



RCA MANUFACTURING COMPANY, INC.

A RADIO CORPORATION OF AMERICA SUBSIDIARY

Harrison, New Jersey

APPLICATION NOTE NO.117
December 22, 1941

DESIGN PRECAUTION FOR OSCILLATORS
EMPLOYING FILAMENT-TYPE TUBES

Experience with filament-type acorn tubes as oscillators in transmitting equipment has shown that, under some conditions of operation, oscillation may continue after the filament voltage has been removed unless the plate voltage is also removed. When the filament voltage is removed from an oscillator tube having particularly low filament power consumption, continued oscillation frequently takes place because of continued heating of the filament by the plate current.

Continued oscillation has been found most likely to occur (1) with a tube having high emission capability, (2) with an exceptionally well-designed circuit, and (3) with a high value of oscillator plate current; it has been observed with oscillator tubes operated at moderate values of plate voltage and current.

Because of these results in the laboratory and in the field, it is recommended that both the filament voltage and the plate voltage of filament-type miniature, GT, and acorn oscillator tubes used for transmitter purposes be removed when equipment employing these types is "shut down." Usually, a convenient method is to break the minus filament and the minus plate supplies with a single, double-pole switch.

The recommended procedure insures that the oscillator will always stop functioning in the "off" position, saves B power, and avoids interference with reception in combined transmit-receive equipment.

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A P P L I C A T I O N N O T E S

