

Alert Radio Engineers Are Adopting EIMAC Vacuum Tank Condensers

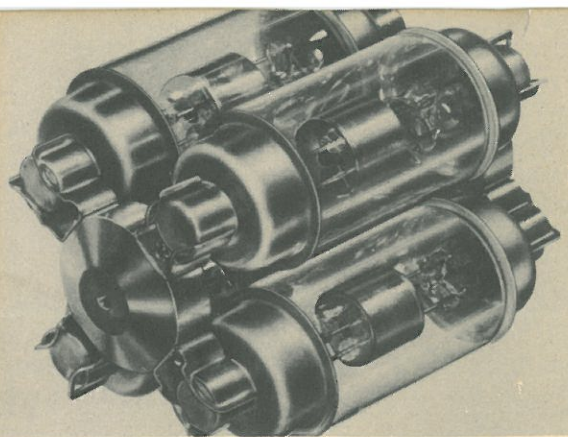
Eliminating the old-fashioned, bulky, open plate and pressure dielectric types

As the circuit efficiencies in radio transmitters increase, the need for a more compact, highly efficient tank condensers becomes apparent. It is clearly evident that a fixed capacity is desirable provided it can be confined to a very small space. The increasing use of multifrequency transmitters and the need for absolute precision in tuning aircraft transmitters and keeping them at constant peak at all altitudes indicates the advantage of the Vacuum tank circuit.

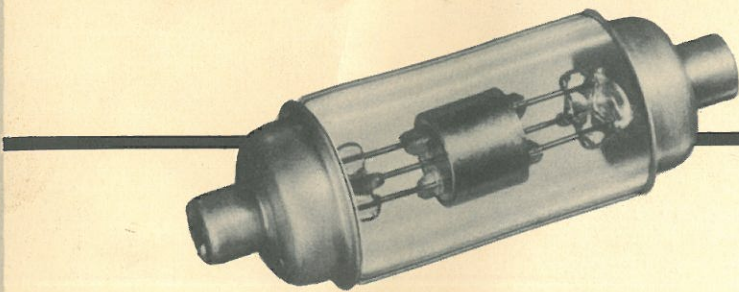
Voltage capabilities of tank condensers have heretofore been determined by the thickness of the dielectric. Plate size and dielectric being increased proportionate to the voltage capabilities of each unit. Consequently, tank condensers for the higher capacities have grown to tremendous proportions. The maintenance of a separate

tank circuit for each frequency channel with the old open plate type of condenser would have been exceedingly difficult to say nothing of the cost. Open plate type condensers for each channel in a high power multifrequency transmitter would require almost as much space as the balance of the transmitter and due to their bulk, greatly reduce efficiency. Slight variations in humidity, a change in the voltage or any one of dozens of other variables would require complete re-design of the transmitter.

Now, with the proper use of Eimac Vacuum Tank condensers, transmitters can be made to operate at much greater efficiencies. Four separate tank circuits need not occupy more space than a small single open plate condenser. Extremely high capacities can be built up within the space of one cubic foot—and, more important, these capacities will remain constant.



Combination of small units builds up ANY desired capacity. Above is a 200 m m f d. unit. Peak R.F. voltage 32,000.



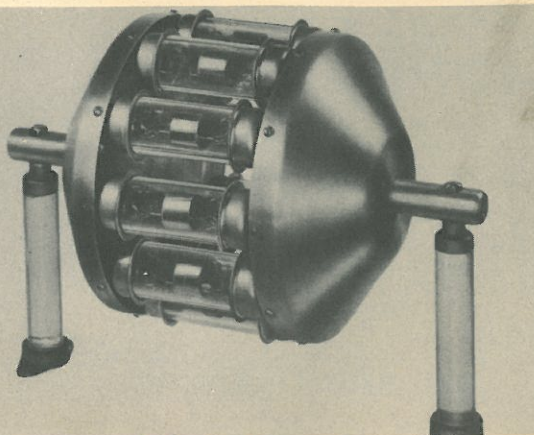
Vacuum IS THE DIELECTRIC

The New Eimac Vacuum Tank Condenser was developed on the principle that a "perfect vacuum" is a "perfect insulator." The infinite resistance of vacuum, regardless of its dimension or volume, forms a dielectric capable of withstanding the highest voltages. It is obvious that a condenser having tremendous power capabilities can be extremely small, physically, if the dielectric is a vacuum. Plate spacing, in this type of condenser, is determined by mechanical rather than voltage limitations and the actual plate area can be reduced to the very minimum.

