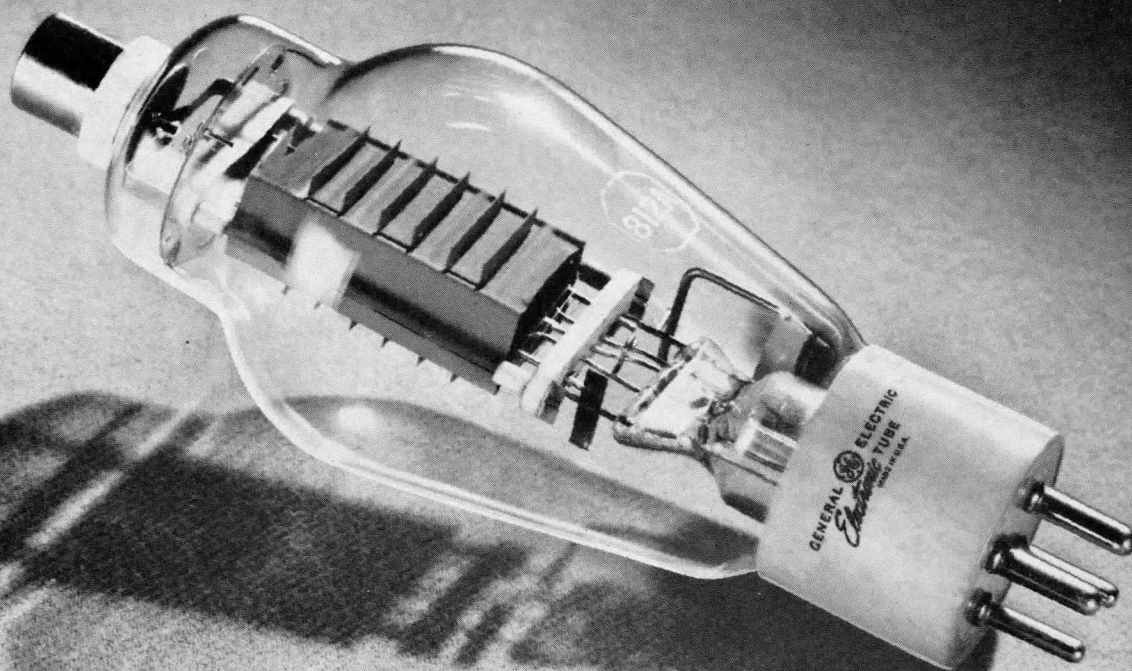




TRIODE

◆ DESCRIPTION

The GL-812-A is a three-electrode tube designed for use in unmodulated class C service, in plate-modulated radio-frequency power-amplifier service, or as a class B audio-frequency power amplifier and modulator. The anode is capable of dissipating 65 watts (ICAS) in class C unmodulated service. The cathode is a thoriated-tungsten filament. Maximum ratings apply up to 30 megacycles.

This tube will operate at high efficiency and low plate voltage because of its high permeance. Very low driving power is required. A pair of 812-A's

in class C telegraph service (ICAS) can operate with a plate input of 520 watts and with the very low driving power at the tubes of only 13 watts. In class B modulator service (ICAS) two of these tubes will modulate 100 per cent a radio-frequency amplifier having an input of 680 watts.

The tube is sturdy and specific design features include a large zirconium-coated anode with radiating fins to give remarkably effective heat dissipation, low-loss anode and grid-lead construction, and a low-loss micanol base.

◆ TECHNICAL INFORMATION

GENERAL

Electrical Data

Filament Voltage (A-C or D-C)	6.3 ± 0.3 Volts
Filament Current, at $E_f = 6.3$ v.	.4 Amperes
Amplification Factor	29
Direct Interelectrode Capacitances	
Grid-Plate	5.5 uuf
Grid-Filament	5.4 uuf
Plate-Filament	0.77 uuf

◆ Completely revised

Supersedes ETX152 dated 5-46

GENERAL  ELECTRIC


Electronic
TUBE

TECHNICAL INFORMATION (CONT'D)

