3 Rodent Repeller

☐ One way to get the unwelcomed squeaks out of your house and the yard area is to squeak back with the Rodent Repeller. This circuit produces freq-squeaks in the ultrasonic range sweeping from 25,000 to 50,000 Hertz. IC1, a 556 dual timer functions as a combined stable multivibrator and a voltage sweeper that varies the oscilator output. The second timer stage effect on capacitor C2 provides the frequency's sweeping effect—enough to drive a rodent nuts. Transistor Q1 isolates the two sections of the timers in IC1. When Q1 conducts, it lowers the control voltage at pin 11 of IC1, which in turn increases the frequency output. The cycle will be about one second or less depending upon the setting of the potentiometer.

You can't hear the output of the Rodent Repeller, so it is suggested that for testing purposes a .01 disc capacitor be connected across C3. You may want to leave it in the circuit if humanoids are your problem.

The speaker is a piezoelectric tweeter out of Radio Shack, that sells for $10, depending on the model you buy. The circuit can be powered by batteries, but fix up an AC-powered supply that will keep costs down. The output from the chip is sufficient to drive the speaker. Do not attempt to put more power into the speaker by adding a stage of amplification unless you know for sure that the speaker is not being overdriven. Heat will destroy it. The 556 provides just enough oomph to do the job.

PARTS LIST FOR RODENT REPELLER

C1—.01-uF, disc capacitor
C2—.10-uF, 16-VDC electrolytic capacitor
C3—.001-uF, disc capacitor
IC1—556 dual timer
LED1—Light-emitting diode, any lens, any color
Q1—2N2907 PNP transistor
(All resistors are 10%, 1/2-ohm)
R1—1800-ohm
R2—100,000-ohm potentiometer (taper not important)
R3—1000-ohm
R4—1500-ohm
R5—22-ohm
R6—22,000-ohm
R7—470-ohm
SPKR—Piezoelectric tweeter speaker from Radio Shack