Rogers Electronic Tubes & Components

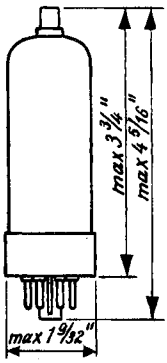
from JETEC release #1663, June 11, 1956
& JEDEC release #1663B, Feb. 22, 1960 25E5
sponsor: Rogers Majestic Electronics

DESCRIPTION: Output pentode for use as line output tube in television receivers.

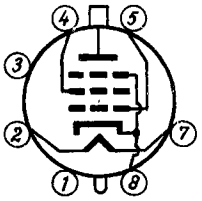
MECHANICAL DATA

Cathode	coated, unipotential
Base	B7-59
Bulb	T9
Outline	see drawing
Basing	8GT
Top cap	C1-2
Mounting position	any

TUBE OUTLINE



BOTTOM VIEW OF BASE



BASE PIN NO.	ELEMENT
1	Internal connection
2	Heater
3	Internal connection
4	Grid No.2
5	Grid No.1
7	Heater
8	Cathode, grid No.3
Top	Plate

HEATER DATA

Heater voltage	25 volts
Heater current	300 mamps

DIRECT INTERELECTRODE CAPACITANCES

Grid No.1 to all other elements except plate	17.5 μμF
Plate to all other elements except grid No.1	8 μμF
Plate to grid No.1	max. 1.1 μμF

MAXIMUM RATINGS (Design Center Values)

Plate voltage	max.	250	volts
Plate voltage without current	max.	550	volts
Positive peak plate voltage	max.	7000	volts [1]
Negative peak plate voltage	max.	1500	volts [1]
Grid No.2 voltage	max.	250	volts
Grid No.2 voltage without current	max.	550	volts
Plate dissipation Grid No.2 dissipation Plate and grid No.2 dissipation together	see curves on page		
Negative peak grid No.1 voltage	max.	1000	volts [1]
Cathode current	max.	200	mamps
Grid No.1 circuit resistance	max.	0.5	megohm
Grid No.1 circuit resistance (for line output application only)	max.	2.2	megohms
Voltage between cathode and heater			
alternating voltage	max.	250	volts(rms)
cathode pos. with respect to heater	max.	250	volts
cathode neg. with respect to heater	max.	200	volts
Circuit resistance between cathode and heater	max.	20 000	ohms

TYPICAL CHARACTERISTICS

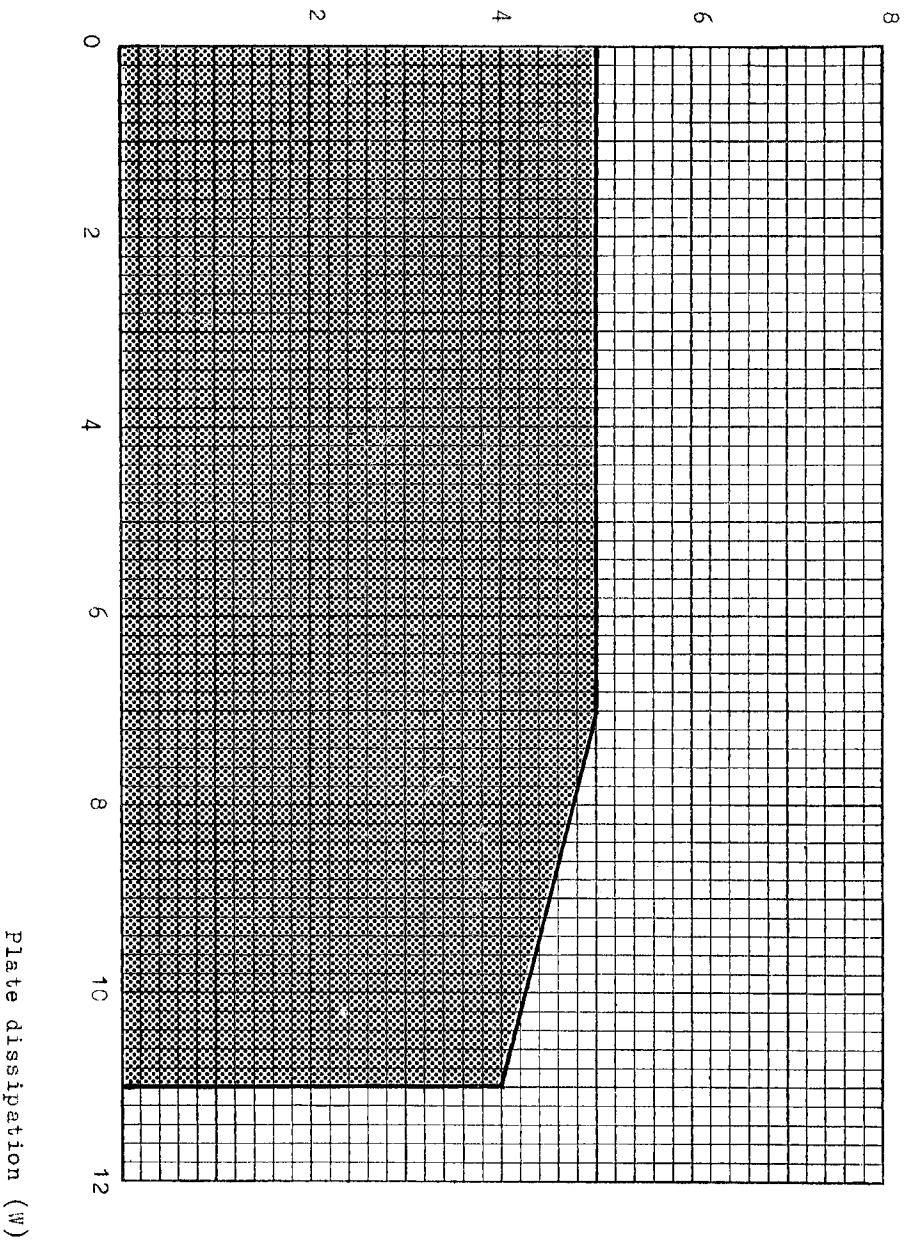
Plate voltage	100	volts
Grid No.2 voltage	100	volts
Grid No.1 voltage	-8.2	volts
Plate current	100	mamps
Grid No.2 current	7	mamps
Transconductance	14000	micromhos
Plate resistance	5000	ohms
Amplification factor of grid No.2 with respect to grid No.1	5.6	

