Boeing-Led Flight Trials Show That Tailored Arrivals Boost Efficiency, Cut Noise and Emissions

Recent flight trials have shown that an innovative Air Traffic Management concept called Tailored Arrivals can improve efficiency and reduce noise and emissions when aircraft land.

The Boeing Company [NYSE: BA], the Air Traffic Alliance (a grouping of European Aeronautic Defence and Space Co., Airbus and Thales), the Australian air carrier Qantas Airways and air navigation services provider Airservices Australia jointly conducted the flight trials last year at airports in Sydney and Melbourne, Australia.

In Tailored Arrivals, clearance instructions are transmitted electronically to arriving aircraft, so that pilots and controllers don't have to engage in multiple voice communications. Linked directly to an aircraft's Flight Management System, the electronic data guide the aircraft on a steady descent profile along the most efficient path to its destination.

The Tailored Arrivals concept is one of several Air Traffic Management approaches that Boeing and the Air Traffic Alliance are supporting as part of an effort to improve interoperability and coordination between air and ground systems around the world.

"The fact that Boeing and the Air Traffic Alliance have been cooperating on this project shows our commitment to global interoperability," said Kevin Brown, Boeing Phantom Works vice president and general manager of Advanced Air Traffic Management. "Airlines should be able to fly worldwide without needing special equipment or procedures for each different region."

During the flight trials, two Qantas aircraft -- an Airbus A330 and a Boeing 747-400 -- utilized Tailored Arrivals at Sydney and Melbourne. Data link messages were sent when the aircraft were in cruise flight about 140 miles from the airports. The flight crews required no additional equipment or special training to fly the Tailored Arrivals. They conducted more than 70 flights from April through September, which completed Phase 1 of the program.

Results from Phase 1 show that actual arrival times were as little as two seconds and never more than 30 seconds off of predictions made 40 minutes in advance. Radio voice communications were nearly eliminated, which reduced the workload of controllers and potential radio frequency congestion.

Flight and simulation data are expected to show that Tailored Arrivals could save between 400 and 800 pounds of fuel per flight, which adds up to more than $100,000 per year per aircraft. Using less thrust during descent also yields quieter operations and reduced aircraft emissions, which results in less impact to the environment on final approach.

"The flights using Tailored Arrival procedures with existing equipment on our Boeing and Airbus aircraft demonstrated that a significant gain in operational efficiency is possible, " said Capt. Murray Warfield, Qantas Airways general manager for Regulatory and Industry Affairs. "We look forward to widespread implementation of this capability."

Airservices Australia Acting CEO Hisham El-Ansary said that "the Australian trials have once more shown that a cooperative approach in combination with state-of-the-art systems makes major innovations feasible. Reduced controller workload, more efficient operations, and less environmental impact are all great results."

"Our cooperation in Australia clearly is an important milestone towards truly interoperable systems," said Lionnel Wonneberger, Air Traffic Alliance president. "But it is only the beginning; our team, together with Boeing, is currently working on a number of common issues facing air traffic modernization. You can expect to see more results from this work reported throughout this year."

The Boeing Phantom Works Advanced Air Traffic Management group is dedicated to providing innovative solutions for dramatically increasing the efficiency, safety and security of air traffic systems throughout the world. Phantom Works is the advanced research and development unit and catalyst of innovation for The Boeing Company.

The Air Traffic Alliance is a grouping of EADS, Airbus and Thales. It combines leading industry forces to accelerate the evolution of Air Traffic Management systems through the integration of air, ground and space expertise. The alliance is working to bring mutual benefits to passengers, airspace users, air traffic service providers and airports, while improving safety and security in a more efficient air transport system.

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For further information:
Daryl Stephenson
Boeing Phantom Works
The Boeing Company

314-232-8203
Chantal Dorange
Europe
The Boeing Company
34-91-426-4504
Soeren Fischer
Vice President, Strategy
Air Traffic Alliance
office: 33 6 71 90 93 80
Sylvie Sureda Perez
Communications Manager
Air Traffic Alliance
mobile: 33 6 73 79 07 48