



6L6, 6L6-G

6L6  
6L6-G

## BEAM POWER AMPLIFIER

Heater  $\blacksquare$  Coated Unipotential Cathode  
 Voltage 6.3 a-c or d-c volts  
 Current 0.9 amp.

Direct Interelectrode Capacitances (Approx.):

|               | 6L6 <sup>o</sup> | 6L6-G <sup>oo</sup> |                |
|---------------|------------------|---------------------|----------------|
| Grid to Plate | 0.4              | 0.9                 | $\mu\text{pf}$ |
| Input         | 10               | 11.5                | $\mu\text{pf}$ |
| Output        | 12               | 9.5                 | $\mu\text{pf}$ |

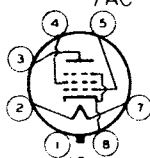
|                        |                              |                               |
|------------------------|------------------------------|-------------------------------|
| Maximum Overall Length | 4-5/16"                      | 5-5/16"                       |
| Maximum Seated Height  | 3-3/4"                       | 4-3/4"                        |
| Maximum Diameter       | 1-5/8"                       | 2-1/16"                       |
| Bulb                   | Metal Shell, MT-10           | ST-16                         |
| Base                   | { Small Wafer<br>Octal 7-Pin | { Medium Shell<br>Octal 7-Pin |
| Basing Designation     | 7AC                          | G-7AC                         |

Pin 1 { 6L6, Shell  
6L6-G, No Con.

Pin 2-Heater

Pin 3-Plate

Mounting Position



Pin 4-Screen

Pin 5-Grid

Pin 7-Heater

Pin 8-Cathode

Any

BOTTOM VIEW

Maximum Ratings Are Design-Center Values

## SINGLE-TUBE AMPLIFIER

|                    |                |
|--------------------|----------------|
| Plate Voltage      | 360 max. volts |
| Screen Voltage     | 270 max. volts |
| Plate Dissipation  | 19 max. watts  |
| Screen Dissipation | 2.5 max. watts |

Typical Operation and Characteristics - Class  $A_1$  Amplifier:  $\clubsuit$ 

|                        | Fixed Bias |       | Cathode Bias |      |                  |
|------------------------|------------|-------|--------------|------|------------------|
| Plate                  | 250        | 350   | 250          | 300  | volts            |
| Screen                 | 250        | 250   | 250          | 200  | volts            |
| Grid*                  | -14        | -18   | -            | -    | volts            |
| Cathode Resistor       | -          | -     | 170          | 220  | ohms             |
| Peak A-F Grid Volt.    | 14         | 18    | 14           | 12.5 | volts            |
| Zero-Sig. Plate Cur.   | 72         | 54    | 75           | 51   | ma.              |
| Max.-Sig. Plate Cur.   | 79         | 66    | 78           | 54.5 | ma.              |
| Zero-Sig. Screen Cur.  | 5          | 2.5   | 5.4          | 3    | ma.              |
| Max.-Sig. Screen Cur.  | 7.3        | 7     | 7.2          | 4.6  | ma.              |
| Plate Res.             | 22500      | 33000 | -            | -    | ohms             |
| Transcond.             | 6000       | 5200  | -            | -    | $\mu\text{mhos}$ |
| Load Resistance        | 2500       | 4200  | 2500         | 4500 | ohms             |
| Total Harmonic Dist.   | 10         | 15    | 10           | 11   | %                |
| Max.-Sig. Power Output | 6.5        | 10.8  | 6.5          | 6.5  | watts            |

SINGLE-TUBE AMPLIFIER (Triode Connection)  $\dagger$ 

|                                    |                |
|------------------------------------|----------------|
| Plate Voltage                      | 250 max. volts |
| Plate & Screen Dissipation (Total) | 10 max. watts  |

Typical Operation and Characteristics - Class  $A_1$  Amplifier:  $\clubsuit$ 

|       | Fixed Bias | Cathode Bias |       |
|-------|------------|--------------|-------|
| Plate | 250        | 250          | volts |

$\blacksquare$  In circuits where the cathode is not directly connected to the heater, the potential difference between heater and cathode should be kept as low as possible.

