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**TRANSMITTING TRIODE****WATER & FORCED-AIR COOLED***Supersedes Type 88g*GENERAL DATA**Electrical:**

Filament, Tungsten:

Voltage . . . . . 11 . . . . . volts

Current . . . . . 125 . . . . . amp

Starting Current: The filament current must never exceed 187 amperes, even momentarily.

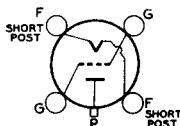
Amplification Factor. . . . . 21

Direct Interelectrode Capacitances (Approx.):

Grid to Plate . . . . . 17.5 . . . . .  $\mu\text{f}$ Grid to Filament. . . . . 23.3 . . . . .  $\mu\text{f}$ Plate to Filament . . . . . 2.7 . . . . .  $\mu\text{f}$ **Mechanical:**

Terminal Connections:

TOP VIEW

F—Filament  
(Short Terminals)G—Grid  
(Long Terminals)P—Water-Cooled  
Plate Terminal

Mounting Position. . . . . Vertical only, glass end up

Overall Length . . . . . 10-7/16"  $\pm$  1/4"

Maximum Diameter . . . . . 3-5/8"

Water Jacket . . . . . Type UT-4000

Water Flow: 3 to 6 gallons per minute must start before application of any voltages, and must continue for at least 5 minutes after removal of all voltages. Water temperature at jacket outlet must not exceed 70°C under any conditions of operation.

Air Flow: 15 cu.ft. per minute through a 3-inch diameter nozzle must be directed downward toward grid and plate seals before and during the application of any voltages to limit temperature of glass at hottest point to 150°C.

*This tube can often be operated at reduced filament voltage, as explained on sheet TYPES OF CATHODES in General Section.*AF POWER AMPLIFIER & MODULATOR — Class B**Maximum Ratings, Absolute Values:**

DC PLATE VOLTAGE. . . . . 8500 max. volts

MAX.—SIGNAL DC PLATE CURRENT\* . . . . . 2 max. amp

MAX.—SIGNAL PLATE INPUT\* . . . . . 12 max. kw

PLATE DISSIPATION\* . . . . . 5 max. kw

**Typical Operation:***Unless otherwise specified, values are for two tubes*

DC Plate Voltage. . . . . 5000 6000 7500 . . volts

DC Grid Voltage\*. . . . . -180 -230 -300 . . volts

Peak AF Grid-to-Grid Volt. . . . . 1460 1680 1700 . . volts

\* Averaged over any audio-frequency cycle of sine-wave form.

• See next page.



## TRANSMITTING TRIODE

|                                                         |      |      |      |    |       |
|---------------------------------------------------------|------|------|------|----|-------|
| Zero-Signal DC Plate Cur. . .                           | 0.4  | 0.4  | 0.4  | .. | amp   |
| Max.-Signal DC Plate Cur. . .                           | 3.2  | 3.6  | 3.2  | .. | amp   |
| Effective Load Resistance<br>(plate-to-plate) . . . . . | 2520 | 3680 | 5000 | .. | ohms  |
| Max.-Signal Driving Power<br>(Approx.) . . . . .        | 170  | 180  | 150  | .. | watts |
| Max.-Signal Power Output<br>(Approx.) . . . . .         | 8.8  | 12   | 15   | .. | kw    |

RF POWER AMPLIFIER - Class B Telephony

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

**Maximum Ratings, Absolute Values:**

|                             |           |       |
|-----------------------------|-----------|-------|
| DC PLATE VOLTAGE. . . . .   | 8500 max. | volts |
| DC PLATE CURRENT. . . . .   | 1.0 max.  | amp   |
| PLATE INPUT . . . . .       | 7.5 max.  | kw    |
| PLATE DISSIPATION . . . . . | 5.0 max.  | kw    |

**Typical Operation:**

|                                        |      |      |    |       |
|----------------------------------------|------|------|----|-------|
| DC Plate Voltage. . . . .              | 6000 | 7500 | .. | volts |
| DC Grid Voltage <sup>•</sup> . . . . . | -250 | -300 | .. | volts |
| Peak RF Grid Voltage. . . . .          | 920  | 1000 | .. | volts |
| DC Plate Current. . . . .              | 0.9  | 0.9  | .. | amp   |
| Driving Power (Approx.)**#. . . . .    | 95   | 80   | .. | watts |
| Power Output (Approx.) . . . . .       | 1.5  | 2    | .. | kw    |

