

Release No. 99

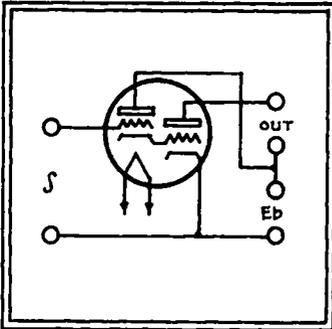


# TRIADYNE 6AB6 G



TECHNICAL BULLETIN 111

## TRIAD MANUFACTURING COMPANY, INC., PAWTUCKET, R.I.



Since the Triadyne 6B5 was developed by Triad Manufacturing Company in the Spring of 1935, leading manufacturers of automobile radio sets have selected this tube, and its counterpart the 6N6 G, for their higher priced models, although the tube was primarily designed for AC sets. The inherent qualities of this "dynamic coupling" type of power tube, especially its unique overload characteristic, made the tube desirable for auto receivers in spite of the fact that its physical size and its heater current are not entirely suitable for this application.

The new 6AB6 G tube was developed by Triad in order to provide the manufacturer of auto sets with a tube having the 6B5 performance but consuming less battery current and utilizing less space. The 6AB6 G heater consumes 0.5 amperes at 6.3 volts; this represents a 37% reduction in heater power compared with the 6B5. The overall size has been reduced by using the small octal base and the ST-12 bulb. This permits a more compact and convenient arrangement of parts. Due to the similarity of the new tube to the well-known 6B5, a detailed description of its performance will not be given here. However, the curve data appearing on the following pages will be found useful.

The 6AB6 G is strictly a Class A tube and the AB of its type number has no significance other than the fact that these letters were chosen to identify it with automobile use. Any of the ordinary high plate resistance voltage amplifiers may be used to supply the signal to the 6AB6 G, and a grid resistor of 1 megohm is permissible under any operating condition. As is the case with other "dynamic coupling" Triadyne power tubes, this tube comprises two triodes in the same bulb connected internally. The "dynamic coupling" arrangement produces higher plate efficiency than is possible with other triodes, but retains all of the desirable features of triode performance. Another important feature is the essentially constant power output delivered when the load resistance is varied, thereby minimizing the effects of loud speaker resonant peaks at various frequencies and giving the entire system a better overall frequency characteristic. This is shown by the power output and distortion curve of figure 2, where the load resistance is varied over a ratio of almost five to one.

It should be kept in mind that the tube is intended for lower power service than the 6B5-6N6 G, where the normal plate voltage does not exceed 250. For this reason, the 6AB6 G is not entirely interchangeable with and should not be used as a replacement for the 6N6 G in AC sets or P.A. systems whose plate voltage might be in excess of 250. For single ended sets having 250 volts available for the output tube, 3.5 watts can be obtained at 10% distortion. Grid current does not flow, however, until the tube delivers about 4.25 watts. In push-pull applications where no bias is used, 9 watts may be obtained at 8% distortion. Since it is desirable to utilize as little battery current as possible, biasing of the push pull stage is recommended. A 5 volt bias which may be obtained by a cathode self-bias resistor, drops the no-signal output plate current from 68 to 50 ma. Nearly the same power output is available, but the input signal required is somewhat greater. It should be understood that no driving power is required for this type of operation.



