

NextGen Works for the Gulf of Mexico

For decades, flights over the Gulf of Mexico could not be “seen” by air traffic controllers. Without radar coverage, helicopters servicing oil and natural gas platforms and airliners flying overhead had to be separated by great distances or kept out.

That changed with Automatic Dependent Surveillance–Broadcast (ADS-B), part of the Next Generation Air Transportation System (NextGen). ADS-B uses GPS signals to determine an aircraft’s precise location.

ADS-B Out avionics transmit position information, speed and other data to other properly equipped nearby aircraft and to a network of ground stations, which relay that data to controller screens and cockpit displays on aircraft equipped with ADS-B In avionics.



The FAA has deployed 12 ground stations on offshore oil platforms. Coupled with nine ground stations along the U.S. Gulf coast, the platform stations extend ADS-B coverage well into the Gulf. As a



result, controllers can now track aircraft over the Gulf, making the airspace safer and more efficient than ever.

Helicopters

Nearly 4,000 oil and natural gas platforms dot the choppy waters of the Gulf's 600,000 square miles. The men and women who work on them depend heavily on helicopters for supplies and transportation. Some 5,000 to 9,000 helicopter offshore platform operations take place every day.

In the past, when bad weather obstructed visibility and pilots had to navigate using onboard instruments rather than visually avoiding other helicopters, the FAA required each helicopter to stay in its own 20-by-20-mile airspace grid. Or they were simply grounded.

ADS-B enables 5-nautical-mile (nm) separation services for helicopter traffic operating below 10,000 feet. This allows direct routing clearances for ADS-B-equipped helicopters, which has shortened trips by about 14 nm and saved about 14 gallons of fuel per flight.

For the helicopter transport company PHI, it has meant an increase in flight hours during periods of low visibility from 1,500 to almost 20,000, said Pat Attaway, the company's director of operations.

"While ADS-B does help in fuel savings, the biggest benefit for us is schedule dependability," said Attaway, whose company transports more than a million passengers each year. "With ADS-B, I can operate like an airline."

En Route

A growing number of airlines will be able to benefit from ADS-B as they comply with the FAA mandate to outfit aircraft with the technology by 2020. Equipage can enable savings of flight time, fuel and aircraft exhaust emissions as illustrated by JetBlue Airways' experience.

JetBlue equipped 35 Airbus A320s with ADS-B Out in 2013 and got results almost immediately.

A September 2013 flight from Los Angeles to Fort Lauderdale, Fla., provided a test. A line of thunderstorms had formed on the west coast of Florida. The best alternate route was over the Gulf.

Without ADS-B the JetBlue flight would have been rerouted north over land to get away from the storms and keep the A320 in radar range — adding 15 minutes to the trip, burning an extra 60 gallons of jet fuel and pumping aircraft exhaust emissions into the air.

With ADS-B, the flight went over the Gulf to avoid the storms and controllers tracked the A320 the entire time.

"We saved about 100 nautical miles of extra flying," said Joe Bertapelle, JetBlue director of Strategic Airspace Programs. The new re-route is not yet routine and already provides an annual savings of about \$250,000, Bertapelle said.

Extending ADS-B Coverage

The FAA, in collaboration with Mexican Airspace Navigation Services, will soon fill a gap in ADS-B coverage over the Gulf. Current ADS-B coverage stops about 200 nm short of the Yucatán Peninsula.

That will change in September 2016 when the FAA will install three ground stations in Mexico.

The new ground stations in Mexico will benefit aircraft flying over the Gulf between the United States and the Yucatán Peninsula, making 5 nm separation of aircraft possible where 100 nm is now required.

The FAA estimates the expansion will result in nearly \$70 million in savings for operators because of increased flights over the Gulf along the U.S.-Mexican airspace boundary. Increased capacity will reduce delays during peak periods, saving aircraft direct operating costs and passenger time.