[1])valid for application in line output circuits where the max. pulse duration is 22% of a cycle with a max. of 18 microseconds

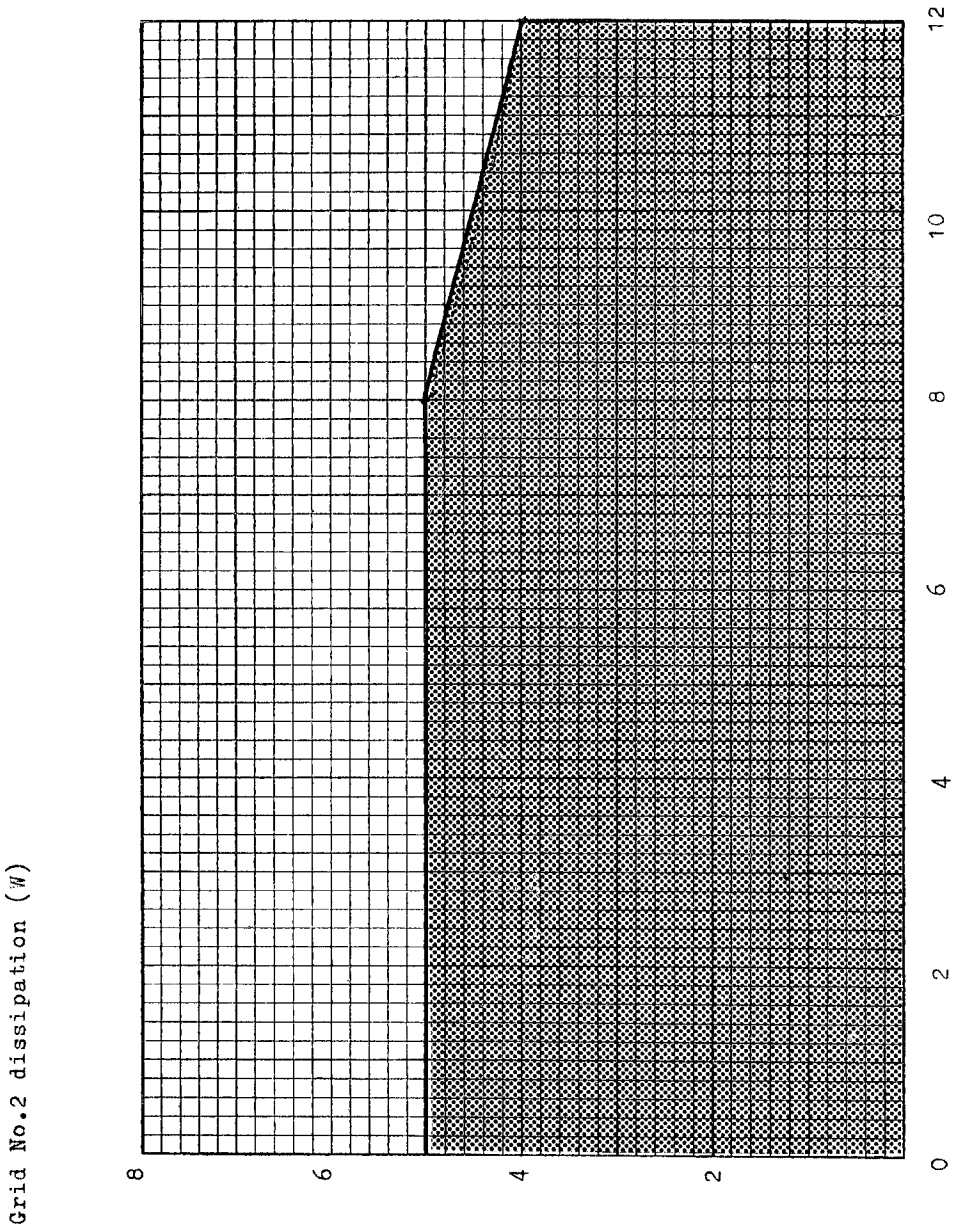
REMARKS

If the tube operates below the knee Barkausen oscillations can occur. In general this can be avoided by inserting a series resistor in grid No.2 lead, having a value of min. 2200 ohms.