PLATE-MODULATED RF POWER AMPLIFIER - Class C Telephony

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

**Maximum Ratings, Absolute Values:**

|                             |            |       |
|-----------------------------|------------|-------|
| DC PLATE VOLTAGE. . . . .   | 6000 max.  | volts |
| DC GRID VOLTAGE . . . . .   | -1000 max. | volts |
| DC PLATE CURRENT. . . . .   | 1.0 max.   | amp   |
| DC GRID CURRENT . . . . .   | 0.25 max.  | amp   |
| PLATE INPUT . . . . .       | 6.0 max.   | kw    |
| PLATE DISSIPATION . . . . . | 3.0 max.   | kw    |

**Typical Operation:**

|                                     |      |      |    |       |
|-------------------------------------|------|------|----|-------|
| DC Plate Voltage. . . . .           | 5000 | 6000 | .. | volts |
| DC Grid Voltage . . . . .           | -800 | -900 | .. | volts |
| Peak RF Grid Voltage. . . . .       | 1300 | 1420 | .. | volts |
| DC Plate Current. . . . .           | 0.9  | 1.0  | .. | amp   |
| DC Grid Current (Approx.)#. . . . . | 0.12 | 0.1  | .. | amp   |
| Driving Power (Approx.)#. . . . .   | 155  | 140  | .. | watts |
| Power Output (Approx.) . . . . .    | 2.75 | 4    | .. | kw    |

RF POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

*Key-down conditions per tube without modulation\*\**

**Maximum Ratings, Absolute Values:**

|                           |            |       |
|---------------------------|------------|-------|
| DC PLATE VOLTAGE. . . . . | 8500 max.  | volts |
| DC GRID VOLTAGE . . . . . | -1000 max. | volts |

<sup>•</sup>, \*\*, #, ##: See next page.



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## TRANSMITTING TRIODE

|                             |           |     |
|-----------------------------|-----------|-----|
| DC PLATE CURRENT. . . . .   | 2.0 max.  | amp |
| DC GRID CURRENT . . . . .   | 0.25 max. | amp |
| PLATE INPUT . . . . .       | 16 max.   | kw  |
| PLATE DISSIPATION . . . . . | 5 max.    | kw  |

**Typical Operation:**

|                                 |      |      |      |           |
|---------------------------------|------|------|------|-----------|
| DC Plate Voltage. . . . .       | 5000 | 6000 | 7500 | . . volts |
| DC Grid Voltage . . . . .       | -500 | -600 | -800 | . . volts |
| Peak RF Grid Voltage. . . . .   | 1200 | 1460 | 1830 | . . volts |
| DC Plate Current. . . . .       | 1.5  | 1.8  | 2.0  | . . amp   |
| DC Grid Current (Approx.)#. . . | 0.19 | 0.21 | 0.24 | . . amp   |
| Driving Power (Approx.)#. . .   | 220  | 290  | 400  | . . watts |
| Power Output (Approx.). . . .   | 5    | 7    | 10   | . . kw    |

● With ac filament excitation.

\*\* At crest of audio-frequency cycle with modulation factor of 1.0.

\* 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.

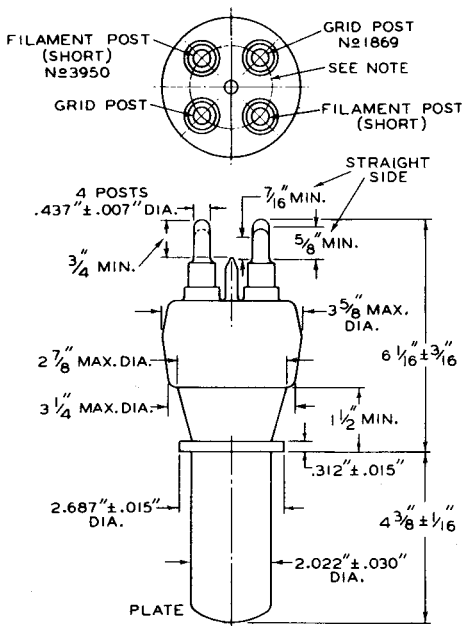
Data on operating frequencies for the 889-A are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.

