . . . | 5 max. . .     | amp.  |
| D-C GRID CURRENT . . . . .  | 1.25 max. . .  | amp.  |
| PLATE INPUT . . . . .       | 60 max. . .    | kw    |
| PLATE DISSIPATION . . . . . | 50 max. . .    | kw    |

**Typical Operation:**

|                                 |      |       |       |         |       |
|---------------------------------|------|-------|-------|---------|-------|
| D-C Plate Voltage . . . . .     | 8000 | 10000 | 12000 | . . .   | volts |
| D-C Grid Voltage . . . . .      | -700 | -750  | -800  | . . .   | volts |
| Peak R-F Grid Voltage . . . . . | 1700 | 1850  | 2000  | . . .   | volts |
| D-C Plate Current . . . . .     | 4    | 4.5   | 5     | . . .   | amp.  |
| D-C Grid Current.# . . . . .    | 1    | 1     | 1     | approx. | amp.  |
| Driving Power # . . . . .       | 1.7  | 1.85  | 2     | approx. | kw    |
| Power Output . . . . .          | 24   | 34    | 45    | approx. | kw    |

R-F POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

#key-down conditions per tube without modulation\*\*

**Maximum Ratings, Absolute Values:**

|                             |                |       |
|-----------------------------|----------------|-------|
| D-C PLATE VOLTAGE . . . . . | 20000 max. . . | volts |
| D-C GRID VOLTAGE . . . . .  | -3000 max. . . | volts |
| D-C PLATE CURRENT . . . . . | 10 max. . .    | amp.  |
| D-C GRID CURRENT . . . . .  | 1 max. . .     | amp.  |
| PLATE INPUT . . . . .       | 200 max. . .   | kw    |
| PLATE DISSIPATION . . . . . | 100 max. . .   | kw    |

#, \*\*: See next page.



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## TRANSMITTING TRIODE

(continued from preceding page)

## Typical Operation:

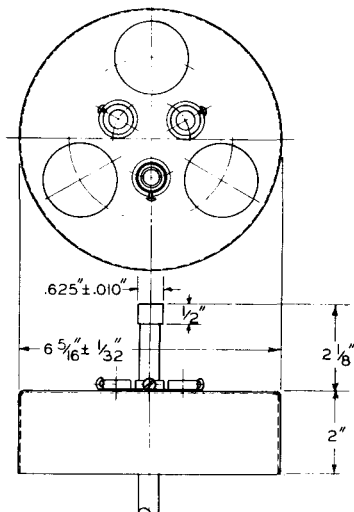
|                                 |       |       |       |              |
|---------------------------------|-------|-------|-------|--------------|
| D-C Plate Voltage . . . . .     | 12000 | 15000 | 18000 |              |
| D-C Grid Voltage . . . . .      | -800  | -900  | -1000 | . . . volts  |
| Peak R-F Grid Voltage . . . . . | 2050  | 2300  | 2550  | . . . volts  |
| D-C Plate Current . . . . .     | 6.25  | 7.5   | 8.33  | . . . volts  |
| D-C Grid Current # . . . . .    | 0.8   | 0.85  | 0.9   | approx. amp. |
| Driving Power # . . . . .       | 1.6   | 2     | 2.4   | approx. kw   |
| Power Output . . . . .          | 50    | 75    | 100   | approx. kw   |

# Subject to wide variations as explained on sheet TUBE RATINGS in General Section.

## Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

Data on operating frequencies for the 862-A are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.

