



Now you see me

It's all well and good keeping a good lookout yourself, but if you don't show up well in the air how can someone else see you?

If lookout is about seeing, the flip side is being seen, which isn't always as easy as it should be, even in perfect visibility – and you might be surprised by the number of Airprox where one of the pilots said they never even saw the other aircraft. In fact, looking at the Airprox Board stats, 'Did not see traffic/late sighting' accounted for nearly half of the GA Airprox in 2015, and stats for 'see-and-avoid' not being an effective barrier to collisions look similar for 2016.

Take this scenario, and if it's ever happened to you, you'll get this; you're flying into the sun when another aircraft suddenly appears ahead coming straight at you – before you can even blink, it's gone. At a closing speed of around 200kt there's virtually no time to do anything, you certainly don't have the nine or ten seconds you might get in other circumstances to spot it and take action (see the section on Lookout).

Head-ons from the sun might be reasonably rare, but other "I never saw them" near-misses aren't, it's a common

thread in Airprox however good the lookout and perfect the weather.

Of course you can do simple things to help yourself be seen such as switching on a beacon or strobe lights (and why not the nav and landing lights, it doesn't cost any more money) and turning on the transponder to Mode C/Alt, if fitted.

Many people switch it on as a matter of course, but if you don't, think about this; even if you're not talking to air traffic, if they can see you they know what's going on in and around their airspace which means they can offer advice (depending on the service) to others.

That means everyone gets better situational awareness because controllers know where people are and, crucially, where they're going to be so there are fewer surprises for all, plus other aircraft

with collision warning kit such as TCAS can see you.

Using the transponder brings us to the growing realm of electronic conspicuity. No matter how visible an aircraft is there are times when it's still not going to be seen with the naked eye, particularly where blind spots are involved.

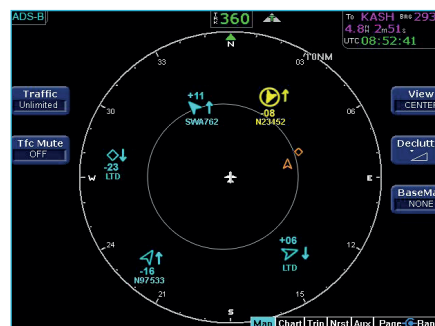
Electronic conspicuity might be a bit of a mouthful and perhaps a bit controversial in some quarters, but 'traffic warning devices' are an important and growing trend in GA. You can read more about the thinking behind their adoption in the CAA's CAP1391 at caa.co.uk/cap1391.

Talk to any pilot who has started to use one of the increasing number of 'traffic warning' (much easier to say...) systems and the odds are they'll say they wouldn't now fly without it.

'Being spotted is all about actually being seen, whether that's visual with lights or electronic via a transponder or traffic warning device'



Don't forget both lights and transponder... how you can show up on a traffic warning screen



Although there isn't a common system yet and many are still developing (at a fast rate) they aren't expensive and do a good job of warning you who's out there and where. Here's a brief rundown of some current ones (there are other systems also available).

FLARM (Flight Alarm) and **Power FLARM** have been a great aid to glider pilots for more than a decade and fitment is recommended by the British Gliding Association. A cockpit transceiver linked to a small cockpit display (it can provide voice alerts with third-party software) warns of nearby FLARM-equipped traffic which poses a collision risk, but it has no conflict assessment capability.

Power FLARM adds the capability to receive and display 1090MHz ADS-B-out (Automatic Dependent Surveillance Broadcast) which transmits highly accurate positional information to ground controllers and also directly to other ADS-B equipped aircraft.

PilotAware is slightly similar to Power FLARM but on a different frequency. It also receives 1090MHz ADS-B. However, it has no conflict assessment capability and generally uses an external display, such as a tablet computer with navigational software; it can also provide audio warnings such

as "Traffic 2 o'clock, Above, 10 Kilometres". There is also a 'radar' function that shows the location of aircraft in your local area without the need to use a third party application, so it can for instance work on a mobile phone.

The **LPAT** Low Power ADS-B Transceiver has been in development since 2012 with the support of the CAA and AOPA after NATS carried out feasibility work on development of a reduced cost ADS-B transceiver for GA.

The idea was to provide the possibility of better detection of GA aircraft without a transponder near, and within, controlled airspace to reduce infringements.

Recognising that GA pilots are unlikely to use such equipment unless they receive a benefit, NATS has also included a cockpit display to show the position of other aircraft transmitting 1090MHz ADS-B to help visual acquisition and reduce the risk of conflict. Airborne trials have been taking place successfully over the last couple of years.

Other units are appearing called Traffic Situation Awareness with Alerts which also offer conflict detection. These not only work out who might be a threat to you, but rather like TCAS in larger aircraft they voice-announce the information so that you hear

something like "traffic, left 3 o'clock, 1/2 mile, 100ft above".

So far with most of these systems there's no avoiding action guidance, that's down to the pilot's judgement, but the whole point of them is to help pilots look for and see nearby aircraft quickly and easily.

Where does it all go from here? While traffic warning devices don't replace a good lookout, there's no doubt that electronic conspicuity is becoming a great aid in GA for everything from paragliders to fixed- and rotary-wing aircraft, the trick now is to get the different systems talking to each other.

But for now it can only be a secondary aid to a good lookout and sensible scan; think of it as an additional tool that can give earlier warnings to provide better awareness of traffic around and to help spot a threat – and being spotted is all about actually being seen, whether that's visual through the use of lights, or electronic via a transponder or a traffic transmitting and warning device.

But if you do nothing else, switch all lights on and do fly with your transponder selected to Mode C/Alt to give ATC and other aircraft a chance to detect you, increase their situational awareness and ultimately avoid you. ■