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## TRANSMITTING TRIODE



**NOTE:** THE TUBE BASE SHALL BE CAPABLE OF ENTERING TO A DISTANCE OF 5/8" IN A FLAT-PLATE GAUGE HAVING FOUR HOLES .536" ± .001" DIAMETER ARRANGED ON A CIRCLE OF 2.125" ± .001" DIAMETER AT ANGLES OF 90° ± 10'.

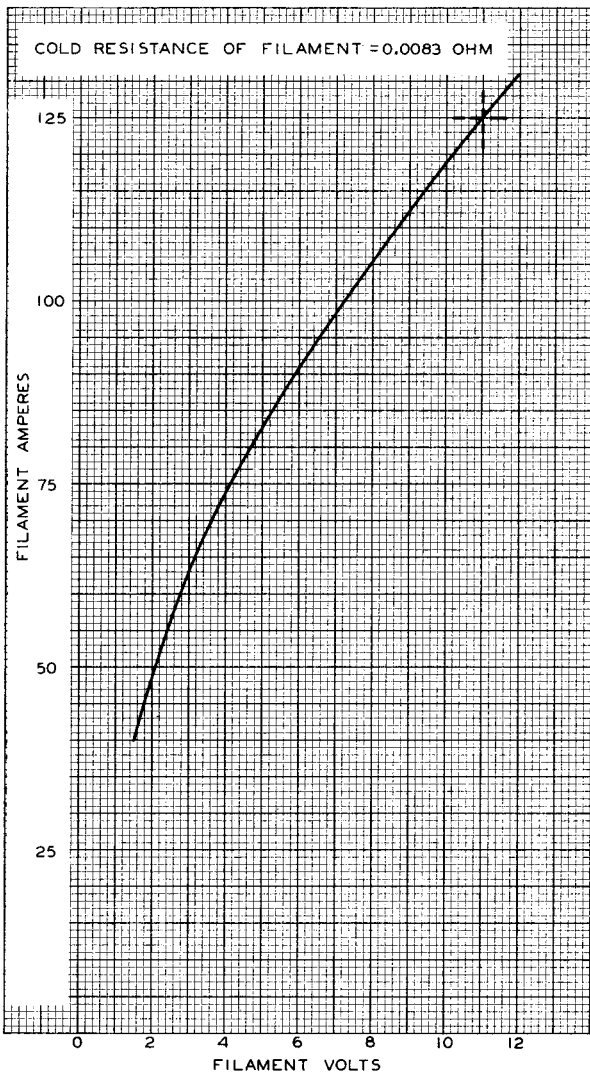
92CM-6039R2



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# AVERAGE FILAMENT CHARACTERISTIC



