

## IDEAS FOR EXPERIMENTERS

### Ramp generator

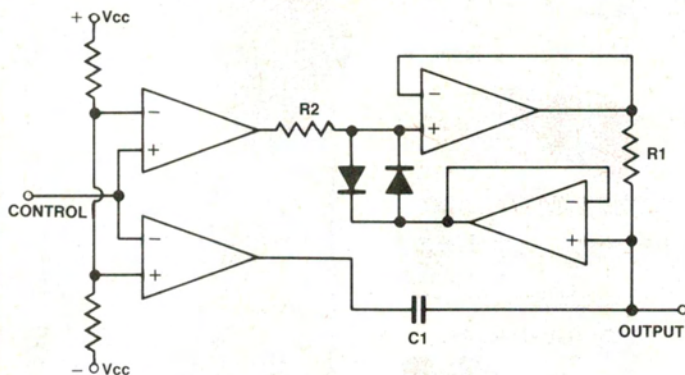
R. E. Morton of Carlton NSW sent us this idea for a ramp generator.

A low voltage level on the control input causes the output to ramp down to  $-V_{cc}$ , while a high input causes the positive equivalent. Feeding in a square wave, of course, will yield a triangular output.

Mr Morton claims the particular advantage of his circuit is

that long time constants can be used, with the linear section of the ramp extending over almost the entire voltage range.

This happens because there is a constant current flowing out of, or into, C1. This current is constant because the voltage potential across R1 is maintained by the voltage drop across the diodes.



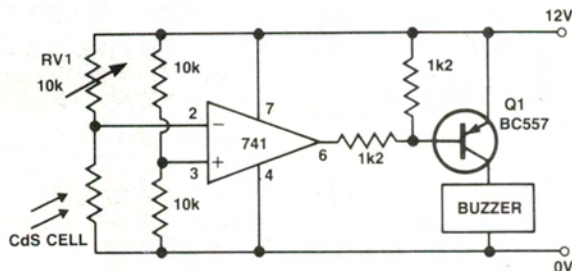
### Fridge Watcher

Ron Klein of Walgett NSW sent us this article. It's a cunning adaptation of a standard op-amp circuit, and is used to monitor the operation of a kerosine refrigerator.

The core of the circuit is a Cadmium Sulphide cell which has a sharply defined sensitivity to radiation of about 5700 Angstroms i.e: yellow light.

The CdS cell is aimed at the

kerosine flame of the 'fridge, via a suitable piece of tubing. When the 'fridge is operating normally, this flame will have a strong yellow colour. However, if it either flares up, or drops low, the colour changes, and with it the resistance of the CdS cell. This change of resistance is detected by the op-amp, and the buzzer triggered via the BC557.



### Circuit construction method

Here is an interesting method of building experimental and prototype circuits from J. Drinda of Villawood, NSW. It's quick, cheap and easy to troubleshoot.

Select a firm piece of card-

board or plastic, and glue all the components you require to it, with their connectors sticking up in the air. Then use thin wire to connect the various pins as required. The wire must be insulated, thin and flexible, and

ideally, you should be able to solder it without having to strip it (ie, "Leumex" coil winding wire).

The connections should be made by a mixture of wrapping and soldering, i.e: wrap the wire

around the pins as required, then when you have finished one node, go around and solder them all on. This ensures a good mechanical connection and provides a second check that you have everything correct.

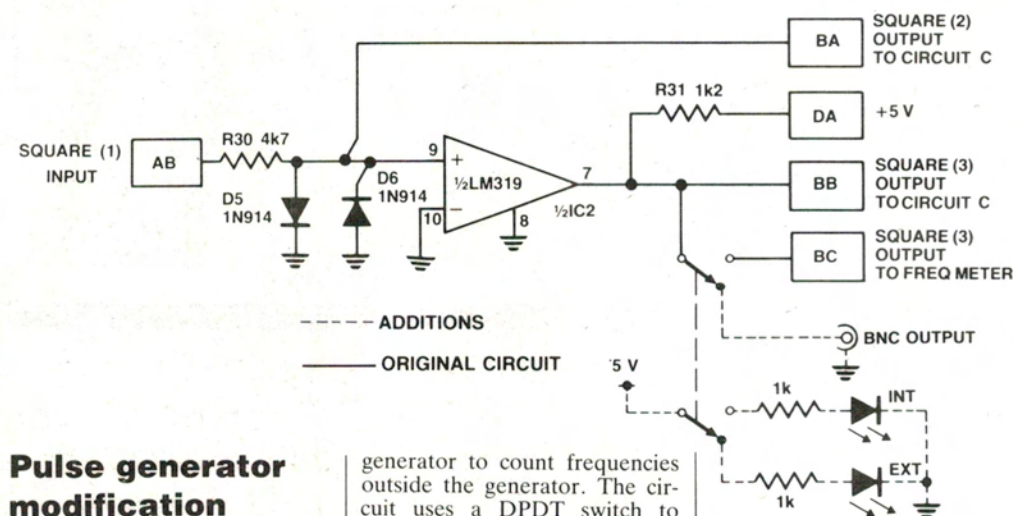
### Cassette tips

Eric Eulenstein of Albury NSW sent us some ideas on using cassettes.

The worst thing about using cassettes as a storage medium is that they take such an enormous amount of time to load and save. There are a number of techniques you can use to make things go a little faster though.

When loading a program from the cassette start, there is about ten seconds of dead time as the tape spools through the leader. Most of this wasted time can be eliminated by the physical removal of the leader. Of course, this can only be done with cassettes that have been assembled with screws.

Another technique that is very useful is to press RETURN before operating the RECORD key on the recorder. Remember there is a few seconds pause between the time the return key is operated and the time when the program issues forth.



### Pulse generator modification

Arthur Barrett of Cartwright NSW suggested this handy addendum to our ETI-166 function/pulse generator project.

His circuit allows the frequency counter in the pulse

generator to count frequencies outside the generator. The circuit uses a DPDT switch to select either an external source or the on-board frequency as the input.

The BNC output and the select switch can be mounted on the side of the cabinet. If you wish, the other side of the DPDT can be used to select bet-

ween two LEDs to indicate the position of the switch.

This simple circuit should save you approximately \$70 on the price of a good frequency meter.