Almost every new car manufactured in the world today is fitted with reversing lights. Great idea! Not only do they help you see where you are reversing in the dark, but they also make your intentions clear to anybody behind the car. In some Asian countries it is even a legal obligation for every car to have an externally audible reversing indicator. The one problem with these ideas is that the car driver does not directly benefit from them.

reversing buzzer

'clunk, click, buzz . . .'

It is an undeniable fact of human nature that we often forget or neglect the care and caution instilled into us while learning a new skill. Nowhere is this more obvious than in driving a car. We frequently tend to do what is convenient rather than what is correct. Just one small, but common, 'fault' is starting the car in gear with the clutch depressed. Then you only have to release the clutch and away you go . . . But in which direction? It can prove very 'surprising', to say the least, when you expect to move smoothly forwards but instead find the driver of the 'slightly shortened' car behind you tapping on your window to express his opinion of your character in a somewhat heated manner.

The circuit

The circuit here also gets excited when you start the car in reverse gear but all it does is buzz at you in displeasure.

When the ignition is switched on the car battery voltage is applied to the circuit and the oscillator around N2 starts. This provides one of the inputs to N3. If the car is in reverse gear, the second input of N3 is taken high via R7, and this causes the buzzer to sound.

1

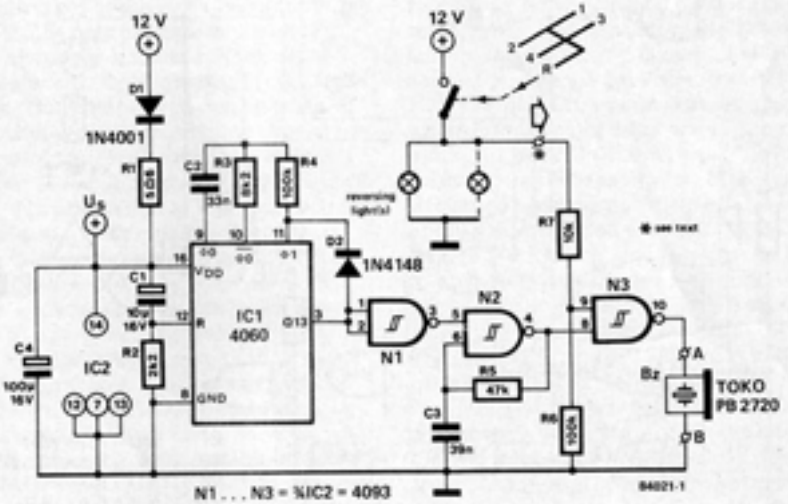

Figure 1. The circuit, as shown here, uses normal components that most people will probably have lying around. It can easily be built on a small piece of veroboard and needs only three external connections, +12 V, ground and a connection to the reversing light circuit. This last line must have +12 V when the reversing lights are lit. A workshop manual or your friendly neighbourhood mechanic may help to find a suitable place to tap this line.

2

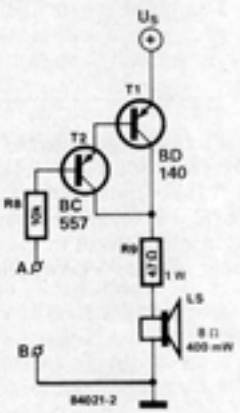

Figure 2. This 'circuit' can be used in place of the buzzer, and so get rid of the only 'difficult' component in the whole design.

Simultaneously, pin 12 of the CD 4060 is taken high and this chip is reset. This IC is a 14-stage binary counter and oscillator, the frequency of which is set by external components (C2, R3 and R4). After a certain time (about six seconds), the Q13 output (pin 3) of IC1 goes high and stops oscillator N2 by taking its input (pin 5) low via N1. This, of course, stops the buzzer and ensures that it does not sound every time the car is put into reverse gear, which would be very annoying.

An alternative to using the buzzer is the small circuit shown in figure 2, consisting of a loudspeaker driven by a darlington pair. Transistors T1 and T2 may also be replaced by a single-package darlington such as a BC 516.