 $\circ$  With shell connected to cathode. $\circ\circ$  With no external shield. $\dagger$  Screen connected to plate. $\leftarrow$  Indicates a change. $\clubsuit$ , \*: See next page.

May 1, 1942

RCA RADOTRON DIVISION  
RCA MANUFACTURING COMPANY, INC.

DATA



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## BEAM POWER AMPLIFIER

(continued from preceding page)

|                        | Fixed Bias | Cathode Bias |       |
|------------------------|------------|--------------|-------|
| Grid*                  | -20        | -            | volts |
| Cathode Resistor       | -          | 490          | ohms  |
| Peak A-F Grid Voltage  | 20         | 20           | volts |
| Zero-Sig. Plate Cur.   | 40         | 40           | ma.   |
| Max.-Sig. Plate Cur.   | 44         | 42           | ma.   |
| Plate Resistance       | 1700       | -            | ohms  |
| Amp. Factor            | 8          | -            |       |
| Transconductance       | 4700       | -            | μmhos |
| Load Resistance        | 5000       | 6000         | ohms  |
| Total Harmonic Dist.   | 5          | 6            | %     |
| Max.-Sig. Power Output | 1.4        | 1.3          | watts |

## PUSH-PULL AMPLIFIER

|                    |          |       |
|--------------------|----------|-------|
| Plate Voltage      | 360 max. | volts |
| Screen Voltage     | 270 max. | volts |
| Plate Dissipation  | 19 max.  | watts |
| Screen Dissipation | 2.5 max. | watts |

Typical Operation - Class A<sub>1</sub> Amplifier:\*

Unless otherwise specified, values are for 2 tubes

|                                                 | Fixed Bias |       | Cathode Bias |       |
|-------------------------------------------------|------------|-------|--------------|-------|
| Plate                                           | 250        | 270   | 270          | volts |
| Screen                                          | 250        | 270   | 270          | volts |
| Grid*                                           | -16        | -17.5 | -            | volts |
| Cathode Resistor                                | -          | -     | 125          | ohms  |
| Peak A-F Grid-to-<br>Grid Voltage               | 32         | 35    | 40           | volts |
| Zero-Sig. Plate Cur.                            | 120        | 134   | 134          | ma.   |
| Max.-Sig. Plate Cur.                            | 140        | 155   | 145          | ma.   |
| Zero-Sig. Screen Cur.                           | 10         | 11    | 11           | ma.   |
| Max.-Sig. Screen Cur.                           | 16         | 17    | 17           | ma.   |
| Plate Res.                                      | 24500      | 23500 | -            | ohms  |
| Transconductance                                | 5500       | 5700  | -            | μmhos |
| Effective Load Resist-<br>ance (plate to plate) | 5000       | 5000  | 5000         | ohms  |
| Total Harmonic Dist.                            | 2          | 2     | 2            | %     |
| Max.-Sig. Power Output                          | 14.5       | 17.5  | 18.5         | watts |

## PUSH-PULL AMPLIFIER

|                    |          |       |
|--------------------|----------|-------|
| Plate Voltage      | 360 max. | volts |
| Screen Voltage     | 270 max. | volts |
| Plate Dissipation  | 19 max.  | watts |
| Screen Dissipation | 2.5 max. | watts |

Typical Operation - Class AB<sub>1</sub> Amplifier:\*

Unless otherwise specified, values are for 2 tubes

|        | Fixed Bias |       | Cathode Bias |       |
|--------|------------|-------|--------------|-------|
| Plate  | 360        | 360   | 360          | volts |
| Screen | 270        | 270   | 270          | volts |
| Grid*  | -22.5      | -22.5 | -            | volts |

\* Subscript 1 indicates that grid current does not flow during any part of input cycle.

\* See next page.