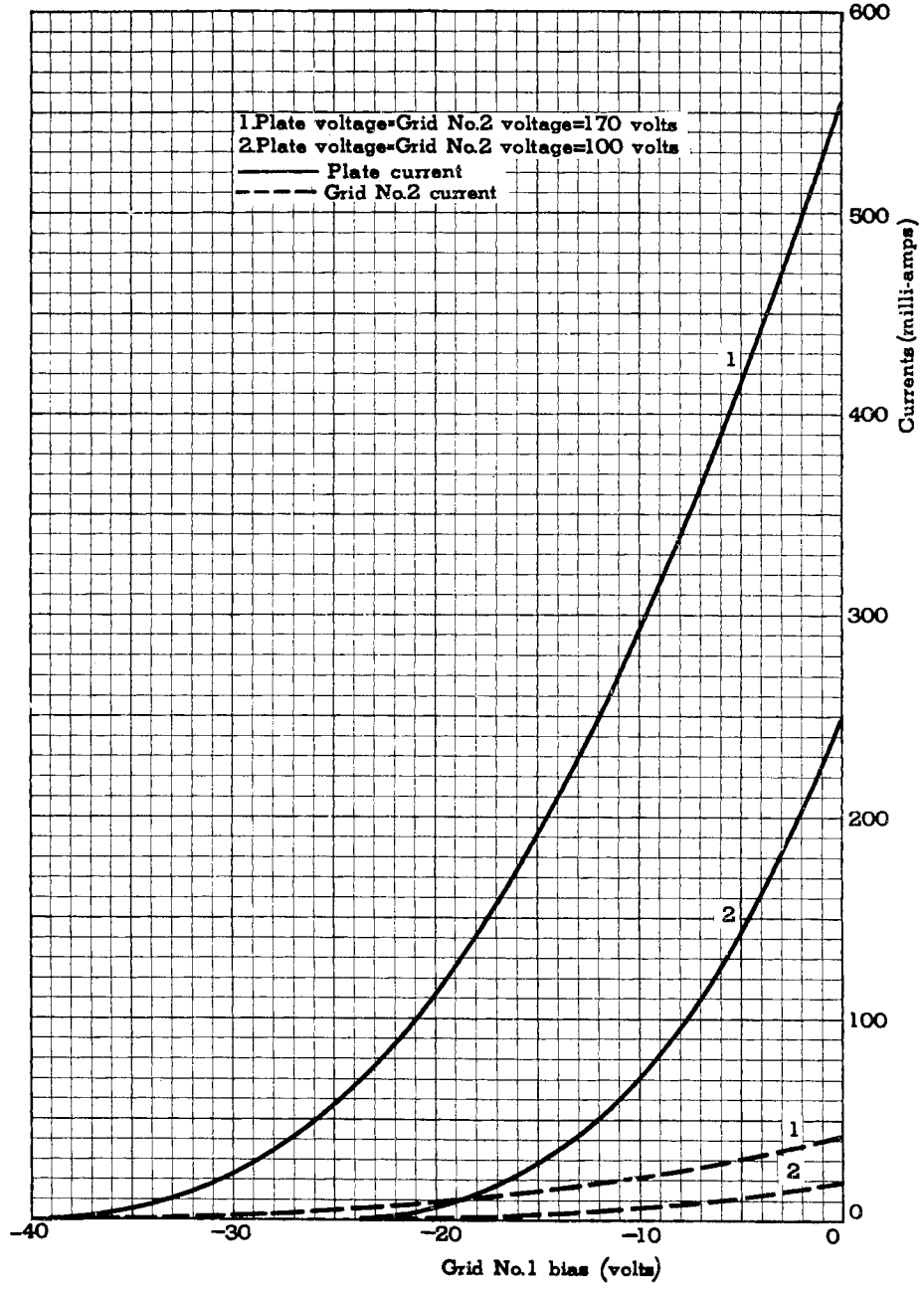
The min. drive at V_{ap} = 5000 V is 100 V
and at V_{ap} = 7000 V 120 V

