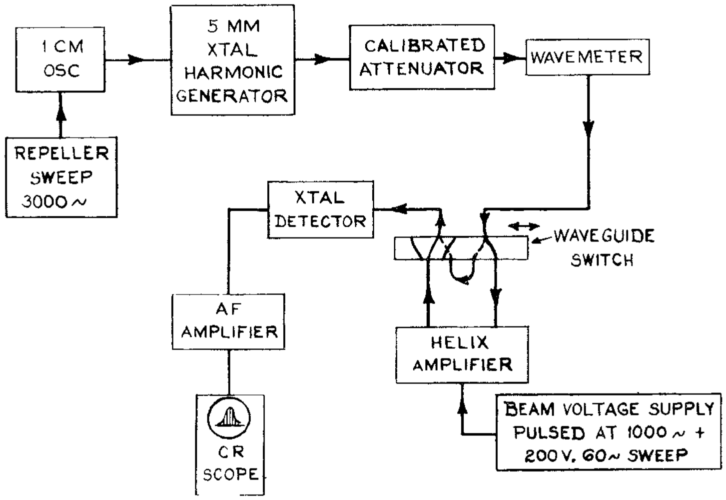

FIG. 6 - TEST CIRCUIT.

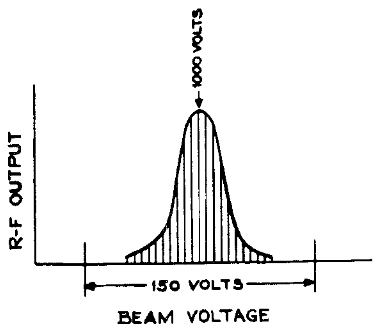

FIG. 7-AMPLIFIER RF OUTPUT VS BEAM VOLTAGE.

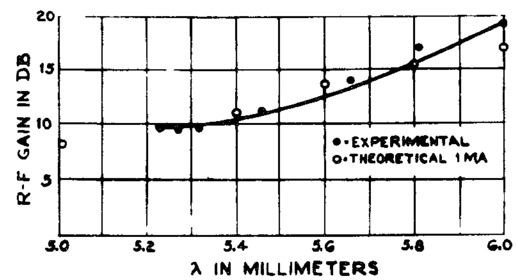

FIG. 8-GAIN OF AMPLIFIER AS A FUNCTION OF WAVELENGTH. COMPARISON WITH CALCULATED PERFORMANCE.

THE USE OF FLAT WAVEGUIDE IN THE MILLIMETER RANGE

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Abstract: The use of flat waveguide in the millimeter range has the advantage of increased power handling ability and lower attenuation as compared to the ordinary single mode guide. These advantages are gained at the expense of possible multi-mode propagation. Various flat guide components are described which are designed to operate over a 4:1 frequency band with minimum higher mode excitation. In addition, the measurement of the equivalent coupling parameters of waveguide discontinuities when two modes are propagating, is discussed. These measurements are facilitated through the use of a novel standing wave indicator which allows the standing wave of each mode to be measured separately. The experimental values of the coupling parameters are in good agreement with those predicted by theory.