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## BEAM POWER AMPLIFIER

(continued from preceding page)

|                                            | Fixed Bias |      | Cathode Bias |       |
|--------------------------------------------|------------|------|--------------|-------|
| Cathode Resistor                           | -          | -    | 250          | ohms  |
| Peak A-F Grid-to-Grid Voltage              | 45         | 45   | 57           | volts |
| Zero-Sig. Plate Cur.                       | 88         | 88   | 88           | ma.   |
| Max.-Sig. Plate Cur.                       | 132        | 140  | 100          | ma.   |
| Zero-Sig. Screen Cur.                      | 5          | 5    | 5            | ma.   |
| Max.-Sig. Screen Cur.                      | 15         | 11   | 17           | ma.   |
| Effective Load Resistance (plate to plate) | 6600       | 3800 | 9000         | ohms  |
| Total Harmonic Dist.                       | 2          | 2    | 4            | %     |
| Max.-Sig. Power Output                     | 26.5       | 18   | 24.5         | watts |

## PUSH-PULL AMPLIFIER

|                    |                |
|--------------------|----------------|
| Plate Voltage      | 360 max. volts |
| Screen Voltage     | 270 max. volts |
| Plate Dissipation  | 19 max. watts  |
| Screen Dissipation | 2.5 max. watts |

Typical Operation - Class AB<sub>2</sub> Amplifier:\*

Unless otherwise specified, values are for 2 tubes

|                                            | Fixed Bias |       |
|--------------------------------------------|------------|-------|
| Plate                                      | 360        | 360   |
| Screen                                     | 225        | 270   |
| Grid                                       | -18        | -22.5 |
| Peak A-F Grid-to-Grid Volt.                | 52         | 72    |
| Zero-Sig. Plate Cur.                       | 78         | 88    |
| Max.-Sig. Plate Cur.                       | 142        | 205   |
| Zero-Sig. Screen Cur.                      | 3.5        | 5     |
| Max.-Sig. Screen Cur.                      | 11         | 16    |
| Effective Load Resistance (plate to plate) | 6000       | 3800  |
| Peak Grid-Input Power #                    | 140        | 270   |
| Total Harmonic Distortion **               | 2          | 2     |
| Max.-Sig. Power Output                     | 31         | 47    |

\* Subscript 2 indicates that grid current flows during some part of input cycle.

# Driver stage should be capable of supplying the grids of the class AB<sub>2</sub> stage with the specified peak values at low distortion. The effective resistance per grid circuit of the class AB<sub>2</sub> stage should be kept below 500 ohms and the effective impedance at the highest desired response frequency should not exceed 700 ohms.

\* The type of input coupling used should not introduce too much resistance in the grid circuit. Transformer- or impedance-coupling devices are recommended. When the grid circuit has a resistance not higher than 0.1 megohm, fixed bias may be used; for higher values, cathode bias is required. With cathode bias, the grid circuit may have a resistance not to exceed 0.5 megohm. Fixed-bias values up to 10% of each typical screen voltage can be used without increasing distortion, when the push-pull connection is used.

