ADS-B Creates a New Standard of Aviation Safety:

What is ADS-B?

ADS-B is the acronym for Automatic Dependent Surveillance - Broadcast—a new technology that allows pilots in the cockpit and air traffic controllers on the ground to "see" aircraft traffic with much more precision than has been possible before. ADS-B can make flying safer and can allow more efficient use of our airspace.

ADS-B-equipped aircraft broadcast their precise position, speed, and altitude via a digital datalink. ADS-B receivers that are integrated into the air traffic control system or installed aboard other aircraft provide users with an accurate depiction of real-time aviation traffic, both in the air and on the ground.

Unlike conventional radar, ADS-B works at low altitudes and on the ground so that it can be used to monitor traffic on the taxiways and runways of an airport. It's also effective in remote areas or in mountainous terrain where there is no radar coverage, or where radar coverage is limited.

One of the greatest benefits of ADS-B is its ability to provide the same real-time information to both pilots in aircraft cockpits and ground controllers, so that for the first time, they can both "see" the same data.

How does it work?

ADS-B relies on the satellite-based GPS system to determine an aircraft's precise location. The position data is combined with other information such as the type of aircraft, speed, altitude, and flight number. The information is converted into a digital message and broadcast via a radio transmitter.

Other aircraft and ground stations within about 150 miles receive the radio broadcasts and display the information in user-friendly format on a computer screen. Pilots in the cockpit see the traffic on a Cockpit Display of Traffic Information (CDTI). Controllers on the ground can see the ADS-B targets on their regular traffic display screen, along with other radar targets.
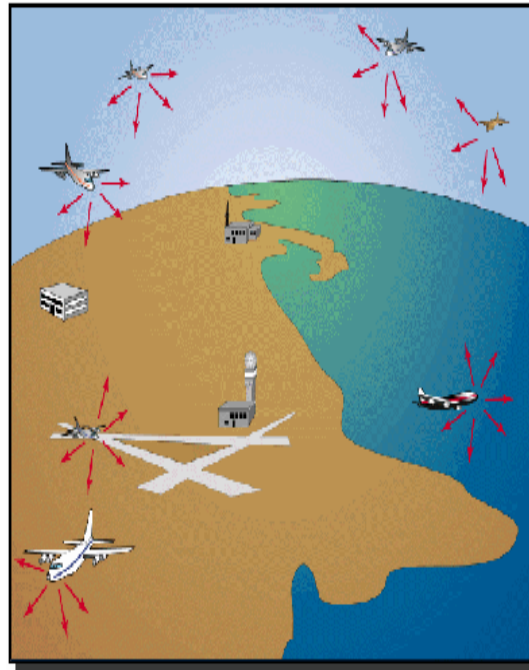
Advantages of ADS-B

- ADS-B technology is the cornerstone of future air traffic control systems. It will improve aviation safety by giving pilots in the cockpit and controllers on the ground reliable, accurate, real-time information about aviation traffic.
- By using existing, proven, digital communications technology, ADS-B can be implemented rapidly for a relatively low cost.
- ADS-B provides traffic information to pilots that is currently unavailable to them. Because the system has an effective range of more than 100 miles, ADS-B provides a much greater margin in which to implement conflict detection and resolution than is available with any other system.
- Pilots and controllers using ADS-B data will be able to determine not only the position of conflicting traffic, but will clearly see the traffic's direction, speed, and relative altitude. As the conflicting traffic turns, accelerates, climbs, or descends, ADS-B will indicate the changes clearly and immediately.
- ADS-B systems can further enhance aviation safety through features such as automatic traffic call-outs or warnings of imminent runway incursion.
- ADS-B technology can be used in both aircraft and in ground vehicles. This will provide affordable, effective surveillance of all air and ground traffic, even on airport taxiways and runways, and in airspace where radar is ineffective or unavailable.
- ADS-B can improve airport capacity, by allowing more efficient operations at airports that do not have radar service.
- General aviation aircraft can use ADS-B to receive flight information services such as graphical weather depiction and textual flight advisories. In the past, these services have been unavailable or too expensive for widespread use in general aviation.