

Taylor

CUSTOM
BUILT

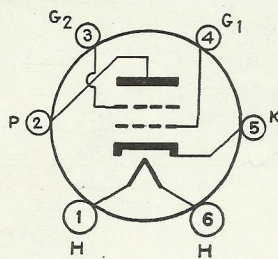
Tubes

T-21

21 WATTS

PLATE DISSIPATION
BEAM TUBE

\$1.95



T-21

Bottom View



What About Ratings?

Recently there was brought forth a new type of Ratings which allowed for the difference that actually existed between two classes of use—Continuous Commercial Service and Interrupted or Intermittent Commercial and Amateur Service. Taylor Tubes agrees that these Dual ratings are theoretically correct and have met these competitive ratings on a few types. In every case our filaments were capable of meeting any emission demands required by the new I.C.A.S. ratings with long tube life kept constantly in mind. In addition, due to the use of Processed Carbon Anodes, Taylor Tubes offer a high standard of SAFETY FACTOR. We define Safety Factor as the ability of a Tube to withstand serious temporary overloads without injury to the elements. In the case of the T-40, as an example, every

tube is factory tested at 300 watts Plate Dissipation. The rated plate dissipation is 40 watts, making your SAFETY FACTOR 260 watts. Now if any tube in the T-40 class using a nickel Anode is rated at 55 watts plate dissipation and the nickel anode will melt at 150 watts, your Safety Factor would be only 95 watts. The extremely high melting point of the Taylor Carbon Anodes is 3527° C as against 1452° C for a Nickel Anode, 2620° C for Molybdenum and 2850° for Tantalum.

The Taylor margin of extra safety is of vital importance, as many tubes are ruined in tuning up amplifiers. (When a stage goes out of resonance, the plate current soars, resulting in plate dissipation far in excess of the Tube's normal rated dissipation.) High Safety Factor Standards are provided for in all Taylor Carbon Anode Tubes. Referring to the T-40 type again, we point out as one of its many reasons for holding Sales Leadership is the fact that it **should** be and is better because it costs more to make it. A Nickel Anode Tube, in this same price class, costs about 35c less to produce. The extra costs that are put into Taylor Tubes accrue to your benefit many times—in performance—in tube life—in Safety Factor—and in the Broadest Guarantee in the Business.

WHAT ABOUT GAS?

All known materials, usable as Anodes, have a heat point at which all gases will be expelled. In degassing a tube, tremendous heat is induced into the Anodes by the Radio Frequency currents while a series of vacuum pumps of special design carry away the gases being liberated. (It is interesting here to note that carbon has the highest melting point of all common anode materials—see list in copy above.) Regardless of the Anode material used, this process of degassing is always followed. A TUBE MADE "GAS-FREE" IN PRODUCTION REMAINS "GAS-FREE." Processed Carbon Anodes have ideal degassing qualities and compare, in this respect, more than favorably with all other anode materials.

Carbon Anodes, in addition, due to their rough black surfaces, radiate heat many times faster than metal anodes with smooth and shiny surfaces.

CATHODE MODULATION

You will notice that we do not have any suggested Transmitter circuits showing the use of Cathode Modulation. We respect the technical ability of Frank C. Jones a great deal and have recommended a number of his "Brain-Children" with fine results, but in the case of Cathode Modulation, we are not in full accord with some of Jones' views. We have not found it possible to attain the high efficiencies claimed to be possible using this system.—in our opinion 45 to 50 per cent efficiency is tops. Cathode Modulation was known among Commercial Companies for many years, but was never adopted, which indicates to us that it is not comparable to high level modulation. We never recommend a Transmitter circuit until we have had the opportunity to fully test it out in a Completed Transmitter and, due to this policy, we cannot comply with the requests we receive to send out circuits built around some combination of Tubes that appeals to that particular Amateur. For Cathode Modulated Transmitters, we recommend that you follow the information and circuits given in Jones' fine Cathode Modulation Handbook. More information is also obtainable in the current issues of QST and Radio and for all types of Circuits we heartily endorse the ARRL Handbook and the Radio Handbook. We, of course, closely watch all developments in the Radio Communication Field and always welcome the opportunity to cooperate by prompt attention to all technical queries.

The T-21 is a heater cathode type Beam Power Amplifier Tube especially efficient as an oscillator, amplifier or frequency multiplier and desirable for mobile and portable radio transmitters. The electrical characteristics are similar to those of the 6L6G.

GENERAL CHARACTERISTICS

Heater Voltage, volts.....	6.3
Heater Current, amps.....	0.9
Amp. Factor.....	138
Max. Plate Dissipation, watts.....	21
Max. Screen Dissipation, watts.....	3.5

Overall Dimensions

Max. Length, inches.....	5 5/8
Max. Diameter, inches.....	2 1/8

Interelectrode Capacities

Grid to Plate, mmf.....	1.4
Input, mmf.....	11.5
Output, mmf.....	11.5

CLASS C AMPLIFIER

Max. Operating Plate, volts.....	400*
Max. D. C. Plate Current—Telegraph, ma.....	95
Max. D. C. Plate Current—Telephone, ma.....	65
Max. D. C. Grid Current, ma.....	5
D. C. Grid, volts.....	—45
Max. Driving Power, watts.....	.4
Max. Screen Current, ma.....	16
Max. Screen Voltage.....	300

* It is recommended that plate voltage be reduced to 300 volts at frequencies above 30 MC.