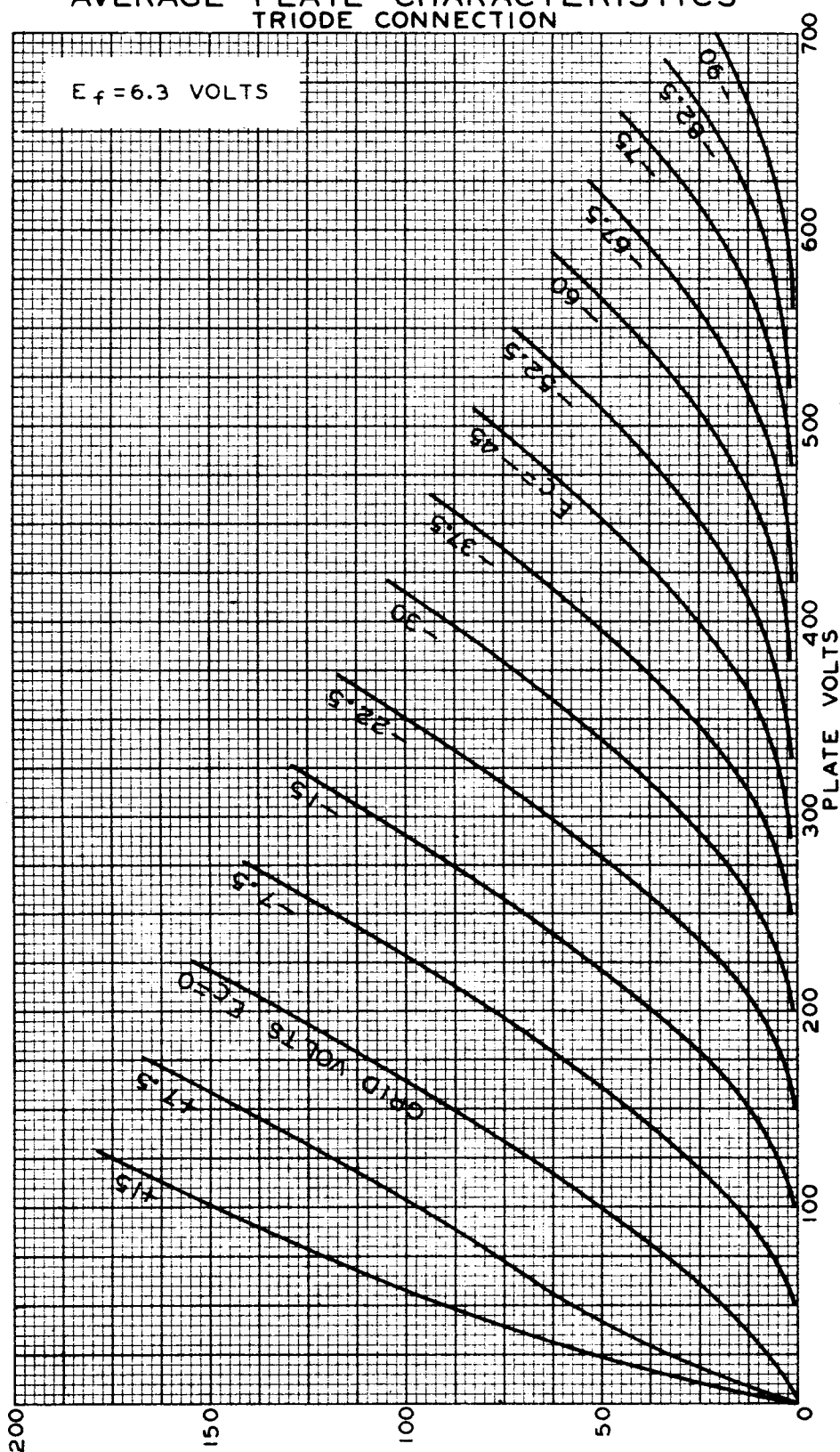
\*\* With zero-impedance driver and perfect regulation, plate-circuit distortion does not exceed 2%. In practice, plate-voltage regulation, screen-voltage regulation, and grid-bias regulation should be not greater than 5%, 5%, and 3%, respectively.

