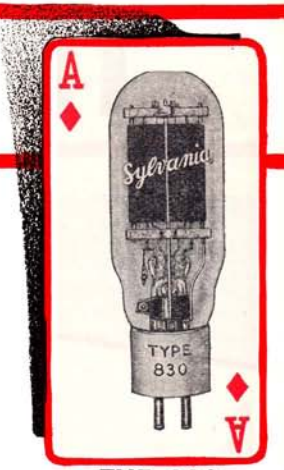
THREE ACES

Sylvania
(Reg. U. S. Pat. Off.)

● The "Three Aces" represent Hygrade Sylvania's latest contribution in the field of amateur radio. These three tubes, the 830, 825 and 210, meet a long felt need among amateurs. These tubes will give the amateur the kind of service and long life he has wished for. And further, the reasonable prices of these SYLVANIA Tubes make the buying of used tubes and "seconds" unjustifiable and uneconomical . . and Fellows, remember, SYLVANIA engineers have not stopped here, they are always striving to improve upon tubes available for amateur use. Of course the "Three Aces" employ SYLVANIA'S GRAPHITE ANODE construction.

"ACE" NUMBER ONE



THE SYLVANIA 830

● The Type 830 SYLVANIA Tube is a star performer. It is possible to place an 830 tube in a standard four prong socket . . just increase the filament voltage to 10 Volts and the plate Voltage to 750. Very simple. And, *what* output! In Class C service under normal conditions the Type 830 is capable of 55 watts. This tube is meeting with wide-spread approval among 'phone men for Class B service in modulating systems. The GRAPHITE ANODE construction in the Type 830 makes this *a real he-man tube*. This tube particularly should make the amateur realize that the purchase of a 50 watter of the "used" or "second" variety is uneconomical.

THE 830

8.75

CHARACTERISTICS

Filament Voltage	10
Filament Current	2 15 Amps.
Maximum Overall Length	5⅞"
Maximum Diameter	2.1/16"
Bulb	T16-26X
Base	Medium 4 pin Isolantite

Class "A" Service

Maximum Operating Plate Voltage	450 V
Maximum Plate Dissipation	17 Watts

OPERATING CONDITIONS

Plate Voltage	250	350	450
Grid Voltage	—15.0	—26	—38
Load Resistance	9300	8800	8000
Amplification Factor	8.0	8.0	8.0
Plate Resistance	4600	4250	4000
Mutual Conductance	1750	1900	2000
Plate Current	15.0	17.5	20.0
Undistorted Power Output, Watts	.35	1.1	2.0

Class "B" R. F. Service

Maximum Operating Plate Voltage	750 V.
Maximum D. C. Plate Current	60 Ma.
Maximum R. F. Grid Current	6 Amps.

OPERATING CONDITIONS

Plate Voltage	600 V
Grid Voltage, Neg.	70 V
Power Output (Peak at 100% Mod.)	12 Watts
Maximum Diameter	2 1/16 inches
Bulb	T16-26X
Base	Medium 4 pin Isolantite

Class "C" Service

Max. Operating Plate Voltage (Modulated)	750 V
Max. D. C. Plate Current	110 Ma.
Max. D. C. Grid Current	18 Ma.
Max. R. F. Grid Current	6 Amps.

OPERATING CONDITIONS

Plate Voltage	750 V.
Grid Voltage, Neg.	180 V.
Power Output	55 Watts

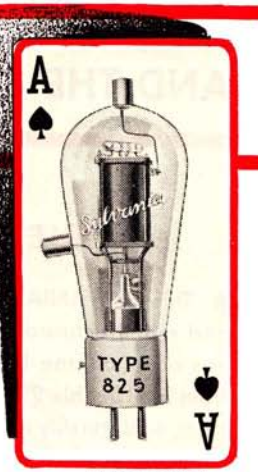
DIRECT INTERELECTRODE CAPACITANCES

Cgp.	9.9 mmf.
Cgf.	4.9 mmf.
Cpf.	2.2 mmf.

AMATEURS PLEASE NOTE: This is the December issue of Q.S.T. A Sylvania Tube will make an excellent Christmas gift. Show Father or Mother, YL or Ex-YL these Sylvania pages.

"ACE" NUMBER TWO

THE SYLVANIA 825



THE 825
10.00

● Widely-spaced, low inductive plate and grid connections and unusually low inter-element capacity make the Type 825 Tube the most efficient short wave oscillator and amplifier. The Type 825 is suited to all short wave work, but it is outstandingly superior for the frequencies between 20-100 megacycles. The Type 825 Tube embodies in design and performance the results of specialized research in ultra high frequency work, and knowledge of high frequency phenomena. This tube is excellent for amateur work on the 20-10 and 5 meter bands.

