PULSE MODULATION OF AUDIO OSCILLATORS

A convenient method for pulse modulating oscillators is shown below. Very little external equipment is required. Briefly, the method employs a diode in the oscillator output which is biased on and off from a Pulse or Square Wave Generator.

Important considerations are:
1) The oscillator frequency and the pulse width should be adjusted so that several oscillator cycles occur during one pulse. For example, at 5 cps, each cycle requires 0.2 sec or 200 ms. Thus for six audio output cycles a 1.2 second pulse is necessary.

2) The sine wave amplitude should be less than the zero-to-peak pulse amplitude to prevent sine wave clipping.

3) The pulse should go above and below zero volts to open and close the diode properly. When a single-ended output pulse which starts at zero and goes either positive or negative is used, it can be balanced around zero volts by using a battery as shown by dotted lines in the diagram. Battery polarity and amplitude will depend on the amplitude and polarity of the output pulse. For example:

A capacitor instead of a battery is not desirable because of two opposite requirements:
1) A large capacitor to keep its reactance to the lower audio frequencies small.

2) A small capacitor to maintain good pulse rise time for positive diode operation.

As a guide to diode operation here are output configurations for typical generators:

- Model 202A
- Model 211A
- Model 212A
- Model 218A

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