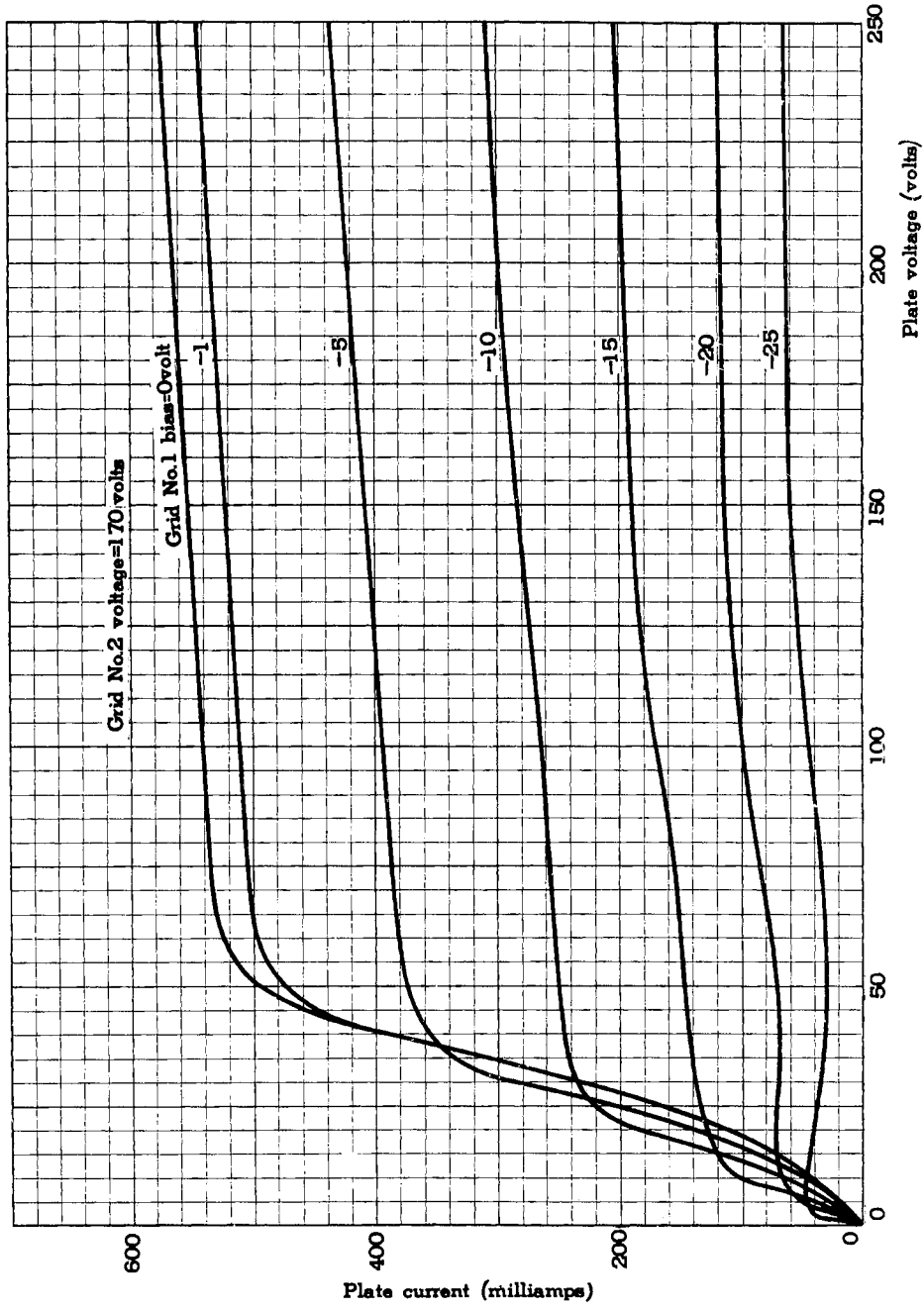


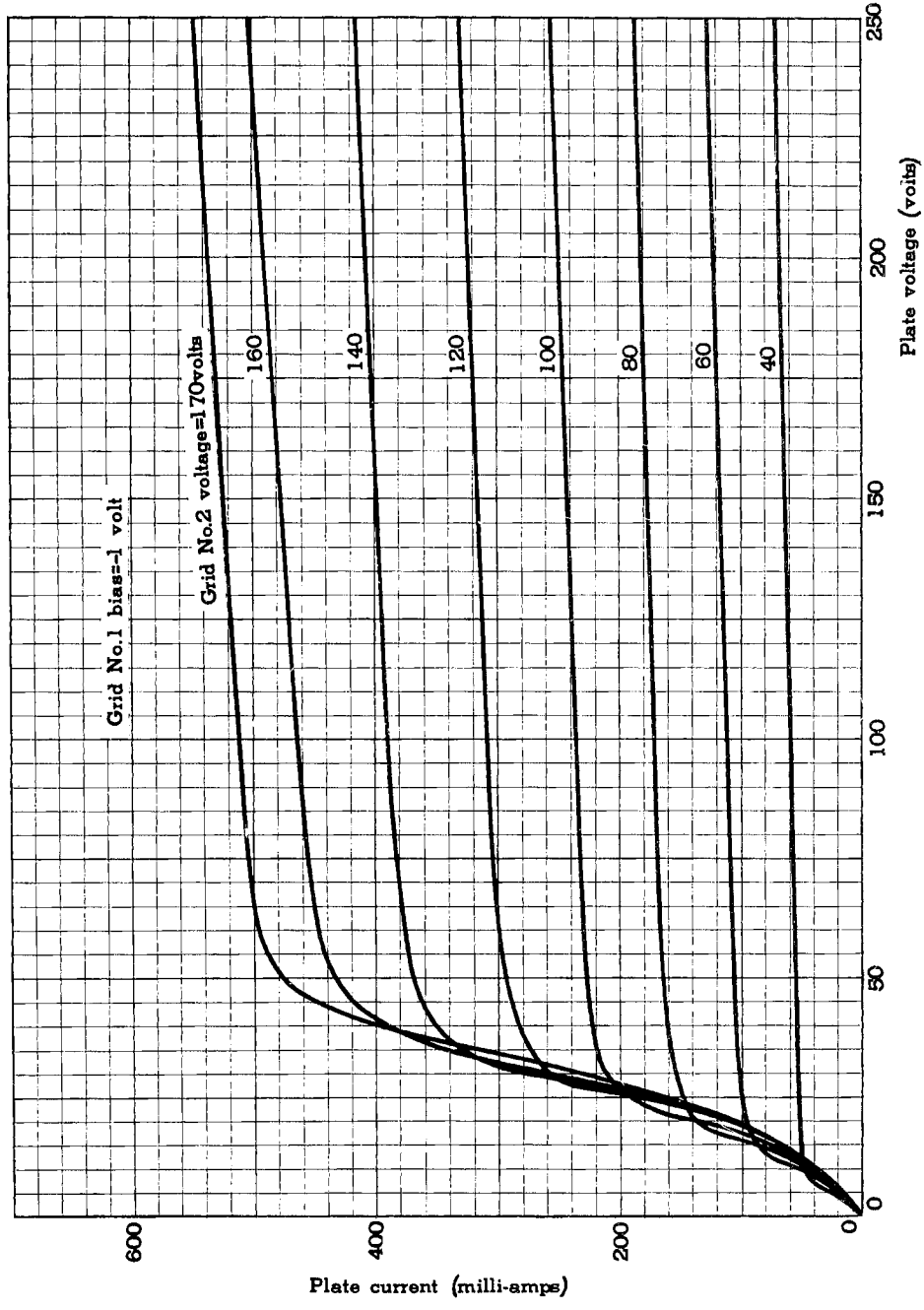
Area of permissible operation (for stabilised line-output circuits). The maximum permissible dissipations should not be exceeded with the chosen maximum mean value of the beam current of the picture tube. If necessary a protecting device should be applied in order to avoid exceeding these dissipations