Mechanical Data

Mounting position—Vertical, base down

Horizontal, plane of plate vertical

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

AUDIO-FREQUENCY POWER AMPLIFIER AND MODULATOR—CLASS B

Maximum ratings, absolute values	CCS*	ICAS**
D-c plate voltage.....	1250 max	1500 max volts
Maximum signal d-c plate current†.....	175 max	175 max milliamperes
Maximum signal d-c plate input†.....	165 max	235 max watts
Plate dissipation†.....	45 max	65 max watts
Typical operation		
Unless otherwise specified, values are for two tubes		
D-c plate voltage.....	1250	1500 volts
D-c grid voltage‡.....	—40	—48 volts
Peak a-f grid-to-grid voltage.....	225	270 volts
Zero signal d-c plate current.....	22	28 milliamperes
Maximum signal d-c plate current.....	260	310 milliamperes
Effective load resistance, plate to plate.....	12200	13200 ohms
Maximum signal driving power, approximate.....	3.5	5 watts
Maximum signal power output, approximate.....	235	340 watts

PLATE-MODULATED RADIO-FREQUENCY POWER AMPLIFIER—CLASS C TELEPHONY

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

Maximum ratings, absolute values	CCS*	ICAS**
D-c plate voltage.....	1000 max	1250 max volts
D-c grid voltage.....	—200 max	—200 max volts
D-c plate current.....	125 max	150 max milliamperes
D-c grid current.....	35 max	35 max milliamperes
Plate input.....	115 max	175 max watts
Plate dissipation.....	30 max	45 max watts
Typical operation		
D-c plate voltage.....	1000	1250 volts
D-c grid voltage.....	—110	—115 volts
From a grid resistor of.....	3400	3300 ohms
Peak r-f grid voltage.....	220	240 volts
D-c plate current.....	115	140 milliamperes
D-c grid current, approximate.....	33	35 milliamperes
Driving power, approximate.....	6.6	7.6 watts
Power output, approximate.....	85	130 watts

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C TELEGRAPHY

Key-down conditions per tube without modulation¶

Maximum ratings, absolute values	CCS*	ICAS**
D-c plate voltage.....	1250 max	1500 max volts
D-c grid voltage.....	—200 max	—200 max volts
D-c plate current.....	175 max	175 max milliamperes
D-c grid current.....	35 max	35 max milliamperes
Plate input.....	175 max	260 max watts
Plate dissipation.....	45 max	65 max watts
Typical operation		
D-c plate voltage.....	1250	1500 volts
D-c grid voltage		
From a fixed supply of.....	—90	—120 volts
From a grid resistor of.....	3000	4000 ohms
From a cathode resistor of.....	530	590 ohms
Peak r-f grid voltage.....	200	240 volts
D-c plate current.....	140	173 milliamperes
D-c grid current, approximate.....	30	30 milliamperes
Driving power, approximate.....	5.4	6.5 watts
Power output, approximate.....	130	190 watts

TECHNICAL INFORMATION (CONT'D)

SELF-RECTIFYING OSCILLATOR OR AMPLIFIER—CLASS C

Maximum ratings, absolute values	CCS*
A-c plate voltage (rms)	1750 max volts
D-c grid voltage	—125 max volts
D-c plate current	75 max milliamperes
D-c grid current	20 max milliamperes
Plate input	145 max watts
Plate dissipation	45 max watts
Typical operation in push-pull circuit at 27 megacycles	
Unless otherwise specified, values are for two tubes	
A-c plate voltage (rms)	1740 volts
Grid resistor	3500 ohms
D-c plate current	150 milliamperes
D-c grid current, approximate	29 milliamperes
Driving power, approximate #	12 watts
Power output, approximate	200 watts
Useful power output, approximate	
75% efficiency	150 watts

*Continuous Commercial Service.

