

# The OUTs and INs of ADS-B



Do you fly in controlled airspace? If so, you're going to be affected by the introduction of ADS-B OUT. We put some of your questions to the CAA's ADS-B specialist, Clayton Hughes.

**T**he CAA is proposing that ADS-B OUT be mandatory in controlled airspace for aircraft above FL 245 by the end of 2018, and by the end of 2021 for aircraft below FL 245.

Using a combination of satellites, transponders and Global Navigation Satellite System (GNSS) receivers, ADS-B involves aircraft self-reporting their GNSS-derived position. It will replace current radar surveillance.

**Vector: Clayton, how do people know if they need to equip?**

Clayton: If they want to fly in controlled airspace beyond the mandatory dates, they'll need ADS-B.

In the past, the accuracy of the position of aircraft was controlled by the Airways system, but each individual aircraft will now be responsible for the integrity of their position.

This could lead to greater efficiency of airspace management, which will benefit all operators.

**V: What sort of equipment will operators need?**

C: People will need a compliant 1090 MHz Mode S extended squitter transponder, and a compatible GPS position source. This can be a separate GPS, integrated with the transponder, or an all-in-one transponder with GPS.

The biggest issue is ensuring the transponder and GPS are compatible with each other.

Existing equipment certified to older standards can be used, but newly installed equipment must be TSO-C166b certified.

The Notice of Proposed Rule Making (NPRM) for ADS-B above FL 245 will be out soon, which will give guidance on equipment and installation.

Even if you only fly below FL 245, make sure you read that NPRM, because the equipment requirements will apply to you if you want to fit ADS-B before the mandatory date.

**V: What about the cost of equipment?**

C: There is a cost factor, just as there was when transponders were first introduced. There is a range of options available now, including the all-in-one transponders, which can save

money and time in both integration and installation. We recommend discussing this with your avionics supplier.

**V: Can uncertified equipment be used?**

C: The CAA is looking at conducting a trial to see if uncertified equipment has the required position integrity, and is compatible with the New Zealand system.

**V: What about ADS-B IN?**

C: ADS-B IN adds a receiver that allows people to see the location of aircraft transmitting ADS-B OUT signals. There are apps available that allow people to track ADS-B, but they should not be used as they may not be in real time.

There are no plans to require ADS-B IN in New Zealand, but there are benefits to it. I'd encourage people to learn more about it.

**V: Are there any common misconceptions?**

C: Some think the GPS in their IFR aircraft has to be hooked up to the transponder. That's not the case, as the GPS used for ADS-B can be a separate unit, or included in an all-in-one transponder. Just be aware that the GPS receivers in the all-in-one ADS-B units can't also be used for navigation.

**V: Are there ongoing checks to ensure equipment remains calibrated and functional?**

C: Most people are already used to maintaining and operating transponders, and there's no real difference for ADS-B.

The 24-month transponder check requirement will still apply, and ADS-B will need to be run through a test set as would a Mode S transponder. There are ADS-B upgrades available for some existing test sets to ensure they're compatible.

**V: What if people need more information?**

C: I'd say have a chat to your local avionics supplier, or email me, [clayton.hughes@caa.govt.nz](mailto:clayton.hughes@caa.govt.nz).

There's also a set of frequently asked questions on the New Southern Sky web site at [www.nss.govt.nz/the-plan/surveillance](http://www.nss.govt.nz/the-plan/surveillance). ■