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# AVERAGE PLATE CHARACTERISTICS TRIODE CONNECTION



SEPT. 6 1938

PLATE MILLIAMPERES

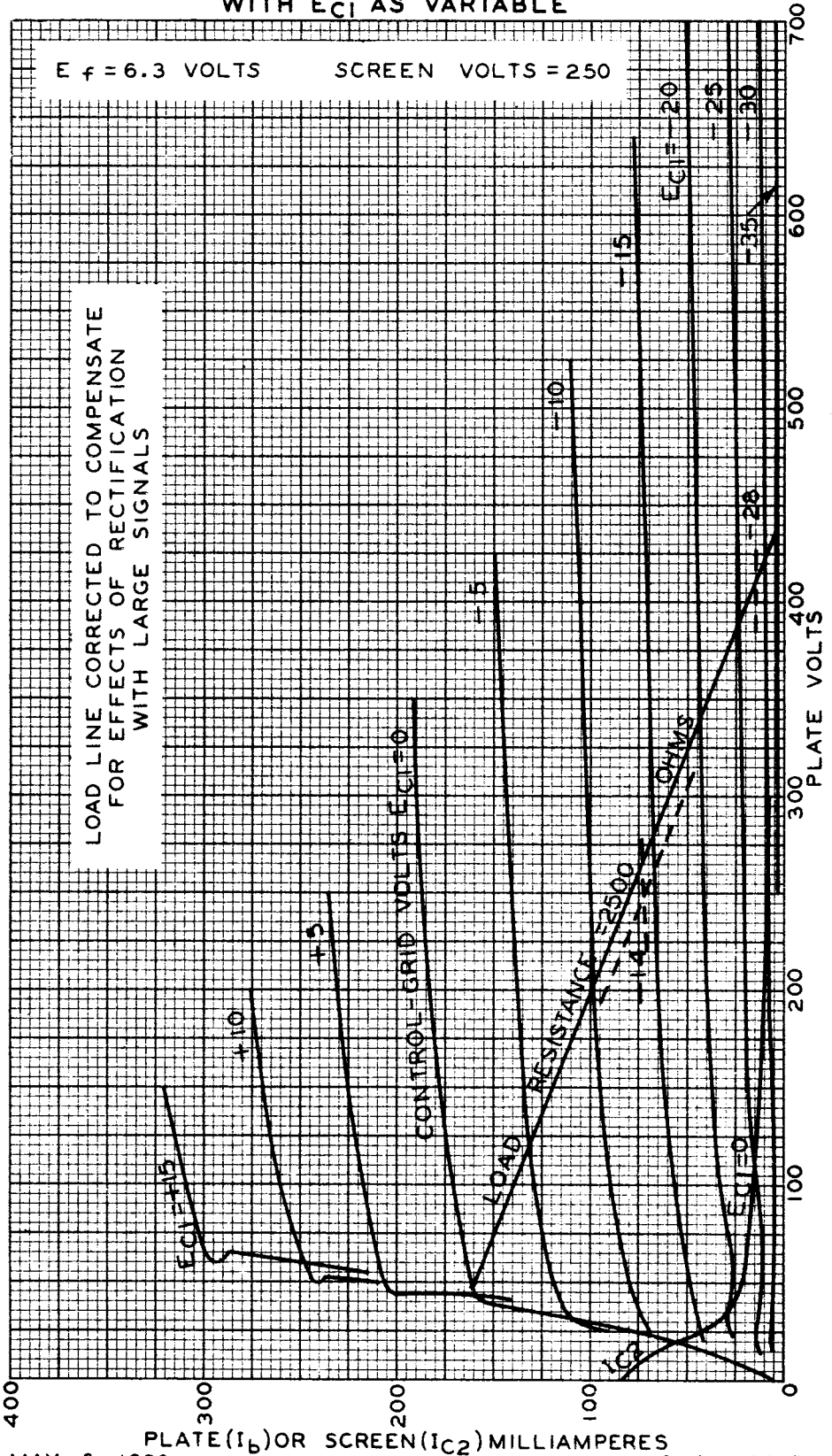
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RCA MANUFACTURING COMPANY, INC.

92C-4966



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# 6L6 AVERAGE PLATE CHARACTERISTICS WITH $E_{C1}$ AS VARIABLE



MAY 6, 1936

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RCA MANUFACTURING COMPANY, INC.

