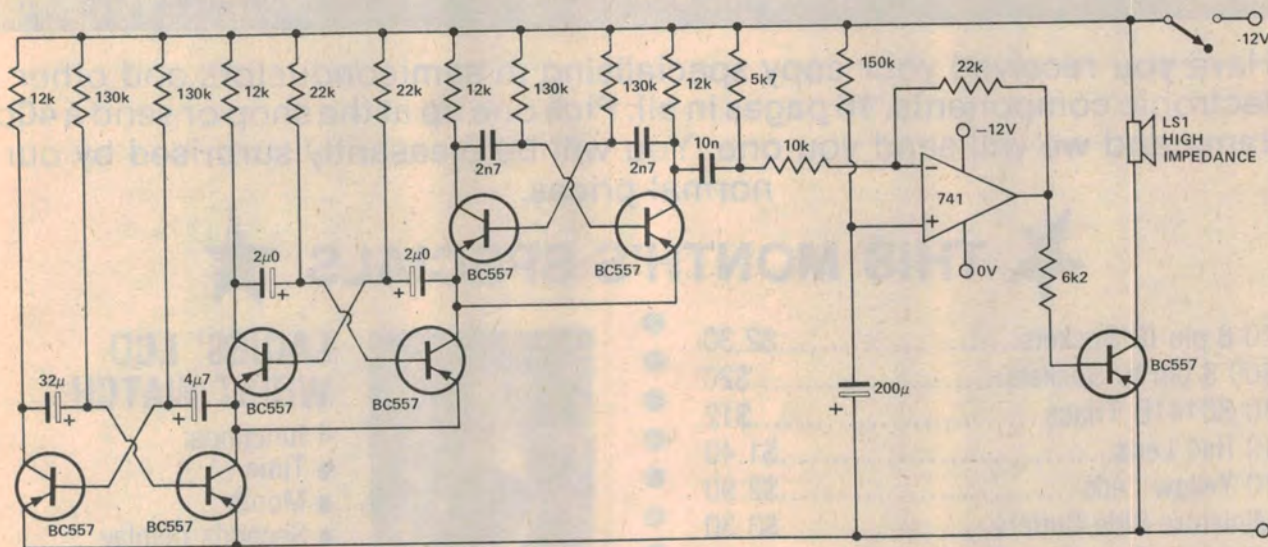


# Ideas for Experimenters

These pages are intended primarily as a source of ideas. As far as reasonably possible all material has been checked for feasibility, component availability etc., but the circuits have not necessarily been built and tested in our laboratory. Because of the nature of the information in this section we cannot enter into any correspondence about any of the circuits, nor can we produce constructional details.



## Gentle clock alarm

RING! RING! BUZZ! CLANG! PIP PIP!

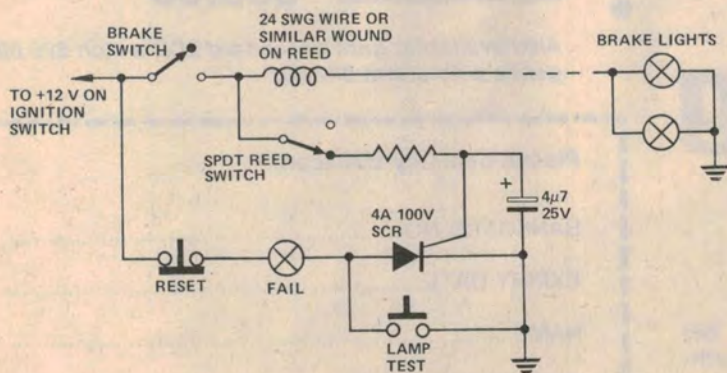
This is hardly the sound that anyone wants to hear first thing in the morning (especially one of *those* mornings!)

There are gentler ways to wake up. This circuit provides an alarm which

builds up from being inaudible to fairly loud over the course of about a minute. As a result, you are always woken up by the minimum volume required to wake you: a far more comfortable experience than the usual trauma!

The three multivibrators are connected so that the first two modulate the power supply of the third.

The resultant signal is a rather pleasant warbling sound. This is shifted in dc level by the voltage at the non-inverting input of the op amp, and since this voltage is provided by R and C, it will rise slowly, shifting the signal in dc level and thus increasing the dc bias of the transistor. Thus the output of the circuit will rise slowly in volume.



## Car lamp failure warning

Many lamp failure warning circuits indicate only when the lamp being monitored is supposed to be on. This circuit will 'latch' to show that the brake lights are faulty — even if the fault is intermittent, as is often the case with wiring faults.

Enamelled copper wire is wound onto an SPDT reed switch until a certain number of turns is found (by experiment) that will open the contacts when both lamps are working. If either of the lamps should fail, the contacts will remain closed, triggering the thyristor.