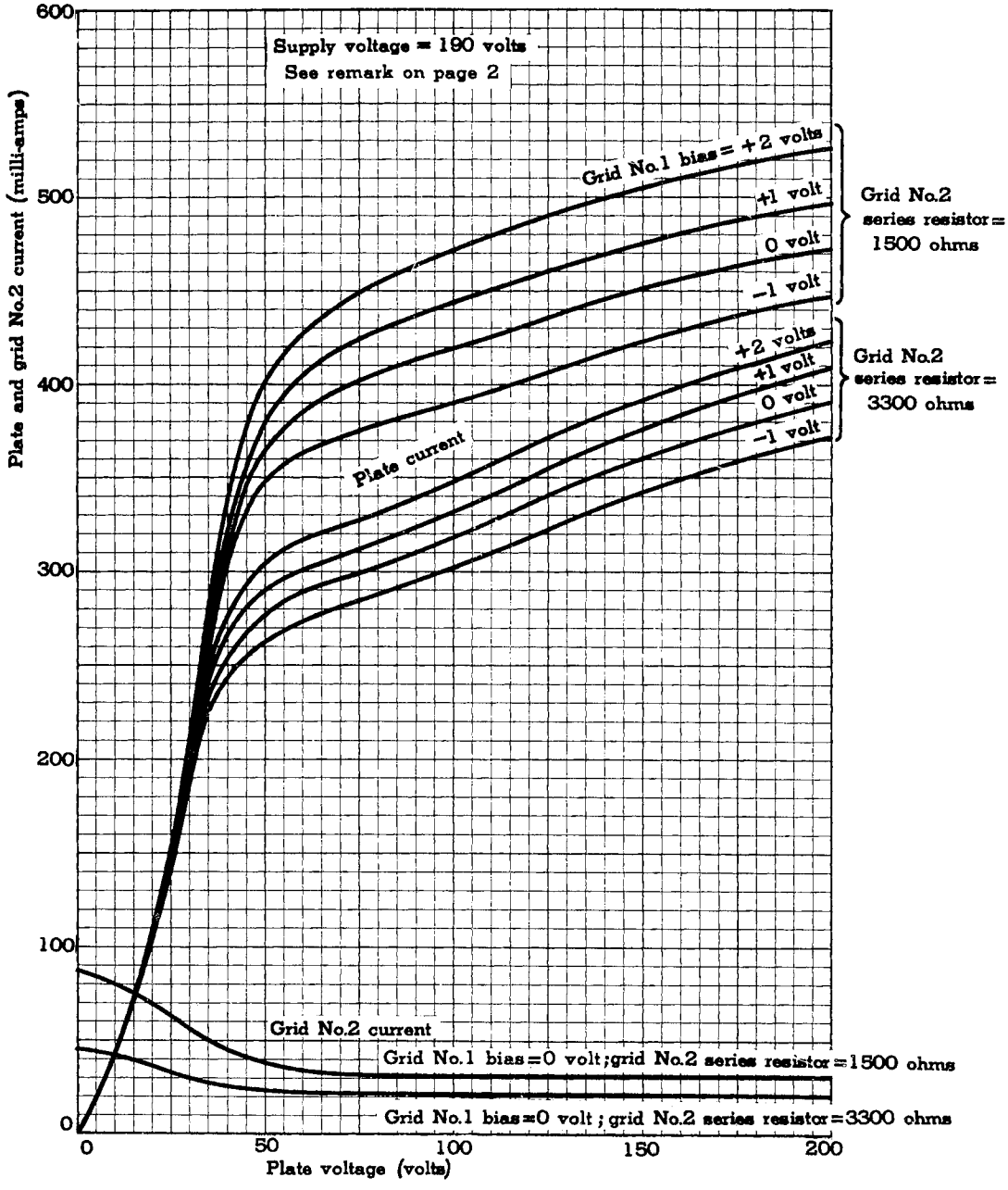


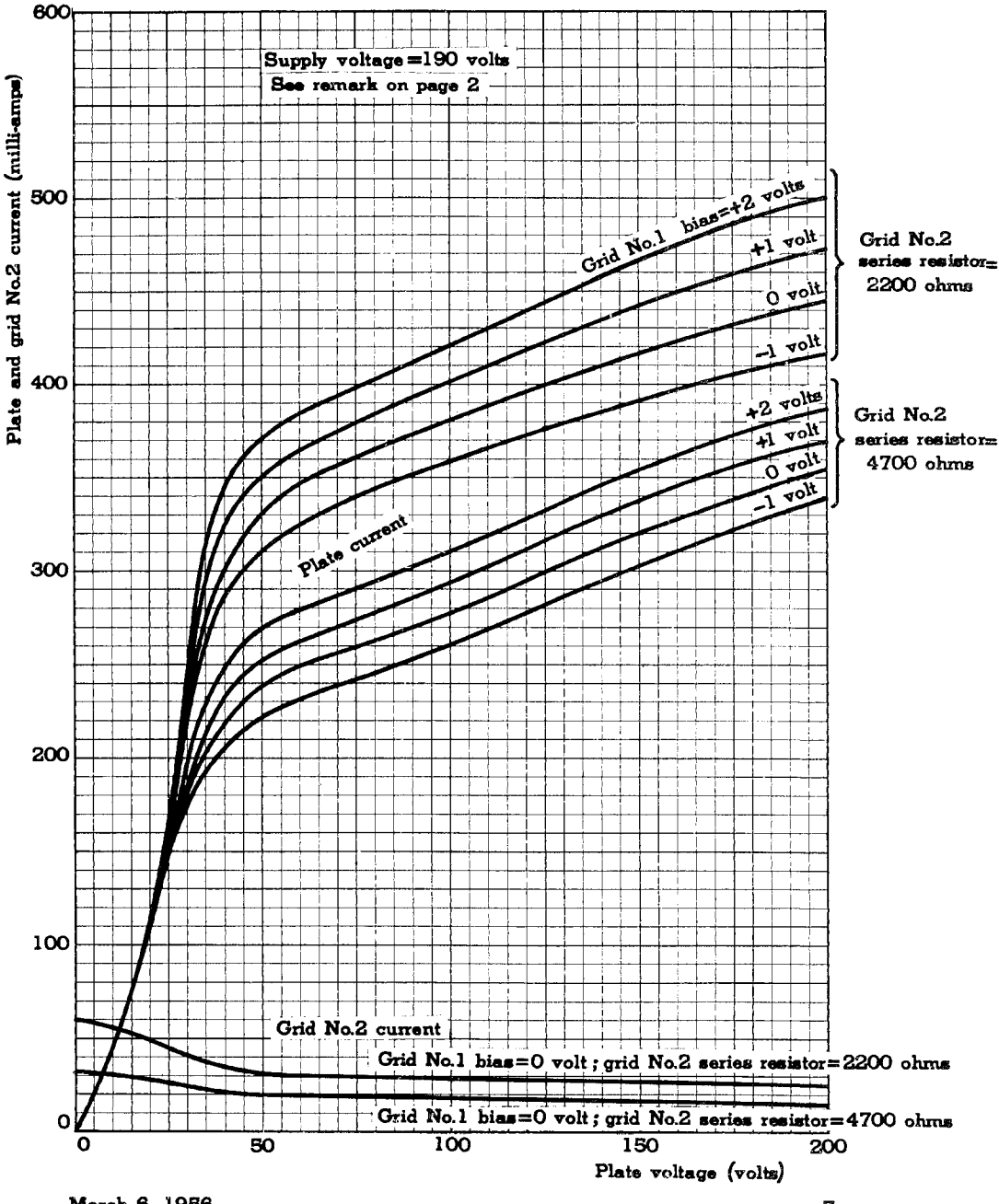
Area of permissible operation

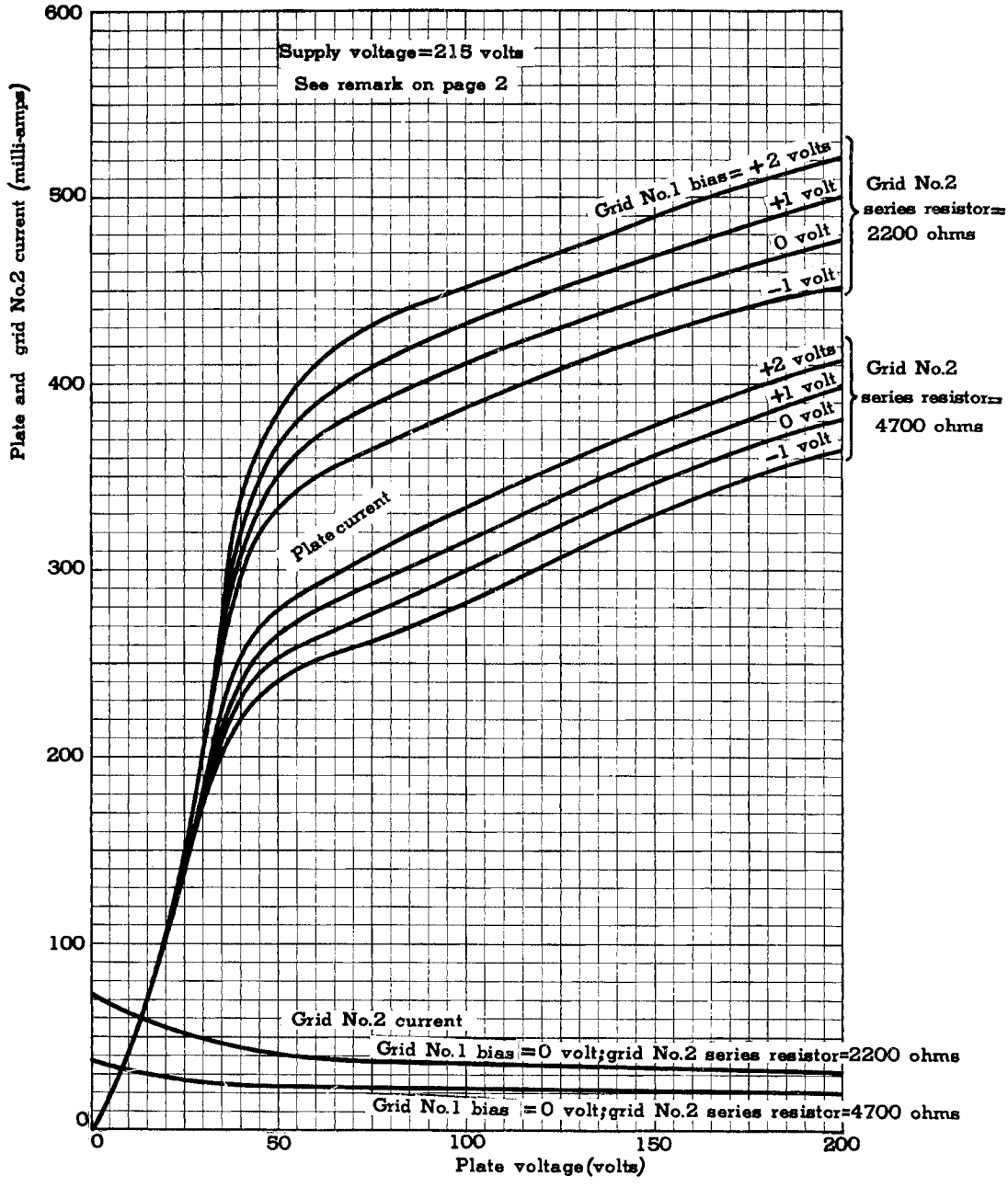

1 Plate voltage=Grid No.2 voltage=170 volts
2 Plate voltage=Grid No.2 voltage=100 volts
Plate current
Grid No.2 current
600
500
400
300
200
100
0
Currents (milli-amps)
1
2
1
2
-40
-30
-20
-10
0
Grid No.1 bias (volts)

