

# NEW IDEAS

## Turn-signal alarm

HOW OFTEN HAVE YOU FOLLOWED THE CAR in front of you and noticed that its turning signal was flashing without purpose. Perhaps you, too, have left your turning signal on by mistake. The clicking sound of the interrupter in many cars is almost inaudible; therefore, it's difficult to know whether the signal cut-off has taken effect. At other times steering turns are so gradual that the cancellation switch fails to do its job. A brute-force solution to making the interrupter more noticeable is to connect a buzzer between the two terminals of the turn flasher relay (located under the dashboard). However, that may prove annoying to the occupants of the car—making the cure worse than the "disease."

A more practical way of dealing with the problem would be to provide a tone circuit with a reasonable delay so that the tone signal is activated only after the turn signal is left on for an excessively long time. That's the approach taken by the circuit described in here. If you've been having a problem with leaving your turning signal on, perhaps this circuit will interest you.

### How it works

Figure 1 shows a circuit that can be used to tell the driver of a vehicle when his or her turning signal is left on for too long. The circuit consists of IC1, a 555 timer; transistor Q1, an MPS3702 PNP preamp/driver; PB1, a piezoelectric buzzer (such as Radio Shack's 273-065); along with an assortment of resistors, capacitors, and diodes. The 555 is connected in the monostable mode, requiring only a momentary negative pulse at pin 2 to trigger the timing cycle.

Power for the circuit is picked off the flasher relay and applied to IC1, pin 8, through diode D1. The negative pulse is provided by an initially discharged capacitor C2. After the initial triggering, the voltage across C2 rises as it becomes charged through R4, a 10,000-ohm resistor. That prevents subsequent interference with the delay function due to false triggering.

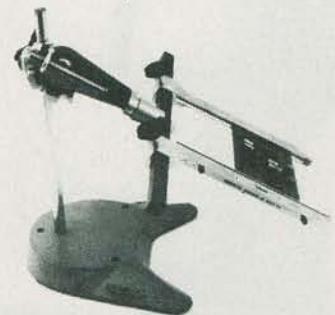
Capacitor C3 and resistor R1 determine the delay. With the component values shown, a delay of about one minute will be provided before the intermittent tweet sound generated by the circuit begins. If

higher values are used for C2 and R1, a longer delay time will result. The light-emitting-diode, LED1, provides a voltage drop to assure complete transistor blocking during the off periods of the flasher. Alternatively, two diodes in series can be used.—Walter K. MacAdam

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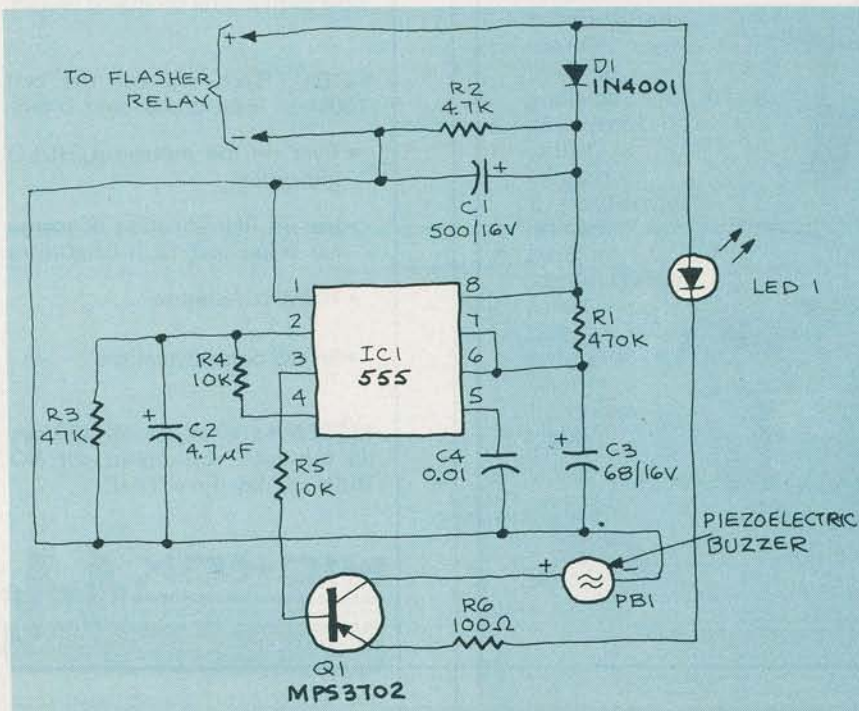


FIG. 1