**Intermittent Commercial and Amateur Service.

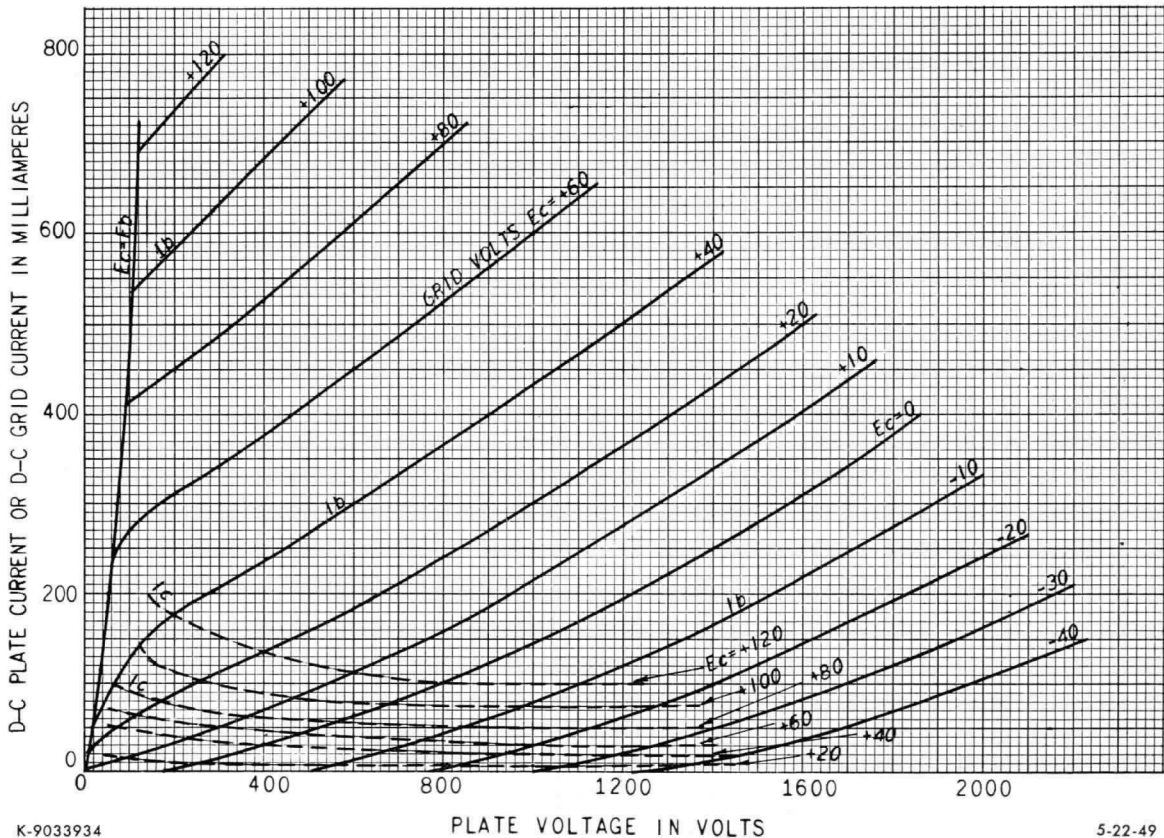
†Averaged over any audio-frequency cycle of sine-wave form.

‡Grid voltages are given with respect to the mid-point of filament operated on alternating current. If direct current is used, each stated value of grid voltage should be reduced by one-half the filament voltage and the circuit returns made to the negative end of the filament.

