



# Portable Traffic Collision Avoidance Systems

## Zaon offer a low cost solution that will interface to your GPS

**AS GOOD AS** it might be to have traffic alert and avoidance information in the cockpit, the cost of such systems to date has precluded most pilots from entertaining the thought. This situation has changed dramatically with the introduction of the Zaon Portable Collision Avoidance System or PCAS, costing just \$2495+gst from South Pacific Avionics at Ardmore. *KiwiFlyer* borrowed one and took it flying.

### How it works

Zaon's PCAS is a portable unit that can be powered from a standard 'cigarette lighter' outlet at 10-48V. It may be velcroed to the top of an instrument panel (or sit there on rubber feet) and provides a mono display of nearby traffic on a 54x19mm screen. Alternately the unit can be plugged into a compatible GPS such as the Garmin 495. In this mode the Zaon screen is deactivated and traffic information is overlaid on the GPS screen.

The system is a passive one; that is it doesn't interrogate other aircraft. Traffic is detected from the signals returned to secondary surveillance radar by the transponders in other aircraft within a 6 nautical mile radius. Of course traffic can only therefore be reported if other aircraft are operating their transponders and are within SSR coverage.

Alert range can easily be configured for distance and altitude preferences. Headset audio buzzers and speech alerts can also be activated for when converging traffic is detected. These fall into two categories of "Traffic advisory - Monitor closure rate." and "Traffic alert - Obtain visual Contact."

When used in stand alone mode, the unit's primary display will indicate the three closest aircraft within the selected coverage range. Distance, direction (in 45 degree quadrants), relative altitude and climb or descend trend are all displayed.

Control buttons are easy to operate and internal menu navigation is straight forward and intuitive. The manual supplied with the unit is excellent, providing good commentary on how PCAS works and what its limitations are (there aren't any significant ones), as well as operating instructions which are comprehensive and clearly written.

Installing PCAS is of course, no

substitute for maintaining a proper lookout. However most pilots will soon realise just how inadequate their lookout procedures actually are. Prepare for one or two revelations once you turn the device on.

### A second opinion

For a second opinion, we spoke to a pilot already using Zaon PCAS near a busy training field (not Ardmore). He described it as a Godsend, telling tales of confused student pilots giving incorrect or unintelligible position reports, then picking them up on PCAS and noticing where they really were. He also mentioned flying over his house one day with the Zaon detecting a threat 400' above and behind which he dismissed as a false alert, only to be asked by his wife later that evening if he had seen the aircraft following him when he flew over

the house that morning. He described the Zaon as wonderful to have and a great way to make use of millions of dollars of SSR equipment. We would have to agree.



Zaon PCAS can be connected to a compatible GPS, displaying range, direction and relative altitude for nearby traffic whose transponder is being interrogated by radar. You'll be surprised at the number of other aircraft sharing your sky.



Multiple threats appear as diamonds with relative altitudes displayed, in this case at 500' above and 1000' above.

### PCAS in practice

We tried out the Zaon PCAS in both stand alone and GPS modes. Having traffic information appear on your GPS screen is certainly very nice and requires no thought at all to interpret, however the Zaon's own screen does a perfectly good job of indicating where to look for close aircraft. It won't take more than an hour of use to become sufficiently accustomed to the display indicators, such that a standard instrument scan will prompt you to look at a certain part of sky as well if necessary.

One soon learns to "trust the instrument". On more than one occasion a nearby aircraft would be indicated, followed by the pilot (and co pilot) reactions (or dismissals) of "where? I can't see it". This would be followed by a better look and a visual sighting. It becomes apparent that more aircraft share the sky than you might normally think.



Zaon PCAS operating in stand alone mode on approach to Ardmore. The display indicates nearest traffic on the taxiway 0.3nm ahead and 100' below as well as two aircraft (both recently climbing) in the circuit to our left at relative altitudes of 600' and 900' above.

### Special offer for KiwiFlyer Readers

Mention *KiwiFlyer* when you purchase a Zaon PCAS from South Pacific Avionics and receive \$100 off the normal \$2495 retail price (+gst). Contact Ross Osborne on (09) 298 1373, email: [ross@avionics.co.nz](mailto:ross@avionics.co.nz) or visit [www.avionics.co.nz](http://www.avionics.co.nz)