



Forging Future Flight: Aeronautics Research at the NASA Langley Research Center

(Airspace Systems Research - Systems Analysis, Integration and Evaluation)

The NASA Langley Research Center (LaRC)

Located in Hampton, VA, LaRC was established as the nation's first civilian-led aeronautics research laboratory in 1917. NASA Langley serves as a world leader in "cutting edge" aeronautics research. Approximately \$180 million was invested in aeronautics research at LaRC

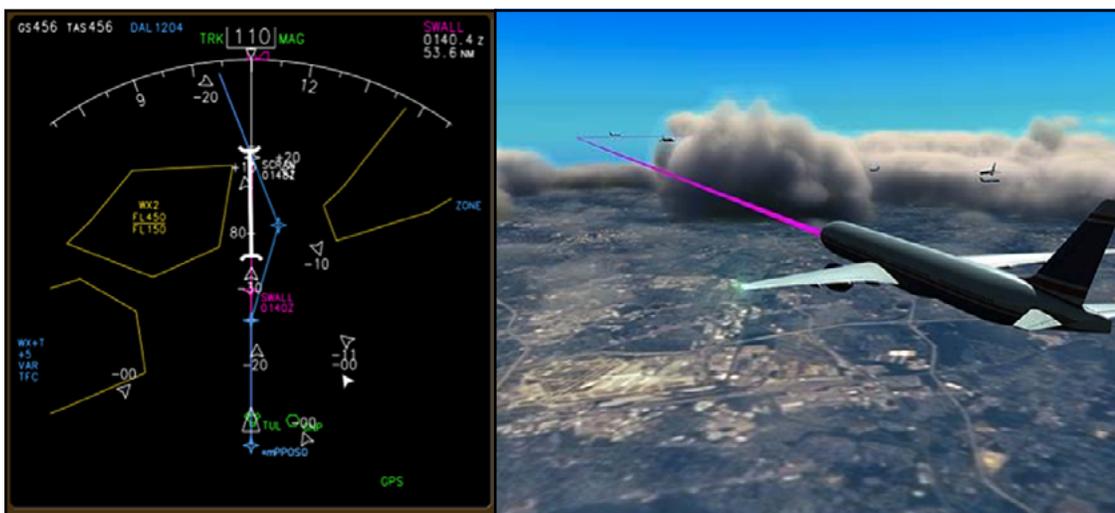


(2011). In 2010 NASA Langley contributed \$946.8 million to the Virginia economy while supporting 8,624 jobs in the state of Virginia. In the Hampton Roads area in 2010, Langley contributed \$886.7 million to the local economy while supporting 7,962 jobs.

Aeronautics Research Directorate (ARD)

The ARD at NASA LaRC manages projects that support four programs: (1) Integrated System Research Program, (2) Fundamental Aeronautics Program, (3) Aviation Safety Program, and (4) Airspace Systems Program. Research activities are performed under the specific projects described later. The NASA LaRC ARD facilitates external partnerships to complement the agency's aeronautics mission.

NASAfacts



Airspace Systems Program (ASP)

Objectives of ASP:

- Reduce aircraft fuel consumption, noise, and emissions
- Accommodate projected growth in air traffic while preserving and enhancing safety
- Maximize flexibility and effectiveness in the use of airports, airspace, and aircraft
- Reduce travel times and travel-related delays

System Analysis, Integration, and Evaluation (SAIE) Project (Airspace Systems Program)

This Ames Research Center (ARC)-led project integrates work at ARC and LaRC. The work at LaRC advances the maturation and implementation of precision scheduling, controller managed spacing, and flight deck interval management technologies.

Primary Goal: To mature integrated technologies and enable the transition of key capacity and efficiency improvements in the National Airspace System (NAS) to achieve NextGen capacity targets for the NAS.

Technical Challenges:

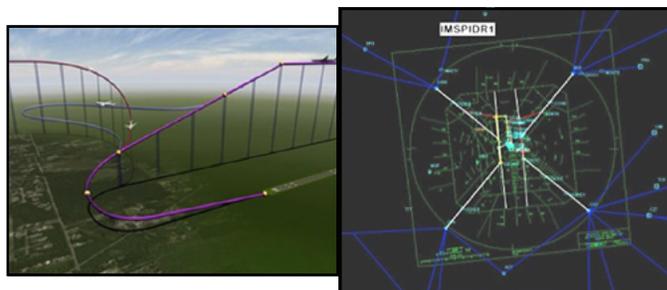
- Accelerate maturation and implementation of technologies developed to enhance the NAS
- Maturing foundational research requires additional efforts and integration of operational skill mixes to be teamed with researchers (“idea to implementation”)
- Facilitate concept and technology maturation and transition to customers and stakeholders
- Application of new solutions to air traffic management challenges

Recent Research Accomplishments:

- A recent simulation was conducted to evaluate the ability of advanced flight deck software, displays, and procedures to improve arrival operations to airports with parallel runways.

LaRC Facilities and Capabilities Used in Research:

Air Traffic Operations Lab (ATOL) and computer simulation



LaRC researchers are helping to accelerate the maturation and implementation of precision scheduling, controller managed spacing, and flight deck interval management technologies used for SAIE’s Air Traffic Management Technology Demonstration (ATD)-1.

National Aeronautics and Space Administration

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For more information about NASA LaRC aeronautics research, visit <http://aero.larc.nasa.gov/>

NASA Facts