

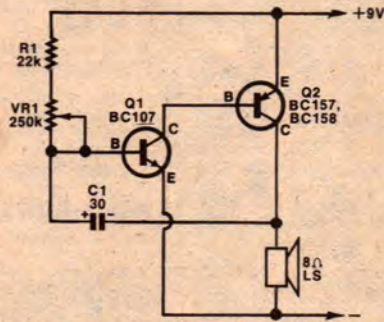
Mini Metronome

Here is a really simple project — a unit that simulates beautifully the sound of a time bomb ticking away! For those more attracted to gentler pastimes it may also serve as a metronome, that is it gives a loud click at regular intervals, the actual interval being varied by a potentiometer in the circuit. It's very simplicity also makes it highly suitable for use as an audio warning device with the alarm switch inserted in the supply line.

The actual working of the circuit is fairly simple; on applying a voltage across R1, VR1, C1 and the loudspeaker, capacitor C1 charges up till a point is reached when Q1 switches on. This in turn switches Q2 to a conducting state — meaning that a voltage

is applied across the loudspeaker causing it to "plop".

The base current of Q1 reduces the charge on C1 to the stage where the transistor turns off; thus the cycle starts all over again. The rate at which C1



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charges depends upon VR1 and by altering this the interval between the cycle can be varied.

A wide variety of transistors may be used for Q1 and Q2. Q1 is an NPN transistor and may be either a BC237 or a BC238. Q2 is a PNP type and can be either a BC307 or a BC558.

The components are mounted on a small piece of Veroboard. One end is drilled to take the potentiometer and the other components are mounted and soldered at the other end. The project is so simple that very little can go wrong and immediately you switch on regular "plops" will be heard. By altering VR1 a wide range of intervals should be covered but if you want slower ones — that is with several seconds' interval — increase the value of C1. If you want faster ones, lower its value.