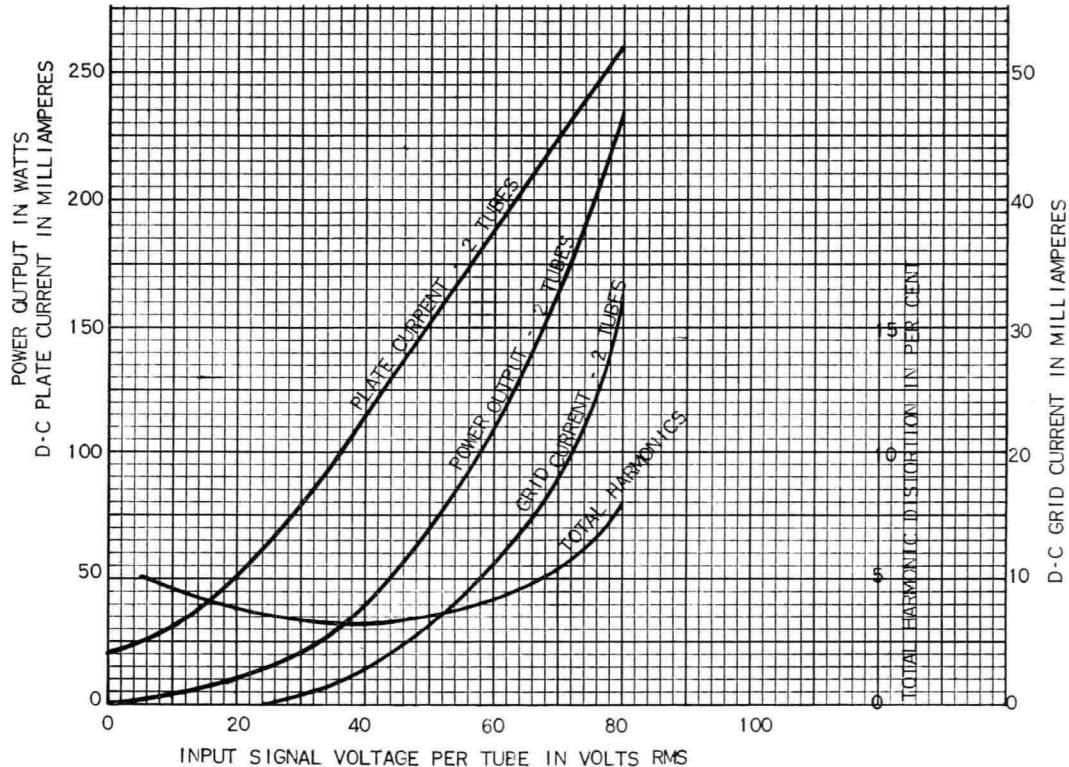
Modulation, essentially negative, may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions.

#From a self-rectified driver.

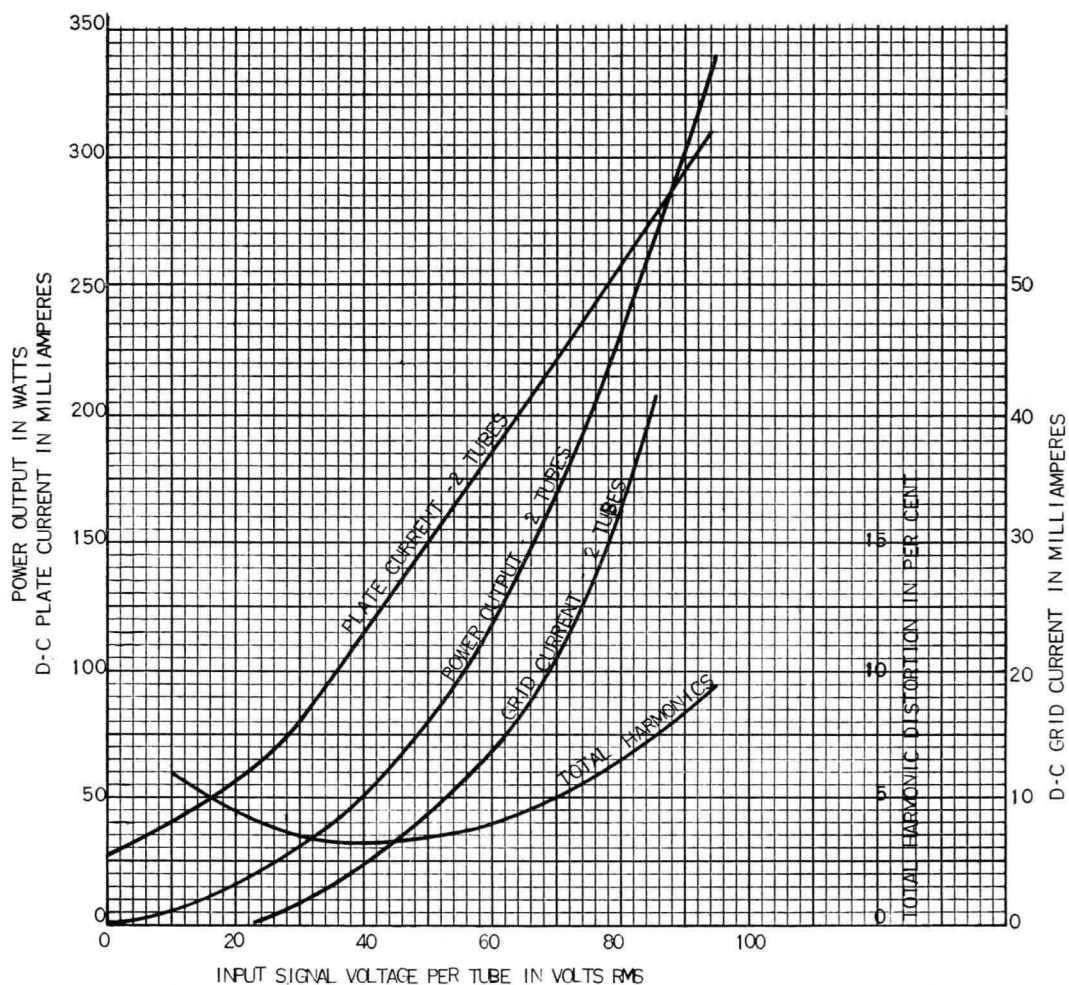
GL-812-A AVERAGE PLATE CHARACTERISTICS
($E_f = 6.3$ VOLTS D-C)



