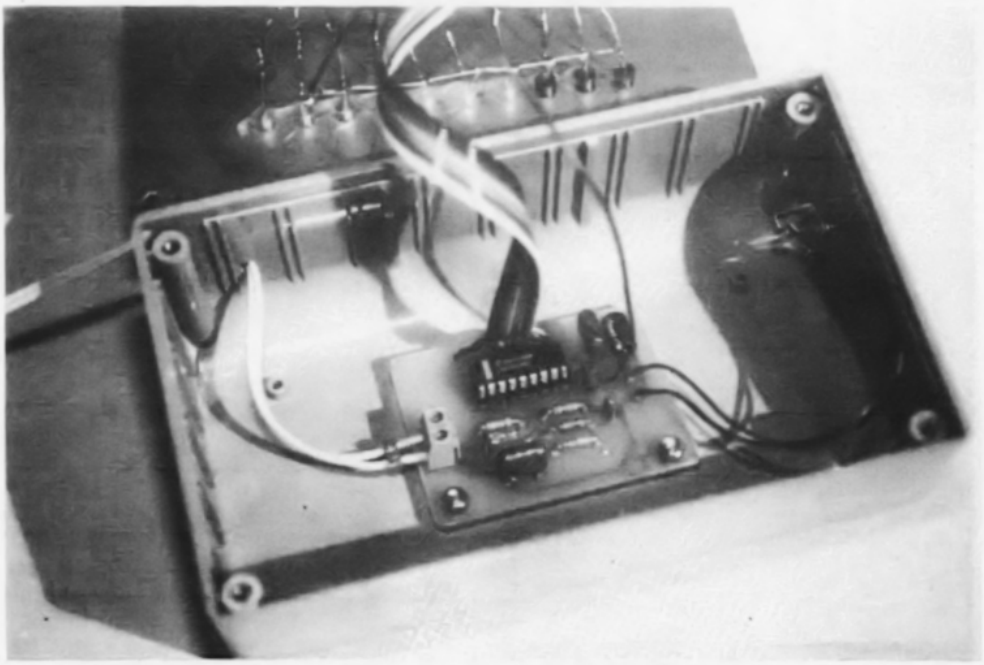
“Windicator”
EPE July 1995

This would be my final constructional project of that era – though quite how this project came about I don’t recall. I had a lot of fun putting the Wind Speed Indicator together (just before the moniker ‘Windicator’ came to mind). A simple generator was made from a d.c. motor and I used four plastic scoops from garden fertiliser glued to a pulley to make the anemometer head. Brian Brooks of Magenta Electronics then sourced a quality motor with better bearings and higher output so I used that instead. From my day job I snaffled a sample plastic container and lid which made a weatherproof housing for the motor. There were never any problems with moisture or weather.

It was easy to hook this to a National Semiconductor LM3914 bargraph chip which I wired as a moving-dot meter. A small board carried the chip but the LEDs had to be hard-wired on the front panel, connected by a ribbon cable. I used a sloping plastic console housing and the idea again of flat-top cylindrical LEDs (see the Pond Heater Thermostat) that were a tight interference fit into the aluminium panel. This made for an ‘invisible fixing’ which wasn’t quite 100% effective due to the drilling of the thin front panel, so I also glued them from behind to stop them falling out. It looked smart enough, and a jumper link on the board could select bargraph mode on the neat display.

The Windicator’s biggest hurdle was the calibration. Not having access to a wind tunnel, I tested it against my car speedometer instead: I decided that the headwind from the car’s forward motion would be accurate enough for the Windicator. I live in a rural area with fast country lanes all around, so one very calm Sunday morning I set off into the countryside and found a particular fast, straight, open and usually deserted road near a forest. I hooked the prototype d.c. motor assembly to a digital voltmeter and stuck the spinning cups out through my car’s sunroof and set off. The voltage climbed as predicted and I made several test runs, faster each time, trying to steer straight, keep the car on the road, change gear and holding the Windicator head all at the same time...



Interior view of the Windicator assembled electronic components. Note how the l.e.d.s are connected.

Everyday with Practical Electronics, July 1995

Just as I neared the end of one test run, a local horserider suddenly popped into view and she eyed this spectacle suspiciously. I carried on unperturbed, pretending that I was some sort of official-looking meteorologist taking scientific readings and jotting them down. The horserider trotted by as I pulled into a car parking space. I made a few more test runs, managing to hit 75 mph and noting the voltmeter readings against the car's velocity. These I translated into the bargraph readout. The resultant scale was anything but linear, but it was accurate against my car's speedo and it did the job just fine. In fact the result was better than I hoped for, as the scale was expanded at the bottom end, meaning that a decent number of LEDs would light up even at lower wind speeds.

I used coloured LEDs with red for the top end (storm/ hurricane!), and the prototype performed flawlessly at home, lashed to a balcony railing for a lengthy period in an exposed location. My photo on page 519 shows the head atop a length of aluminium angle where it caught the wind nicely (attracting the neighbours' attention too). I was pleasantly surprised by the performance of the simple circuit overall.

Magenta Electronics sold the kit for many years and in due course Mike (Ed.) acquired the prototype which he used at home: on a windy day the Windicator would say whether or not it was a good day for sailing a dinghy. It seems apt that someone wished off me the very last constructional prototype that I made, so at least I got one thing right! ☺

Alan Winstanley

31st October, 2014