CHARACTERISTICS

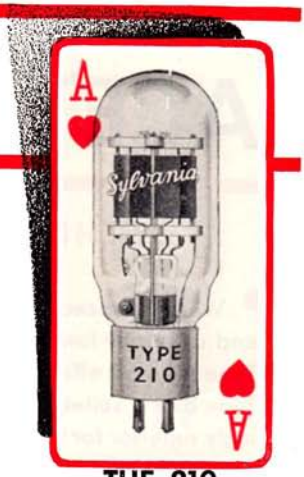
Filament Voltage	7.5
Filament Current	3.25 Amp.
Average Characteristics at: Ep, 1000 Eg, 70 Ef, 7.5 A. C.	
Plate Current	.040 Amp.
Plate Resistance	10,000 Ohms
Voltage Amplification Factor	10
Mutual Conductance	1000 uMhos
Maximum Plate Voltage:	
Modulated DC	750
Unmodulated DC	1000
Maximum Plate Dissipation	40 Watts
Normal R. F. Output	40 Watts
Interelectrode Capacitances:	
Grid to Plate	3 uu Fd.
Grid to Filament	2 uu Fd.
Plate to Filament	1 uu Fd.
Max. Overall Dimensions:	
Height	6 1/4 inches
Diameter	2 7/16 inches
Bulb	S-19
Base	Medium 4-pin Ceramic

EIGHT POINTS OF SUPERIORITY

1. Wide separation of input and output leads for lowest possible capacity.
2. Plate lead. Maximum insulation.
3. "Floating Anode" held only by low-loss ceramic spacers.
4. Thoriated tungsten carbide filament, specially designed and processed for ultra-high frequencies.
5. Low-loss ceramic base.
6. No mechanical strain on press.
7. Grid lead. Maximum insulation.
8. Graphite anode.

● **ALL CORRESPONDENCE** concerning our other transmitting tubes for amateur use should be mailed to Hygrade Sylvania Corporation, Amateur Radio Division, Clifton, N. J.

AND THE THIRD "ACE"



THE SYLVANIA 210

● This SYLVANIA Type 210 is the first 210 ever designed and manufactured strictly as a transmitting tube. This tube has a punch, the like of which has never before emanated from a 210. This 210 *can take it!* It is a powerful tube . . efficient, and sturdily constructed. Don't miss the first opportunity to try a SYLVANIA 210. There is a surprise in store for you.

THE 210

4.75

CHARACTERISTICS

General Characteristics

Number of Elements	3
Filament Voltage	7.5
Filament Current	1.25A
Filament Type	Thoriated Tungsten
Average Characteristics at: EP=425, EG=−39, EF=7.5	
Plate Current	0.018 Amp.
Amplification Factor	8
Plate Resistance	5450 Ohms
Mutual Conductance	1550 uMhos
Interelectrode Capacitances	
Grid to Plate	7 uuFd.
Grid to Filament	4 uuFd.
Plate to Filament	2.2 uuFd.
Max. Overall Dimensions	
Height	5⅝ inches
Diameter	2 inches
Base	Medium 4-pin, ceramic
Bulb	T-16
Type of Cooling	Air

Class "A" Operation

Max. Operating Plate Voltage	600
Max. Plate Dissipation	15 watts
Typical Operation at: EP=600, EG=−58, EF=7.5	
D. C. Plate Current	.018 Amp.
Peak Grid Swing	55 Volts
Load Resistance	10,000 Ohms
Power Output	3 Watts

Class "B" Operation

Max. Operating Plate Voltage	600
Max. D. C. Plate Current (Unmod.)	.070 Amp.
Max. Plate Dissipation	20 Watts
Max. R. F. Grid Current	5 Amp.
Max. D. C. Grid Current	.015 Amp.
Typical Operation at: EP=600, EG=−80, EF=7.5	
D. C. Plate Current (Unmod.)	.066 Amp.
Peak Power Output	12 Watts
Carrier Output (Mod. Factor 1)	3 Watts

Class "C" Operation

Max. Operating Plate Voltage	
Modulated D. C.	450
Unmodulated D. C.	600
A. C. (R. M. S.)	600
Max. D. C. Plate Current	.070 Amp.
Max. Plate Dissipation	20 Watts
Max. R. F. Grid Current	5 Amp.
Max. D. C. Grid Current	.015 Amp.
Typical Operation at: EP=600, EG=−125, EF=7.5	
D. C. Plate Current	.066 Amp.
Peak Power Output	15 Watts

● **OTHER AMATEUR TYPES** — immediate deliveries on the following — all employing the GRAPHITE ANODE Construction — 203-A, 211, 845, 852, 865, 866 and 872.

● Sylvania's Amateur Radio Division invites inquiries from amateurs on Sylvania's Transmitting Tubes. FREE characteristic charts and Price Lists. See your dealer . . if he cannot supply you, send your order to:

HYGRADE SYLVANIA CORPORATION

Hygrade Lamps — *Sylvania Tubes*

ELECTRONICS DEPARTMENT
AMATEUR RADIO DIVISION
CLIFTON, N. J.

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