K-9033934
5-22-49
▲ GL-812-A OPERATION CHARACTERISTICS
($E_f = 6.3$ VOLTS A-C FOR GL-812'S AND 6L6'S)
CIRCUIT CONDITIONS: INPUT—INTERSTAGE TRANSFORMER (SAME AS K-9186084, PAGE 5) OUTPUT—CLASS B—TWO TYPE 812'S
PLATE VOLTS=1500, GRID VOLTS=46, LOAD, PLATE-TO-PLATE=1800 OHMS

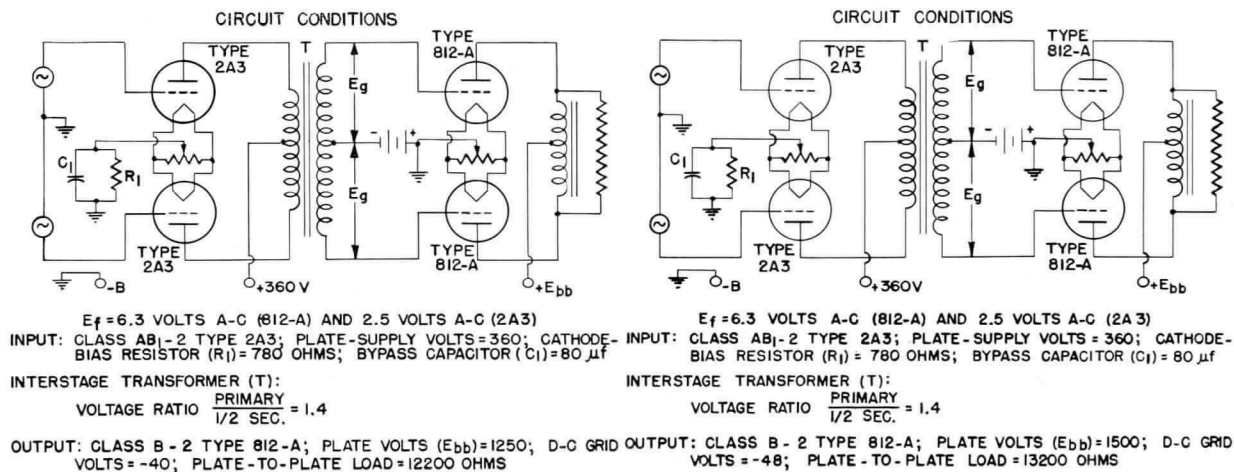


◆ GL-812-A
