

Circuit & Design Ideas

Interesting circuit ideas from readers and technical literature. While this material has been checked as far as possible, the circuits have not been built and tested by us. As a consequence, we cannot accept responsibility, enter into correspondence or provide constructional details.

Quiz game adjudicator

This circuit was designed as a quiz game adjudicator and is used as a teaching aid for children.

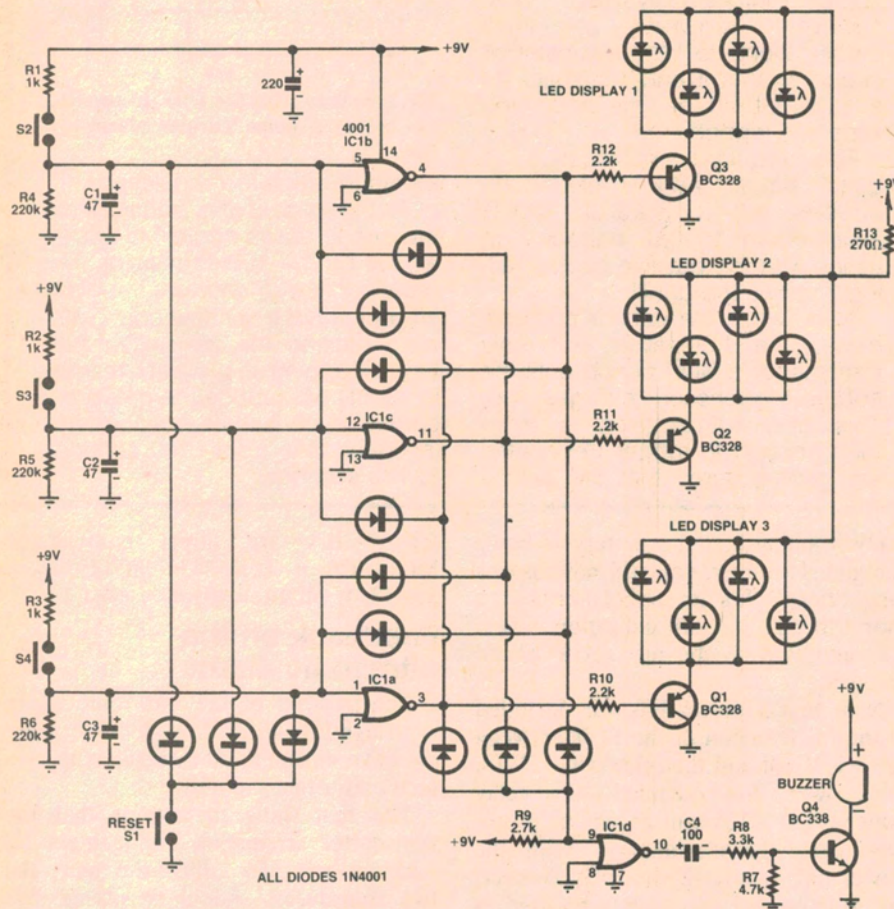
The circuit uses a single quad NOR gate IC, four transistors and 12 diodes. IC1a, b & c are wired as inverters with one input of each gate connected to ground. When a contestant presses a button (S2-S4), the remaining input of the associated NOR gate is pulled high and thus the output of the gate goes low.

This low output does three things. First, it inhibits the other two gates so that pressing the other two buttons has no effect. Second, it turns on an associated PNP driver transistor (Q1-Q3) via a 2.2kΩ resistor to light one of the LED displays. And third, it momentarily turns on Q4 via inverter IC1d and timing circuit C4R8 to operate an electronic buzzer for approximately two seconds.

Finally, pushbutton switch S1 discharges the 47μF capacitors C1-C3 to reset the game. Construction of the circuit is not critical and the pushbutton switches can be mounted inside 35mm film canisters.

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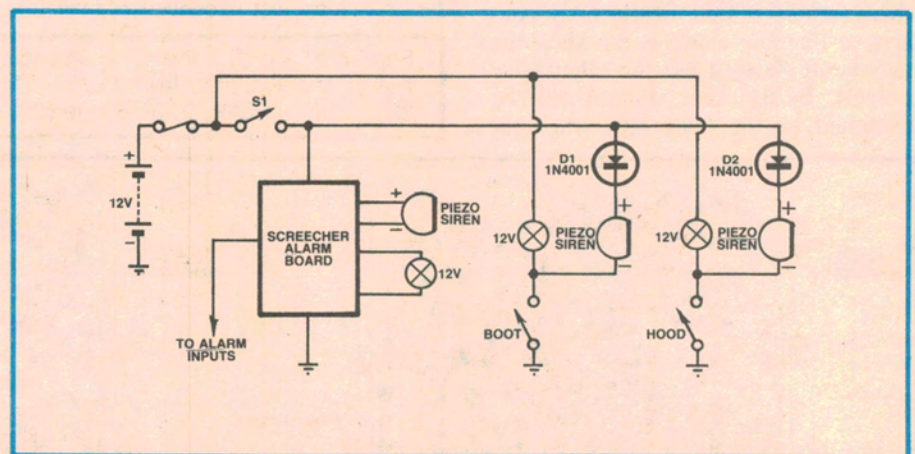
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Screecher protection for bonnet and boot

While the Screecher car burglar alarm (EA, August 1986) is marvellous for protecting the passenger compartment, it offers no defence against the thief who attacks the boot or engine areas. The solution is obvious — simply add extra sirens to protect these areas and trigger them by means of normally open switches.

The accompanying circuit shows the basic scheme. Switch S1 from the original circuit now controls the additional siren circuits as well as the main alarm. This means that the peripheral alarms only operate when the main alarm is on. Diodes D1 and D2 provide isolation for the peripheral sirens so that the boot and bonnet lamps can be used in-



dependently of the alarm system.

In most cases, you will be able to make use of the existing boot switch, although a bonnet switch will have to be

fitted. The bonnet lamp can be left out of circuit if not required.

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