Airplanes

An airplane can be challenging to locate, but with new flight-tracking standards and technology finally catching up, aircraft could be just a set of coordinates away.

BY HOWARD SLUTSKEN

The tragic, unsolved disappearance of Malaysia Airlines Flight 370, and the two-year search for the black boxes from Air France Flight 447 have accelerated the International Civil Aviation Organization (ICAO) and the airline industry's adoption of new standards for position reporting. Starting in 2018, airlines will be responsible for tracking aircraft every 15 minutes, and by 2021, the standard will include minute-by-minute autonomous tracking of aircraft in distress.

While satellite-based flight tracking has been available for years, recent advances in technology have created new efficient and cost-effective solutions. Inmarsat's SwiftBroadband-Safety service, for example, leverages the company's long-established L-band satellite network to add position reporting to a high-speed IP-based cockpit communications link. Panasonic Avionics, which also offers worldwide satellite tracking through its Global Communications and FlightLink services, will immediately meet the ICAO requirements. And Rockwell Collins' ARINC MultiLink merges aircraft position data from multiple sources, providing seamless flight tracking.

Automatic Dependent Surveillance-Broadcast (ADS-B), regarded as the next generation of flight-tracking technology, is already replacing or augmenting traditional air traffic control radar services around the world. It promises to deliver a host of resources to and from the cockpit, including communication with other airplanes. Aireon – a partnership of air navigation service providers, including Nav Canada, Italy's Enav, Denmark's Navair and the Irish Aviation Authority – has begun testing ADS-B payloads on partner Iridium's NEXT satellites. The company expects to fully deploy its constellation of 66 satellites by mid-2018, providing global flight-tracking coverage.

Popular tracking app Flightradar24 is also planning to jump into space next year. "We're working on a number of exciting projects with the goal of providing global ADS-B coverage," says Ian Petchenik, Flightradar24's director of Communications. Flightradar24 currently has over 16,000 volunteer-hosted, ground-based ADS-B receivers. More than two million daily users, from individuals to airlines, track 150,000 flights per day. "Anyone interested in a flight is a user of our service," Petchenik says.

By mid-2018, Flightradar24 hopes to orbit a nanosatellite-based service in cooperation with GomSpace's Aerial and Maritime division. Each about the size of two loaves of bread, the satellites will initially cover the airspace from 37°N to 37°S latitude. Until now, over-water position reporting has been an inexact science, but with the arrival of space-based ADS-B, it's becoming well within reach. ■