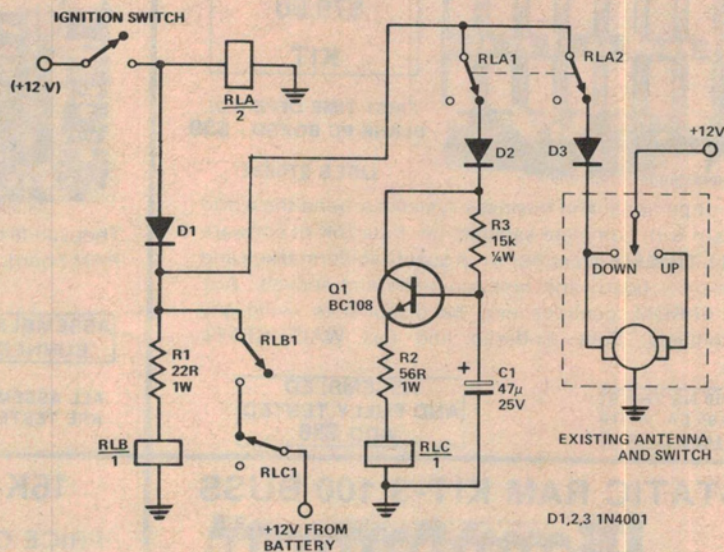


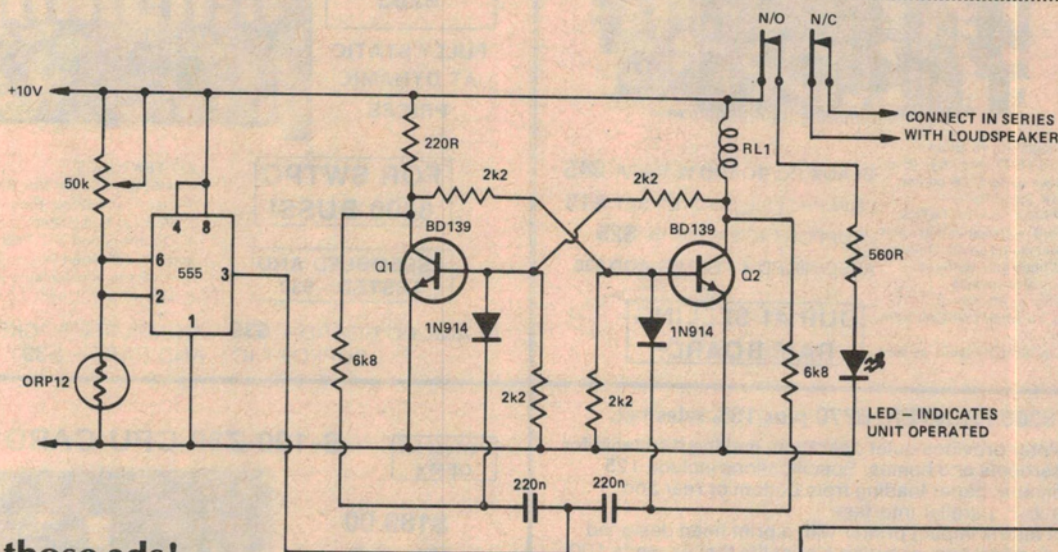
# Ideas for Experimenters

## Automatic antenna retract

This circuit was designed to retract automatically a motorised car antenna every time the ignition is turned off. With ignition on, relays A and B are energised (total current drain about 100 mA). When the ignition is turned off, relay A is turned off and 12V from the battery drives the antenna down and charges C1 via R3. With the values shown for C1 and R3, after about a three second delay relay C is energised and interrupts power to relay B, removing supply voltage from the circuit. This circuit suits the two-wire control motorised antennas commonly available and comes from **Ian Hawke of North Richmond, NSW**. The values of R2 and R3 may need to be adjusted to suit different motors as the retraction time varies.



D1,2,3 1N4001



## Silence those ads!

This circuit, from **G.B. Wolfe of Bombala NSW**, will switch off the sound from a TV when those annoying adverts come on just as the programme is getting interesting. All you need is a torch handy in order to flash a light at an LDR.

The circuit operates as follows: when light is incident on the photodiode its resistance drops, driving pins 6/2 of the 555 towards 0V. This produces a positive-going pulse from pin 3 which is passed to the collectors of Q1 and Q2. Suppose the flip-flop is set with Q1 on, Q2 off when power is switched on. The positive pulse on the collector of Q2 has

no effect but the positive pulse on Q1 collector is passed on to the base of Q2 via the 2k2 resistor and Q2 begins to switch on. The collector voltage of Q2 now begins to fall rapidly and this drives base of Q1 towards 0V, switching the transistor off. The circuit thus rapidly changes state to Q1 off, Q2 on. When Q2 is on, the relay operates, the loudspeaker is disconnected and the LED goes on.

A further flash of the torch on the photodiode will cause a pulse from the 555 and the flip-flop switches back to Q1 on, Q2 off. The loudspeaker is reconnected and "Cop-Shop" comes back into your living room!

## Any ideas?

Have you had a bright idea lately, or discovered an interesting circuit modification? We are always looking for items for these pages so naturally, we'd like to hear from you.

We pay between \$5 and \$10 per item — depending on how much work we have to do on it before we publish it.

The sort of items we are seeking, and the ones which other readers would like to see, are novel applications of existing devices, new ways of tackling old problems, hints and tips.