OPERATION CHARACTERISTICS



K-69087-72A298 (Part 2 below)
◆ New drawing

6-21-49



K-69087-72A297
New drawing

6-21-49

K-69087-72A298
New drawing

6-21-49

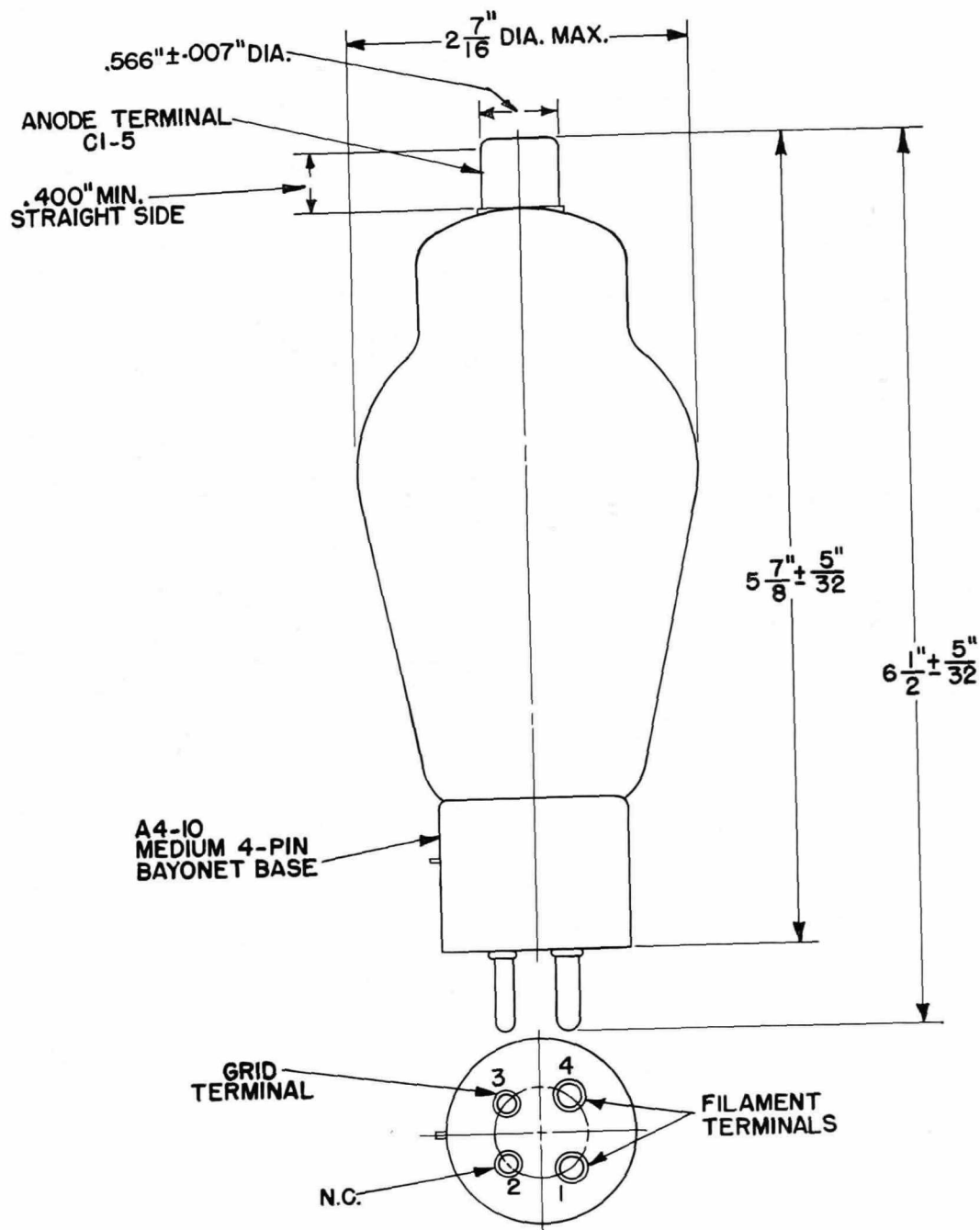
GL-812-A

ETX-152A

PAGE 6

6-50

◆ GL-812-A OUTLINE



N-15152AZ
◆ New drawing

6-10-49

Electronics Department
GENERAL ELECTRIC
Schenectady, N. Y.