

## Time Delay Indicator

Made in December 1978 and published in Everyday Electronics, March 1979



My files show this was originally submitted in Dec. '78 as part of my "Uniboards" series of simple transistor designs (q.v.), but IPC lifted it out and published it on its own instead, as an "ideal use for your free stripboard" given away free this month. IPC relabelled it as Time Delay Indicator.

I started using those miniature vibrating reed transistorised buzzers that had appeared on the market, instead of using a hulking great electromechanical one. The TIS43 unijunction transistor was standard fare at the time and I found a small-signal thyristor to do the job.

My rapidly evolving construction style tried to make prototypes look half-decent, using a blue BIMbox and a matching blue single-pole "Hekla" rocker switch that only needed a round hole (not a rectangular one) to carry it. Pretty standard stuff otherwise. The prototype is long gone

## Seconds Indicator

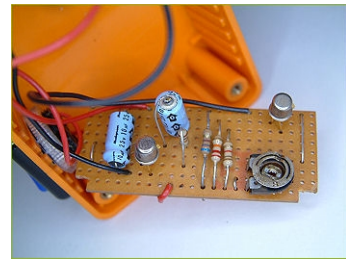
Published as "Darkroom Timer" in Everyday Electronics, July 1979



This project was also intended for my "Uniboards" series but it was published on its own, as it didn't fit into IPC's prescribed format of standard-size veroboard. It was just a transistor astable multivibrator that flashed an l.e.d., which could be fine-tuned to produce one flash per second. What use was that? Well not much really, until IPC rechristened it as "Darkroom Timer" which made more sense.

I managed to work out a veroboard layout without having to physically cross the two timing resistors over each other, like I'd seen done elsewhere and thought was a bit of a clumsy approach.

The case was an orange ABS BIMbox and it carried a Hekla single-hole rocker switch. The prototype is still around, and here it's revealed in glorious colour:



There's not much else to say about it really. No doubt they would use a PIC microcontroller these days to flash an I.e.d. as the cost is probably comparable, and program it on-screen to far greater accuracy than an R/C astable can achieve, but there is a lot of useful mileage and mental exercise to be had by grappling with the intricacies of discrete transistor designs, even today.

I had great fun designing and building these projects as a 19-year old and more was to come!

You can download an article reprint from [alanwinstanley.com](http://alanwinstanley.com).

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