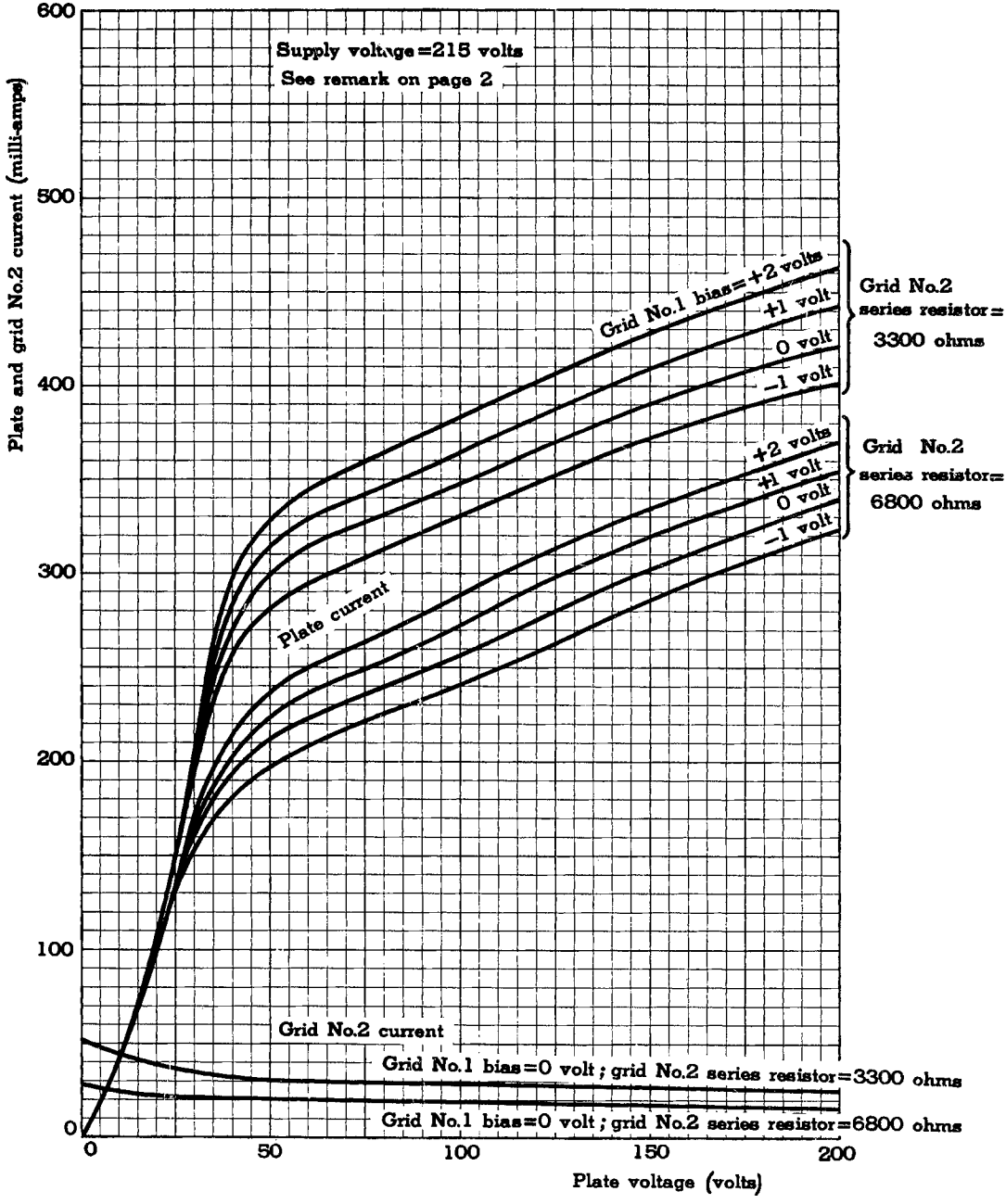

Grid No.2 voltage=170 volts
Grid No.1 bias=0volt
-1
-5
-10
-15
-20
-25
0
50
100
150
200
250
Plate voltage (volts)
0
200
400
600
Plate current (milliamps)


Grid No.1 bias=-1 volt
Grid No.2 voltage=170volts
160
140
120
100
80
60
40
0
50
100
150
200
250
Plate voltage (volts)
0
200
400
600
Plate current (milli-amps)


Supply voltage = 190 volts
See remark on page 2
Grid No.1 bias = +2 volts
+1 volt
0 volt
−1 volt
Grid No.2 series resistor = 1500 ohms
+2 volts
+1 volt
0 volt
−1 volt
Grid No.2 series resistor = 3300 ohms
Plate current
Grid No.2 current
Grid No.1 bias = 0 volt; grid No.2 series resistor = 1500 ohms
Grid No.1 bias = 0 volt; grid No.2 series resistor = 3300 ohms
Plate and grid No.2 current (milli-amps)
600
500
400
300
200
100
0
0
50
100
150
200
Plate voltage (volts)


Supply voltage=190 volts
See remark on page 2
Plate and grid No.2 current (milli-amps)
600
500
400
300
200
100
0
Grid No.1 bias=+2 volts
+1 volt
0 volt
−1 volt
Grid No.2 series resistor= 2200 ohms
+2 volts
+1 volt
0 volt
−1 volt
Grid No.2 series resistor= 4700 ohms
Plate current
Grid No.2 current
Grid No.1 bias=0 volt; grid No.2 series resistor=2200 ohms
Grid No.1 bias=0 volt; grid No.2 series resistor=4700 ohms
0
50
100
150
200
Plate voltage (volts)


Supply voltage=215 volts
See remark on page 2
Plate and grid No.2 current (milli-amps)
600
500
400
300
200
100
0
Grid No.1 bias= +2 volts
+1 volt
0 volt
−1 volt
Grid No.2 series resistor= 2200 ohms
+2 volts
+1 volt
0 volt
−1 volt
Grid No.2 series resistor= 4700 ohms
Plate current
Grid No.2 current
Grid No.1 bias =0 volt; grid No.2 series resistor=2200 ohms
Grid No.1 bias =0 volt; grid No.2 series resistor=4700 ohms
0
50
100
150
200
Plate voltage (volts)


Supply voltage=215 volts
See remark on page 2
Plate and grid No.2 current (milli-amps)
600
500
400
300
200
100
0
Grid No.1 bias=+2 volts
+1 volt
0 volt
−1 volt
Grid No.2 series resistor= 3300 ohms
+2 volts
+1 volt
0 volt
−1 volt
Grid No.2 series resistor= 6800 ohms
Plate current
Grid No.2 current
Grid No.1 bias=0 volt; grid No.2 series resistor=3300 ohms
Grid No.1 bias=0 volt; grid No.2 series resistor=6800 ohms
0
50
100
150
200
Plate voltage (volts)