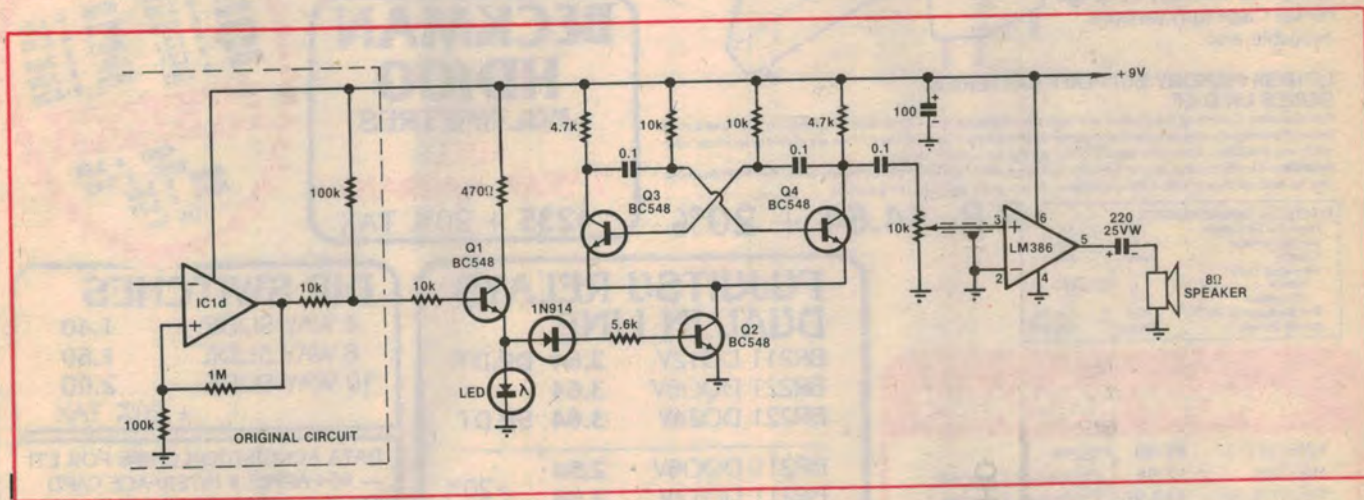


Circuit & Design Ideas

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

Audio indicator for the Heart Rate Monitor



The portable Heart Rate Monitor described in the July 1972 issue is not only suitable for use with humans — it can also be used with animals! By adding this simple audio indicator circuit, the unit becomes a valuable aid during veterinary surgery. In particular, it provides constant monitoring of heartbeat while the animal is under anaesthetic and, because the output is audible, the vet does not have to interrupt the operation to check this vital parameter.

The circuit uses four NPN transistors and an LM386 audio amplifier IC. Transistor Q1 is turned on and off by the output of IC1d and drives a LED to provide visual indication of a heartbeat. Q1 also controls transistor Q2 via a diode and a 5.6kΩ resistor. When Q1 is on, Q2 also turns on to supply power to Q3 and Q4. Q3 and Q4 form an astable multivibrator which generates an audible tone each time Q2 is turned on (ie, when a heartbeat is detected). The output of

the multivibrator is taken from the collector of Q4 and AC-coupled to the LM386 via a 0.1μF capacitor. The 10kΩ potentiometer serves as a volume control.

Thus a brief audio tone is emitted by the loudspeaker each time a heartbeat is detected. The circuit is now in regular use in a veterinary clinic and saves considerable time during operations.

B. Baker,
Mascot, NSW.