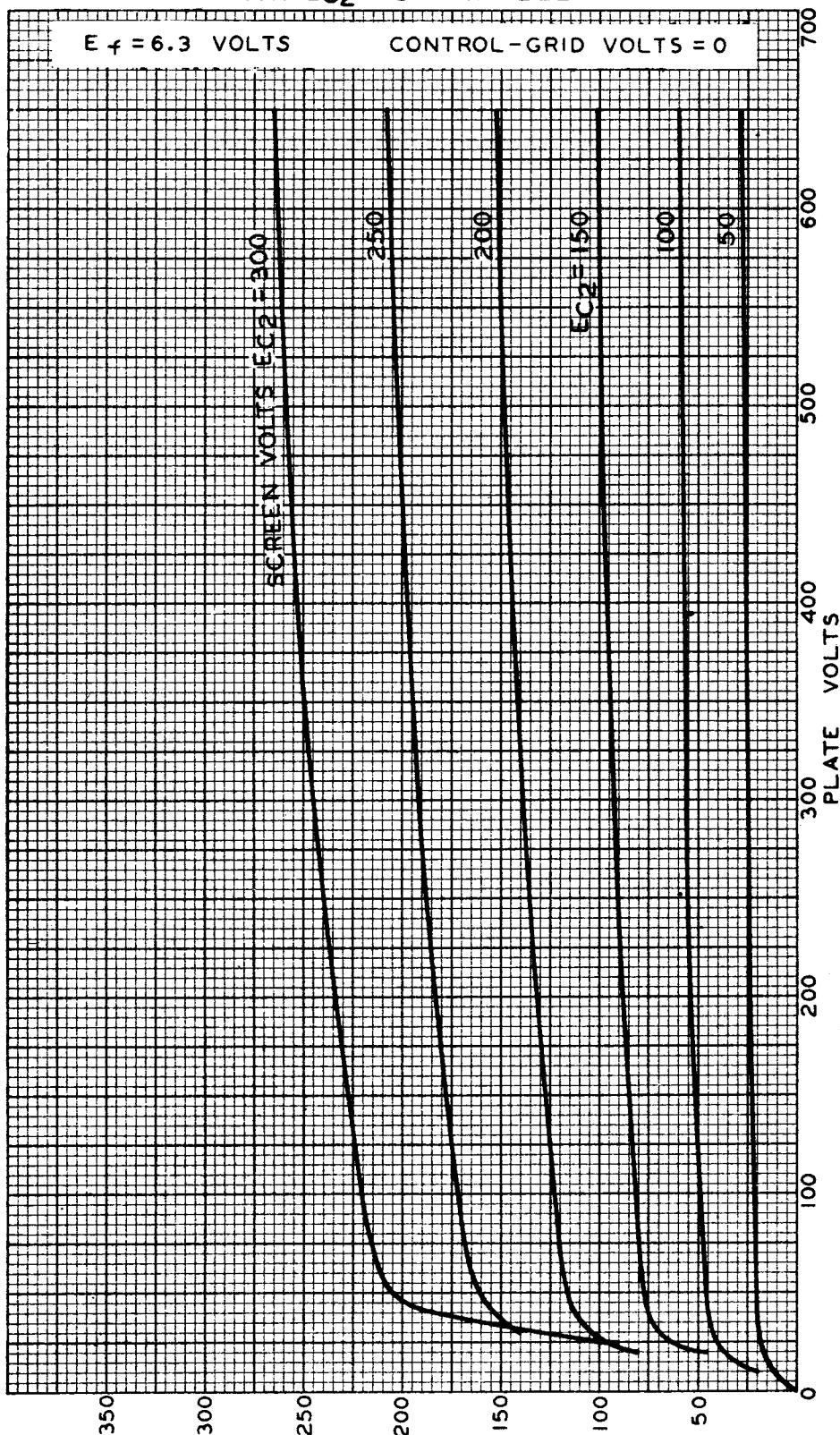
92C-4581R1

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# AVERAGE PLATE CHARACTERISTICS WITH $EC_2$ AS VARIABLE



MAY 8, 1936

RCA RADOTRON DIVISION  
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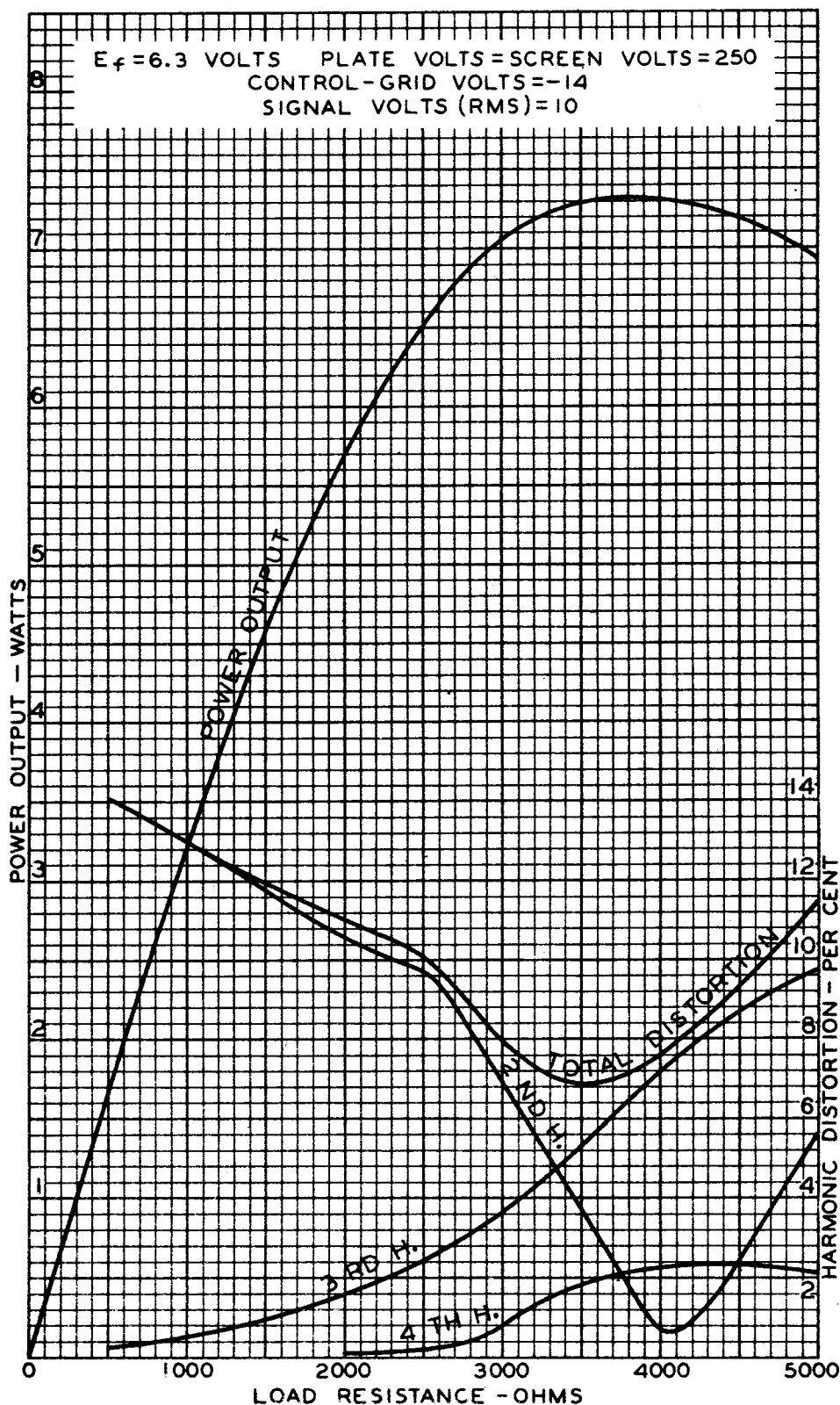
92C-4580R1



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## OPERATION CHARACTERISTICS



MAY 7, 1936

RCA RADOTRON DIVISION  
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92C-4608

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## OPERATION CHARACTERISTICS

$E_f = 6.3$  VOLTS PLATE VOLTS = SCREEN VOLTS = 250  
CONTROL-GRID VOLTS = -14  
LOAD RESISTANCE (OHMS) = 2500

