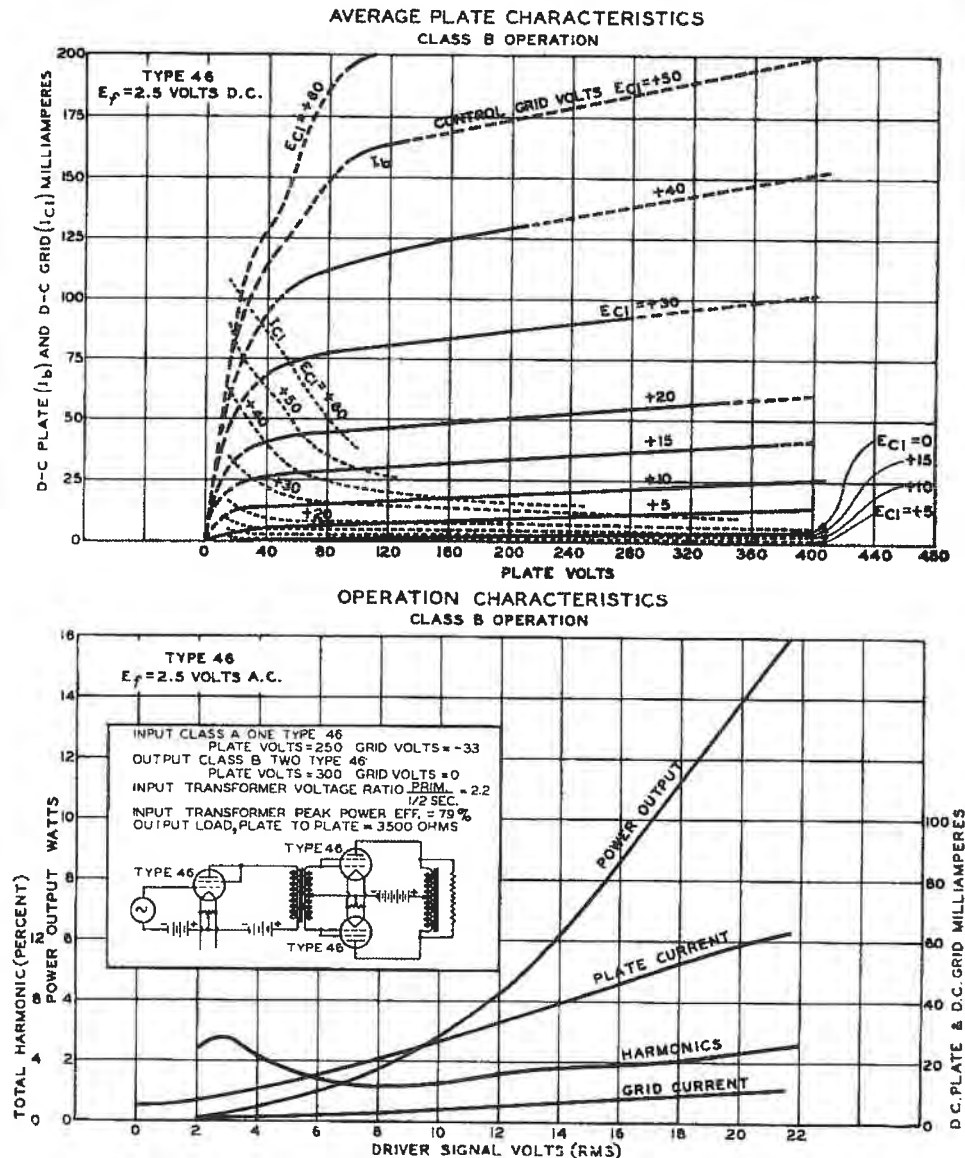


## THE CUNNINGHAM RADIO TUBE MANUAL

that is, the primary input voltage is higher than the secondary voltage supplied to the grids of the power output tubes. Depending upon conditions, the ratio of the primary of the interstage transformer to one-half of its secondary may range between 1.5 to 1 and 5.5 to 1. The transformer step-down ratio is dependent on the following factors: (1) Type of driver tube, (2) Type of power tube, (3) Load on power tube, (4) Permissible distortion, and (5) Transformer efficiency (peak power).

The primary impedance of the interstage transformer is essentially the same as if the transformer were to be operated with no load, that is, into an open grid. Since power is transferred, the transformer should have reasonable power efficiency. It should be noted that the power output and distortion are often critically dependent upon the circuit constants which should therefore be made as near independent of frequency as possible. This applies particularly to the interstage coupling transformer and to the loudspeaker.

The driver tube should be capable of delivering sufficient power to operate the Class B amplifier stage. If low distortion is desired, it is most important that the driver tube be worked substantially below its Class A undistorted output rating, since distortion produced by the driver stage and the power stage will be present in the output.



## THE CUNNINGHAM RADIO TUBE MANUAL

For **Class A operation** of the '46, the grid adjacent to the plate is connected to the plate. The grid next to the filament serves as the control grid. Operation of the tube is then similar to any Class A power amplifier triode. The operation of this tube connected as a Class A amplifier is not indicative of its performance in Class B circuits and should not be confused with the latter.

The intended application of the '46 as a Class A amplifier is for driving two '46's in a Class B amplifier circuit. The tube has been constructed for this dual service in order to reduce the number of tube types necessary in a receiver. The tabulated values for Class A operation of this type as given under **CHARACTERISTICS** are for its operation as a power output tube.