MAY 22, 1939

TUBE DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

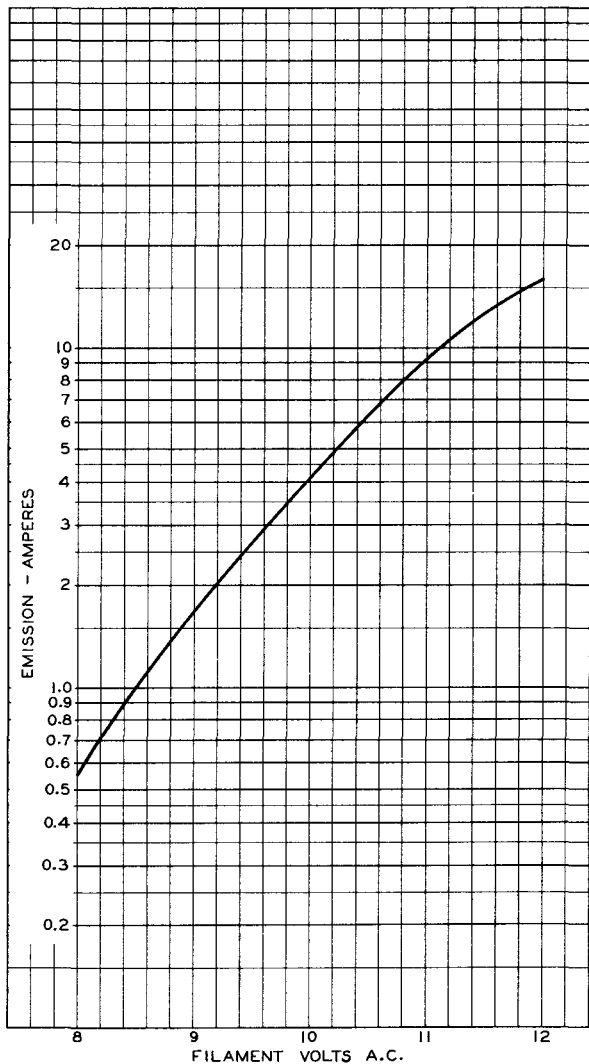
92C-6086

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# AVERAGE FILAMENT-EMISSION CHARACTERISTIC



JUNE 10, 1940

TUBE DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

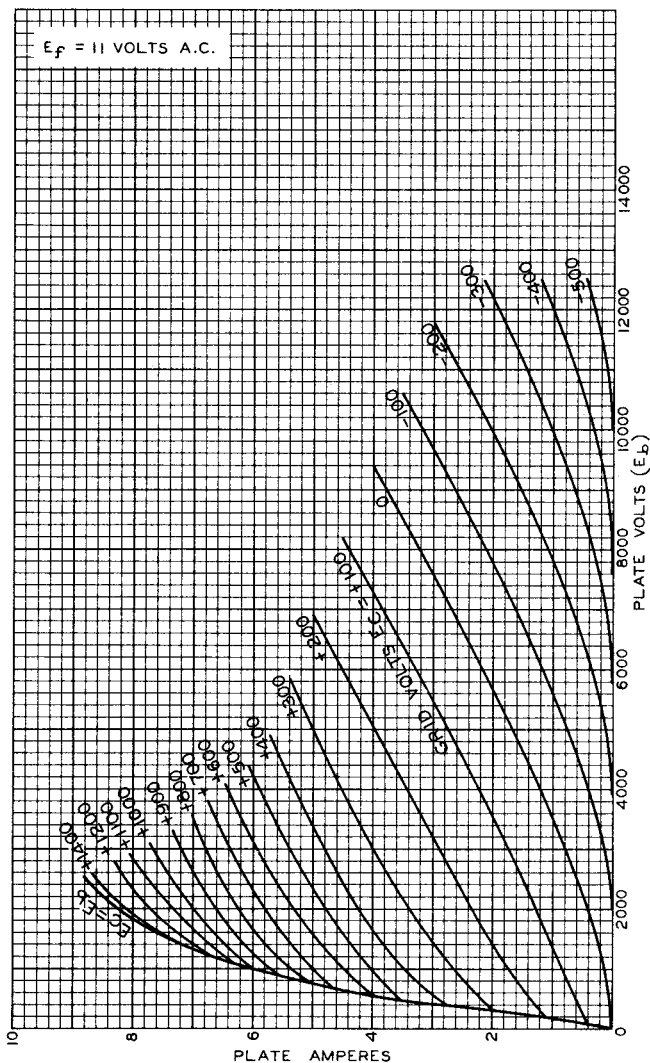
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# AVERAGE PLATE CHARACTERISTICS