DISTORTION VERSUS POWER OUTPUT

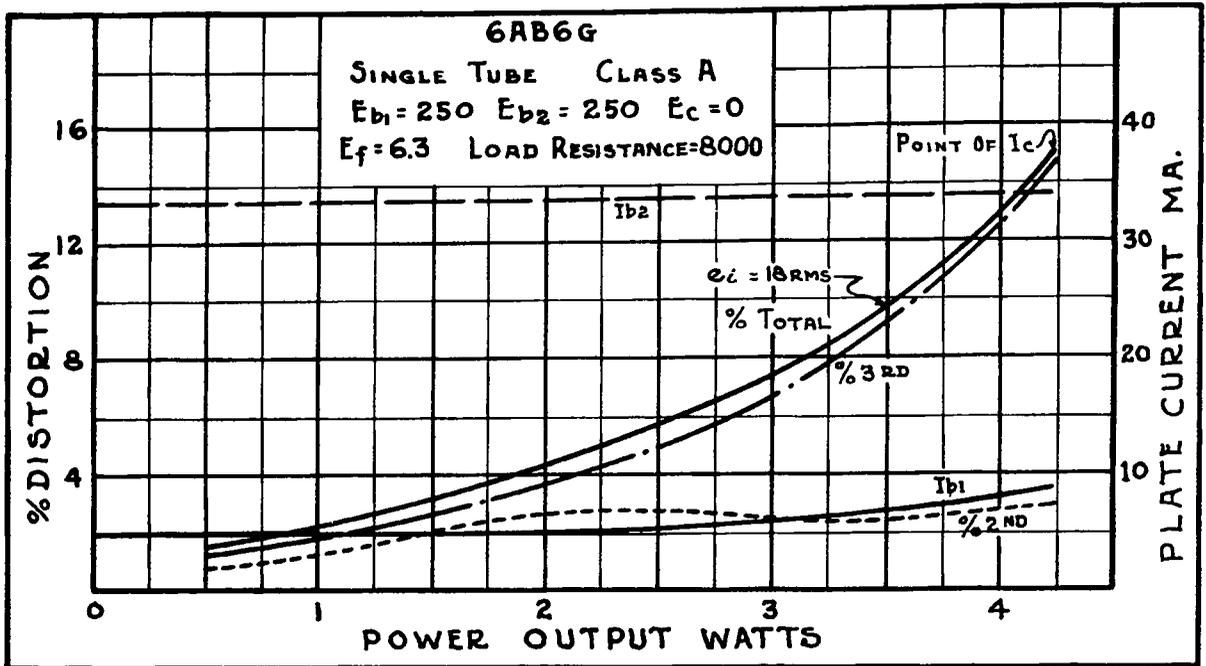


Figure No. 1

DISTORTION VERSUS LOAD RESISTANCE

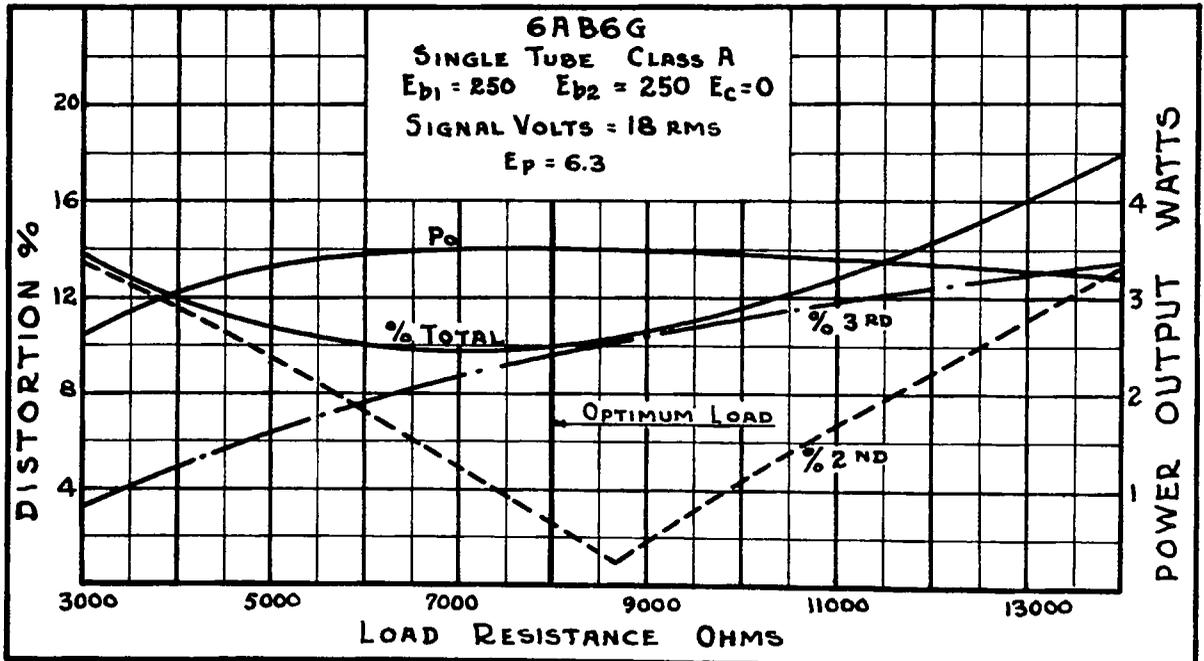


Figure No. 2



AVERAGE PLATE CHARACTERISTICS

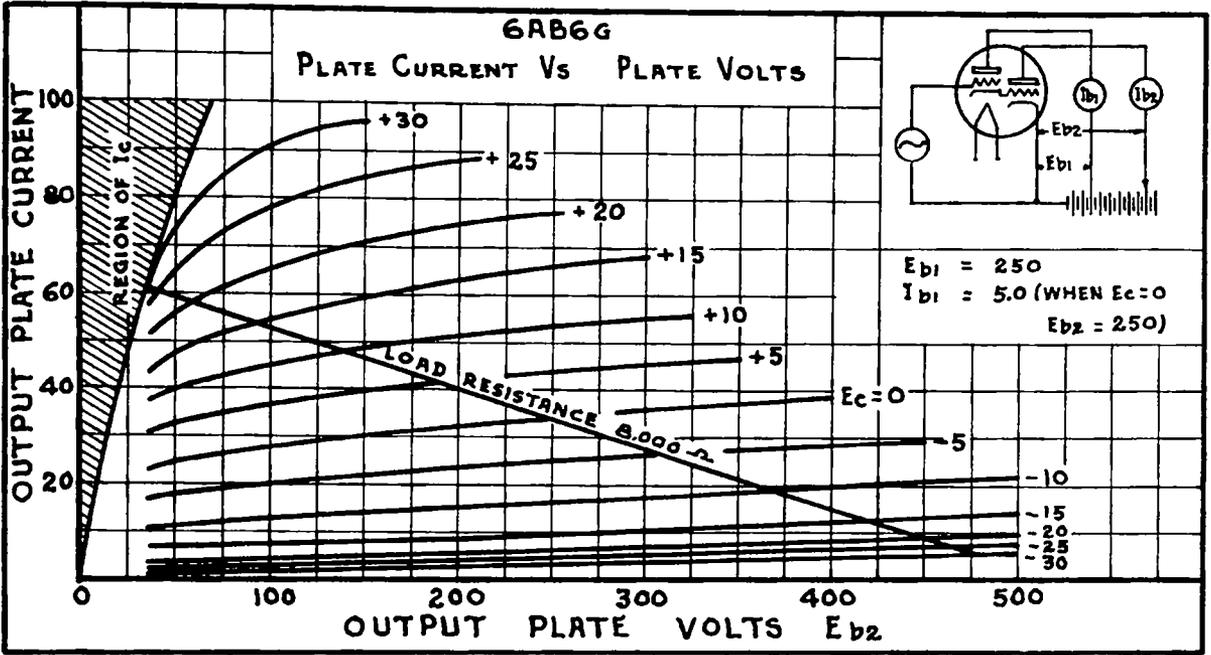


Figure No. 3

PUSH PULL CHARACTERISTICS

DISTORTION VERSUS POWER OUTPUT

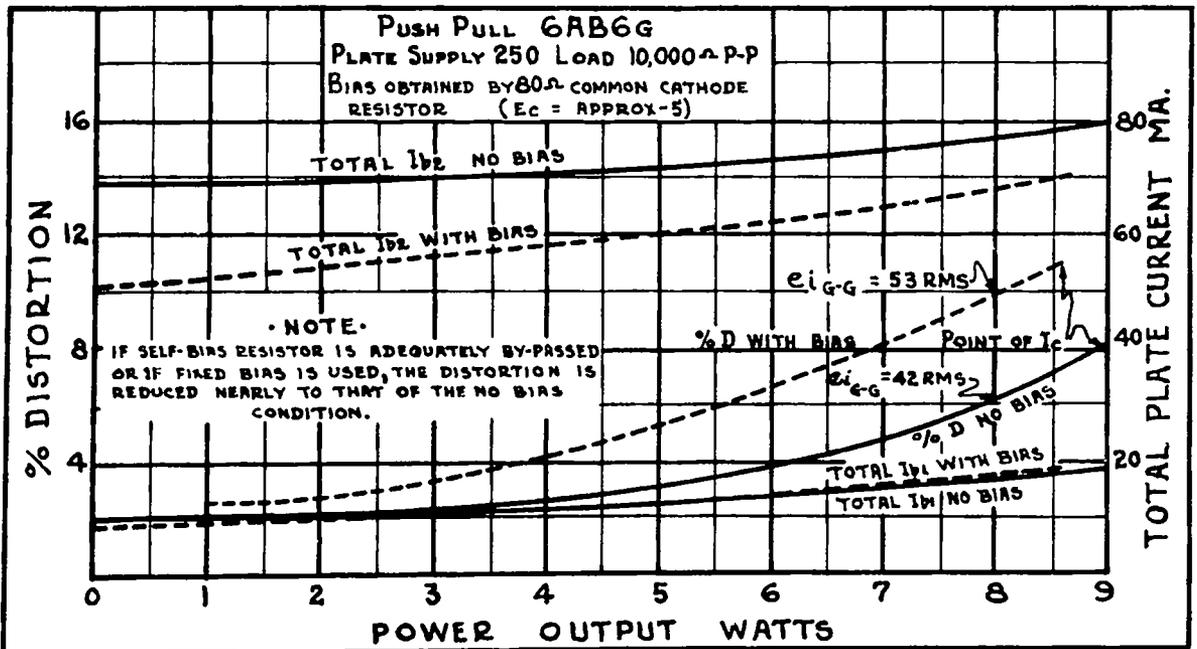


Figure No. 4

# TRIADYNE 6AB6 G

## AVERAGE ELECTRICAL CHARACTERISTICS

Heater Voltage	Coated un-potential cathode
Current	6.3 a-c or d-c
	0.5 ampere

### AMPLIFIER (CLASS A)

	Single	Push Pull	
Output Plate (P <sub>2</sub> )	250	250	max. volts
Input Plate (P <sub>1</sub> )	250	250	max. volts
Grid	0	0	volts
Plate Current (P <sub>2</sub> )	34	68	ma.
Plate Current(P <sub>1</sub> )	5	10	ma.
Amplification Factor	72		
Plate Resistance	40,000		ohms
Mutual Conductance	1,800		umhos
Load Resistance	8,000	10,000 p-p	ohms
Power Output	3.5	8	watts
Harmonic Distortion	10	6.5	%
Signal Volts For Rated Power	18	42 g-g	r.m.s.