## N° 3908 BASE OUTLINE



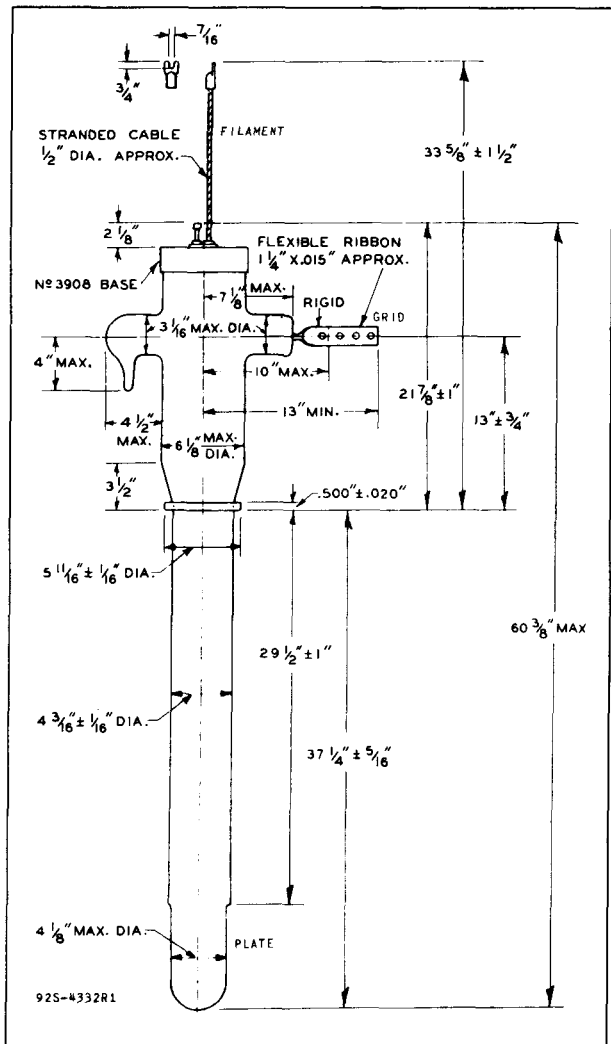
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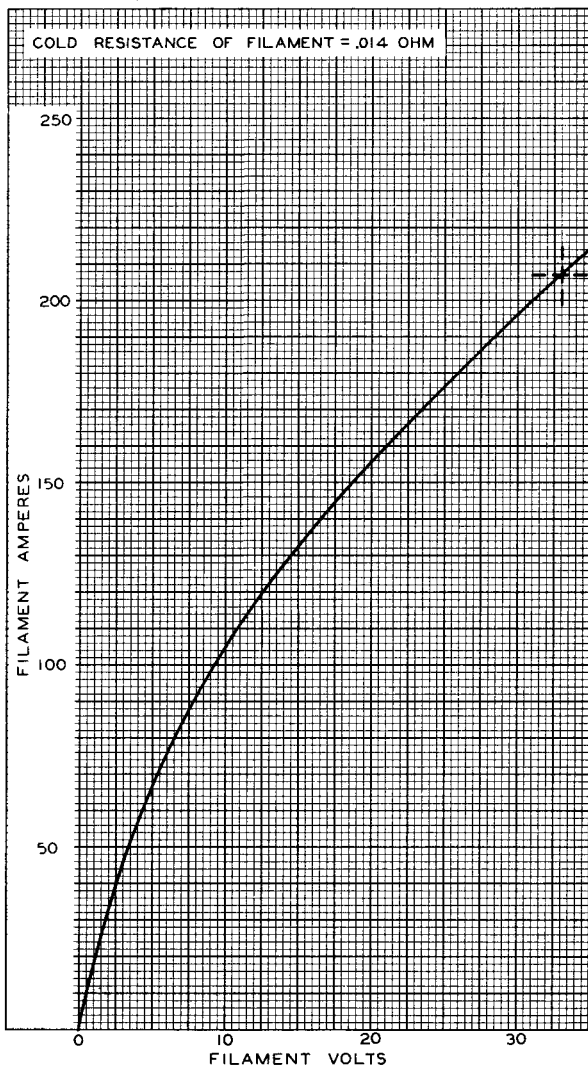
DATA 2



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# AVERAGE FILAMENT CHARACTERISTIC



FEB. 1, 1945

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92CM-4461R1

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## TRANSMITTING TRIODE

ADDITIONAL CURVES  
FOR THE 862-A ARE THE SAME AS  
THOSE FOR TYPE 898-A

MAR. 30, 1945

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CURVES