Benefits of ADS-B

> Automatic dependent surveillance-broadcast (ADS-B) helps to improve safety by broadcasting an aircraft's location. This allows air traffic control (ATC) and other pilots to 'see' aircraft fitted with ADS-B.

ADS-B equipment has 2 operating modes – ADS-B OUT and ADS-B IN:

- **ADS-B OUT:** broadcasts aircraft location up to twice per second. Dedicated ADS-B ground stations receive the broadcasts and relay information to ATC for precise tracking of aircraft. These broadcasts are also received by aircraft equipped with ADS-B IN systems.
- **ADS-B IN:** receives information from ADS-B OUT equipped aircraft in range.

All aircraft operating in Australia under the instrument flight rules (IFR) must be fitted with approved ADS-B OUT equipment. Aircraft operating under the visual flight rules (VFR) are not required to use ADS-B equipment; however, we strongly encourage VFR operators to fit both ADS-B IN and OUT technology.

BENEFITS TO SITUATIONAL AWARENESS

According to an Australian Transport Safety Bureau (ATSB) study conducted in 2022, pilots benefit from ADS-B IN through:

- a higher chance of locating another aircraft through alerted see-and-avoid techniques
- receiving alerts of other aircraft in the vicinity early (if ADS-B IN is fitted).

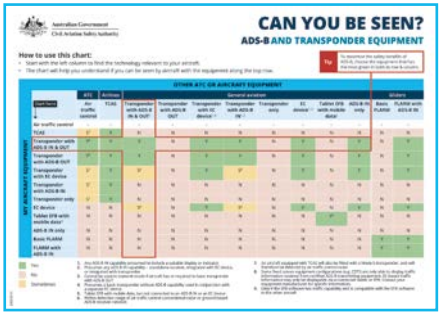
Other benefits include:

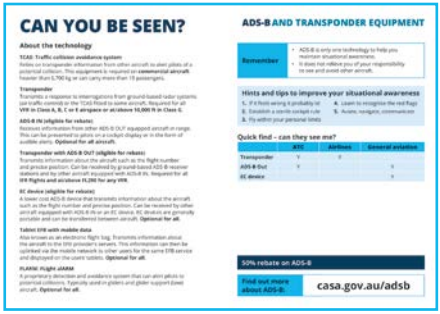
- more effective search and rescue services. Using both ground and space-based ADS-B receivers, the chances of pinpointing the position of an ADS-B OUT equipped aircraft in an emergency are greatly improved
- more accurate reporting of an aircraft's position
- efficient spacing and routing in controlled airspace outside of conventional radar coverage but within detection range of an ADS-B ground station.

EQUIPMENT VISIBILITY AND LIMITATIONS

- Portable electronic conspicuity (EC) devices have a limited range and detectability due to factors such as mounting position, aircraft structure and the low emitted power.
- Air traffic services cannot see information provided by an EC device.
- TCAS (traffic collision avoidance system) fitted to larger high-performance aircraft is unable to detect portable EC devices.
  - If your aircraft has a transponder fitted, it is desirable to operate the transponder at the same time as the EC device.

For detailed information on equipment options and benefits for VFR aircraft, refer to *AC 91–23 ADS-B for enhancing situational awareness*.





IMPORTANT CONSIDERATIONS

Pilot distraction

- Effective, external visual scan remains a critical pilot task, even in an aircraft fitted with ADS-B IN.
- Do not rely exclusively on information provided by ADS-B IN receivers.
  - Just because you can't see anything on a traffic information display doesn't mean there isn't something there.
  - Not all aircraft have or are required to have ADS-B OUT equipment.
- Pilots must be mindful of distraction and minimise the time spent 'heads down'.
- Traffic information detected in a busy non-controlled aerodrome environment (such as the circuit area) may be excessive and increase pilot distraction rather than provide safety benefits.

Misconfigured equipment

- Misconfigured ADS-B and transponder equipment can send inconsistent or erroneous information to other aircraft and ATC.
- When utilising the same EC device in multiple aircraft, pilots must change the 24-bit address and other aircraft-specific settings whenever the device is moved between aircraft.

Further information including how ADS-B works, and a tool to help you decide which ADS-B technology is right for you is available at casa.gov.au/adsb