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JUNE 14, 1939

TUBE DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

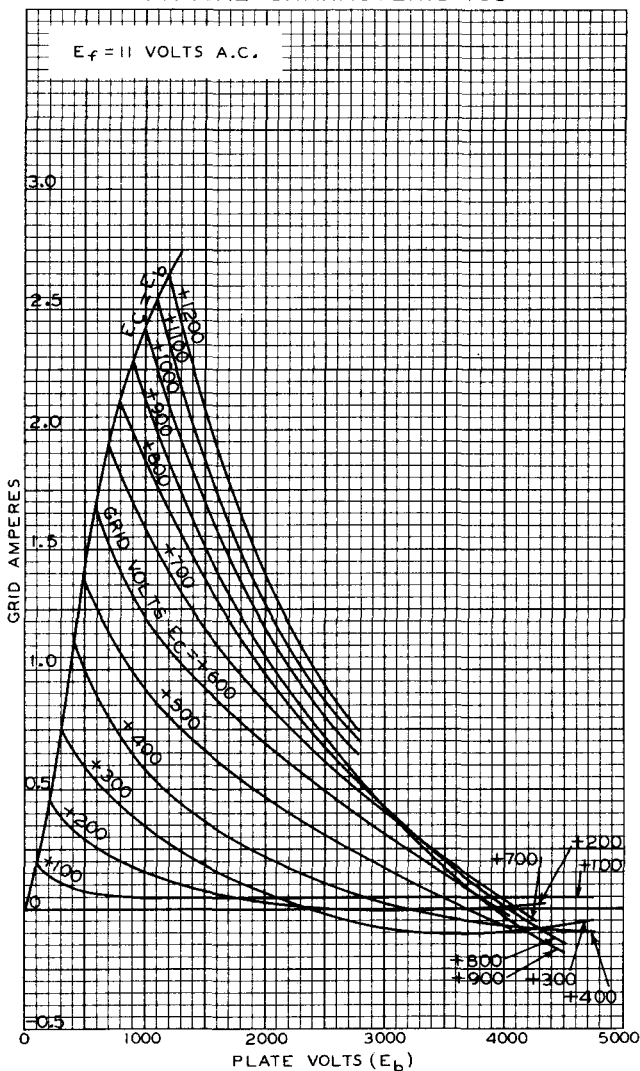
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## TYPICAL CHARACTERISTICS



JUNE 15, 1939

TUBE DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

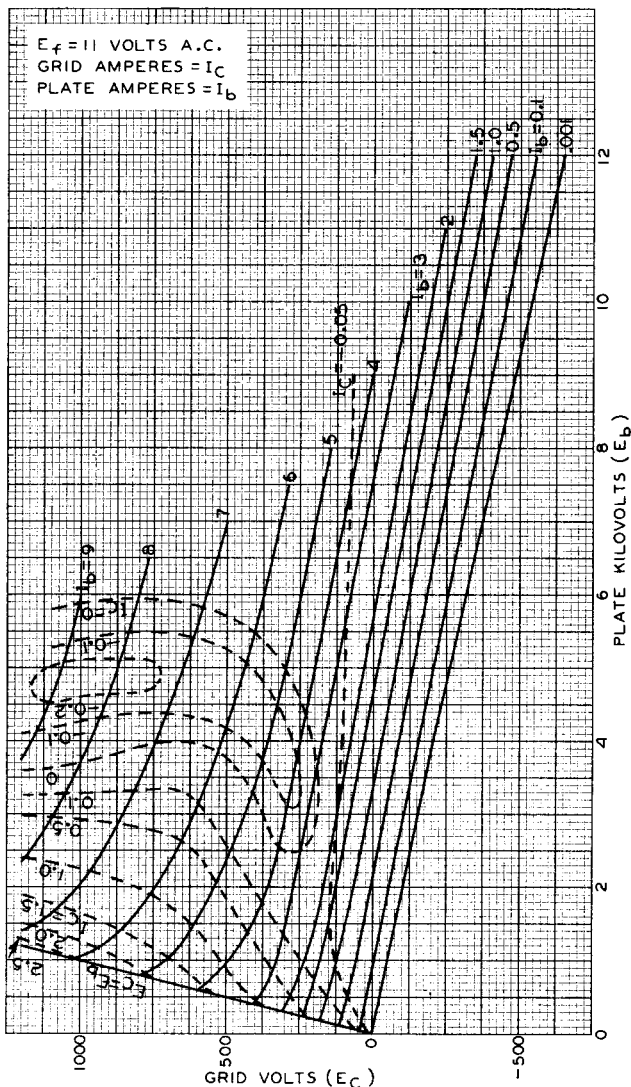
92C-6064



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## AVERAGE CONSTANT-CURRENT CHARACTERISTICS



MAY 22, 1939

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY