

NASA Facts



National Aeronautics and
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NASA TECHNOLOGY TO HELP ON-TIME ARRIVALS

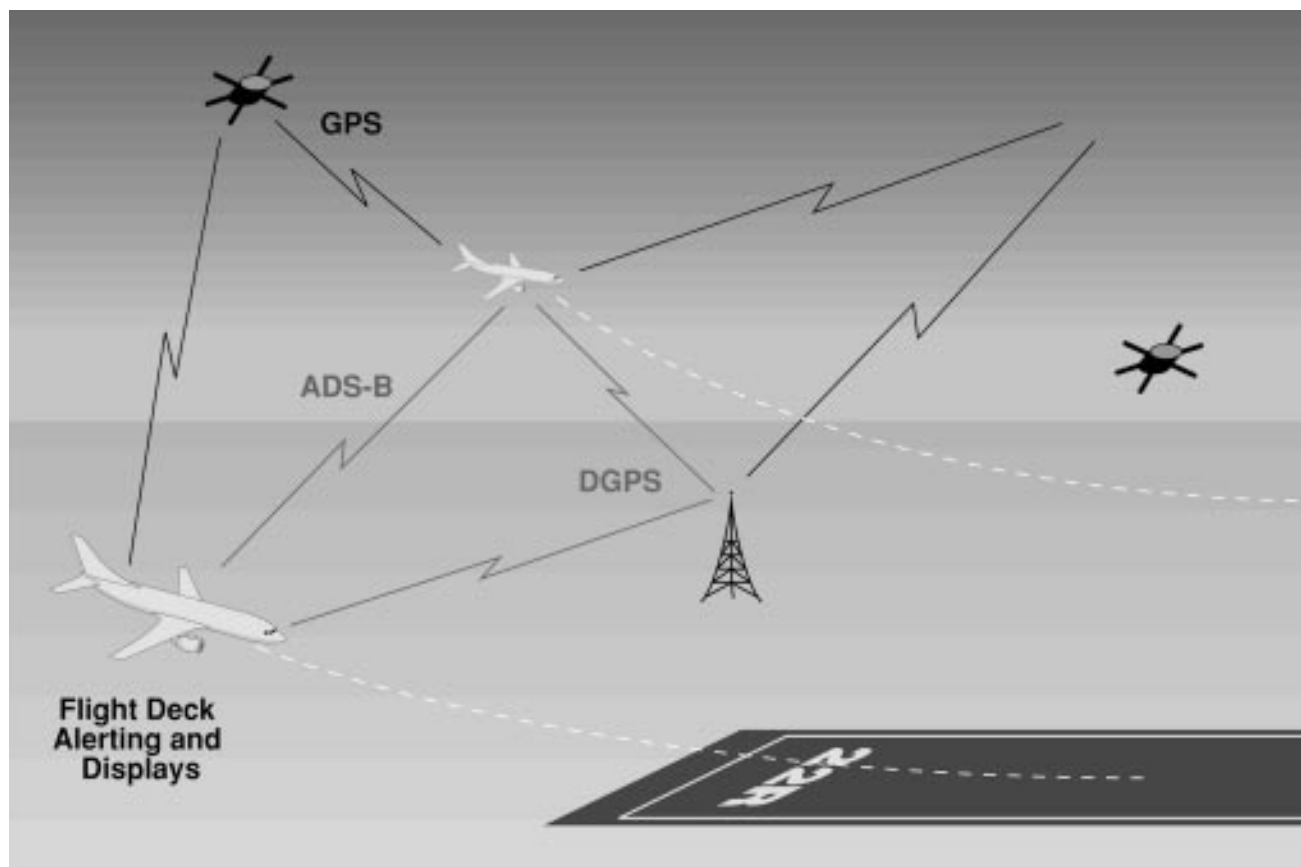
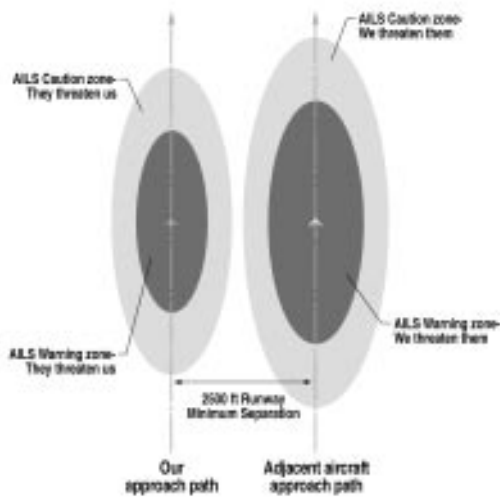


Diagram of Operational Concept

Air travelers frustrated with ever-increasing delays at the nation's airports may soon look forward to a new technology that could solve a significant part of the problem.

FAA regulations currently require that planes

coming in for landings be at least 4,300 feet apart. When bad weather moves in, airports with runways spaced more closely together have to delay flights, which causes headaches for travelers and costs industries millions of dollars each year.



AILS Alert Zones

NASA's Capacity Aviation Systems Program, led by Ames Research Center, has been seeking a way to solve this problem, and Airborne Information for Lateral Spacing (AILS) may be the answer.

The AILS technology was developed at Langley Research Center as a joint project with Honeywell Technology Center and Honeywell Airport Systems. A procedures-based concept that uses existing flight-deck technology, AILS allows planes to safely land more closely together than is currently allowed in instrument conditions.

By using Automatic Dependent Surveillance-Broadcast (ADS-B) and signals from a Global Positioning Satellite (GPS), incoming planes can determine exactly where they are and can communicate that information with each other. An AILS display in the cockpits shows each pilot the nearby traffic.

In the rare event that one of the planes strays off course, the AILS alerting system lets the pilot know. If that path continues and the straying pilot does not correct his course, a series of alerts sound in the cockpit of the plane being intruded upon so the pilot can take appropriate evasive action.

The system was tested using NASA's B-757-200 aircraft, NASA test pilots and commercial 757 captains. Initial testing of the system took place in

Langley's cockpit motion facility simulator, and then in-flight tests were conducted during the summer of 1999 at NASA's Wallops Island flight facility.



Flight Deck Presentation of AILS

The AILS technology was demonstrated for the first time over active airspace in November 1999 at Minneapolis-St. Paul International Airport.

AILS has the potential to enable safe and efficient aircraft landings on closely spaced parallel runways, moving closer to the goal of increasing on-time landings, no matter what the weather conditions. Because of the potential to safely increase capacity, several major airlines are pursuing this capability.

Additional research will be performed at NASA Ames Research Center.

For More Information:
Contact the NASA Langley Office of Public Affairs at (757) 864-6124

or

Visit the AILS web site at:
<http://ails.larc.nasa.gov>