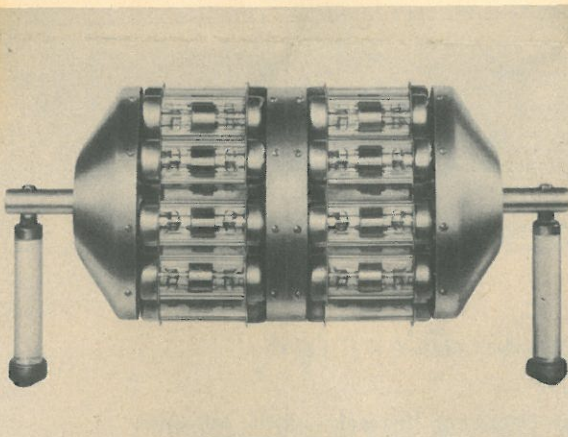
While it is a recognized fact that a "perfect vacuum" is unattainable, the improvement in exhaust technique as developed by Eimac engineers has produced a result that for practical purposes is equal to the ideal. Successful experience in the production of the outstanding Eimac transmitter tubes has quite naturally helped to perfect the Vacuum Tank

Condenser. This new device has an overall length of but 6½ inches and a maximum diameter of slightly over 2 inches, still it carries a peak radio frequency voltage rating of 32,000 volts. The lump capacity of a tank circuit is confined to a space approximately one inch cube which makes it apparent why these condensers eliminate much of the difficulties occasioned by stray capacities and high inherent inductance.

The single section Vacuum Condenser may be used in a push-pull 100% modulated transmitter operating at 4,000 volts on the plate. Correspondingly higher voltages may be used in the single ended amplifiers and where no modulation is required. Single units are available in 6, 12, 25, and 50 mmfd capacities. Proper combinations will provide any desired capacity for optimum circuit efficiencies on any frequency at any voltage. Radio frequency current rating: 20 to 50 amperes per unit, depending upon frequency.



Ten standard units combined equal 500 m m f d. Peak R.F. voltage 32,000.



Twenty single units in this combination build up 250 m m f d. capacity. Peak R.F. voltage 64,000.



EITEL-McCULLOUGH, Inc., SAN BRUNO, CALIF.

Vacuum tank condensers provide a positive, accurate means to determine the proper "Q" of your tank circuit. No loss of power on a stray harmonic... no loss of efficiency. They assure the proper load balance on each of the tubes and minimize "splatter" on phone signals.

Following Are Suggested Capacities For Optimum Circuit Efficiencies and Minimum Harmonic Radiation. Lowest Values for C. W. only. Highest Values for modulated amplifiers.

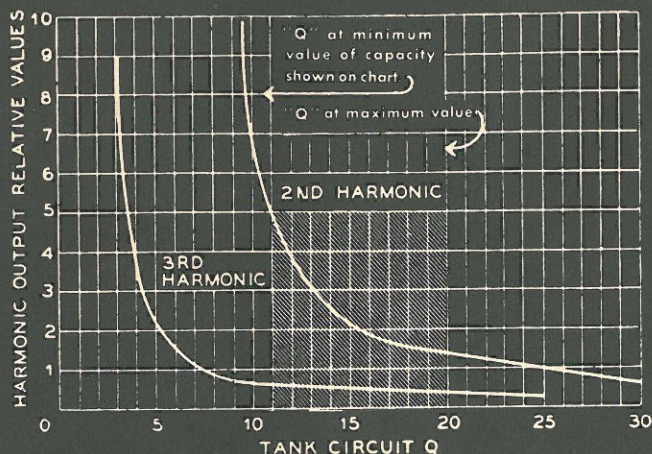


Plate Voltage	SINGLE ENDED, GRID NEUTRALIZED AMPLIFIER PLATE CURRENT 175 MILLIAMPERES				1.7 mc
	28 mc	14 mc	7 mc C. W. only	3.5 mc	
1500	12-25	25-50	50	100-200	200-400
3000	6-12	12-25	25	50-100	100-200
1500	SINGLE ENDED, GRID NEUTRALIZED AMPLIFIER PLATE CURRENT 350 MILLIAMPERES				400-800
	25-50	50-100	100	200-400	
3000	12-25	25-50	50	100-200	200-400
1500	TWO TUBES CONNECTED IN PUSH-PULL PLATE CURRENT 175 MILLIAMPERES				50-100
	3-6	6-12	12	25-50	
3000	*-3	3-6	6	12-25	25-50
1500	TWO TUBES IN PUSH-PULL PLATE CURRENT 350 MILLIAMPERES				100-200
	6-12	12-25	25	50-100	
3000	3-6	6-12	12	25-50	50-100