### PUSH PULL AMPLIFIER (CLASS AB)\*

Output Plate (P <sub>2</sub> )	245	max. volts
Input Plate (P <sub>1</sub> )	245	max. volts
Self-Bias Resistor**	80	ohms
Zero-Signal Plate Current(P <sub>2</sub> )	50	ma.
Full Signal Plate Current (P <sub>2</sub> )	68	ma.
Zero Signal Plate Current (P <sub>1</sub> )	8	ma.
Full Signal Plate Current (P <sub>1</sub> )	17	ma.
Load Resistance	10,000 p-p	ohms
Power Output	8	watts
Harmonic Distortion	10	%
Signal Volts For Rated Power	53 g-g	r.m.s.

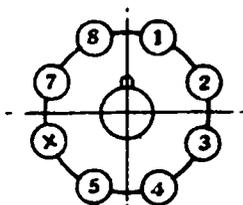
Push Pull values are for two tubes.

\*Grid current does not flow during any part of the input cycle.

\*\*Common cathode resistor which is not by-passed by capacitance. If this resistor is adequately by-passed or if a fixed bias of -5 volts is used, the Class AB distortion is reduced nearly to that of the Class A push pull.

The total resistance introduced into the grid circuit by the input coupling device should not exceed 1.0 megohm.

### 6AB6 G Base Connections



### Bottom View of Base

- Pin 1 - No Connection
- Pin 2 - Heater
- Pin 3 - Output Plate (p<sub>2</sub>)
- Pin 4 - Input Plate (p<sub>1</sub>)
- Pin 5 - Input Grid
- Pin 7 - Heater
- Pin 8 - Cathode

### Physical Dimensions

- Max. Overall Length 4-1/2"
- Max. Diameter 1-9/16"
- Bulb ST 12
- Base Small Octal 7-Pin

# RADIO MANUFACTURERS ASSOCIATION

SUITE 701-4 AMERICAN BUILDING  
1317 F STREET, N.W.  
WASHINGTON, D. C.



R.M.A. DATA BUREAU  
90 West Street  
New York, N. Y.

Release No. 99A

July 11, 1940

To  
Tube Engineers:

The inclusion of a resistor in the structure of the tube type 6AB6G requires the modification of the basing designation applicable to this tube type.

As originally announced, the assigned basing designation was 7W.

To the modified basing the extended designation 7AU-0-0 has been assigned.

Respectfully yours,

R.M.A. DATA BUREAU

By

A large, stylized handwritten signature in black ink, which appears to be "C. L. D.", is written over the typed name "C. L. D." and extends significantly to the left and downwards.

LCFH:MJ