Spring 2018 Findings and Recommendations: Subcommittee on Airports

Spring 2018 FAA
Research, Engineering, and Development
Advisory Committee Meeting
Washington, DC
April 11, 2018

Activity Since Fall 2017 Meeting

- Reviewed new research project statements developed by the FAA Office of Airports and Office of Energy and Environment
- Met on March 20, 2018, to review Airport Technology Research Program progress, provide input regarding future research needs, and provide constructive input regarding project challenges

Airport Technology Research Program at a Glance

Safety & Planning RPAs	Pavement RPAs
S1 Airport Planning & Design	P1 National Airport Pavement Testing Facility
S2 Airport Safety Data Mining	P2 National Airport Pavement Materials Research Center
S3 Aircraft Rescue & Firefighting	P3 Field Instrumentation & Testing
S4 Wildlife Hazard Mitigation	P4 Advanced Materials
S5 Visual Guidance	P5 Pavement Design & Evaluation
S6 Runway Surface Safety Technology	P6 Non-destructive Testing Technologies
S7 Airport Safety & Surveillance Sensors	P7 Software Program Development and Support
S9 Airport Research Taxiway	P8 Extended Pavement Life
S10 UAS Integration at Airports	
Airport Noise & Environmental RPAs*	**New/Enhanced Facilities**
N1 National Noise Survey	Fire Safety Building
N2 DNL & Metrics Evaluation	Pavement Lab Extension
N3 Sleep Disturbance	Photo Laboratory
N4 Noise Mitigation	
N5 Operations	
E1 Environmental Tools and Guidance	

* Airport noise and environmental RPAs are being co-managed by the FAA Offices of Airports and Energy & Environment.

RPA: Research Project Area

Airport Technology Research Program Review--Overview

- Generally pleased with spectrum of research that is underway and progress that's being made on ongoing research projects
- We support the Program's ongoing work and future research directions, which facilitate:
  - Advisory circulars and design guidance promulgated by the FAA Office of Airports
  - Airport infrastructure enhancements currently eligible or prospectively eligible for federal grant funding under the Airport Improvement Program
  - U.S leadership in areas of airport safety, planning, and infrastructure.

R&D Funding was a Key Concern at Spring 2018 Meeting

- Subcommittee members were alarmed at the drastic proposed cuts by the Administration to FAA R&D funding of other research programs, which have considerable benefits to the aviation community
- Although this concern seems to have been addressed in the immediate term through passage of the Consolidated Appropriations Act passed in late March, we look forward to longer-term R&D funding stability via multi-year FAA reauthorization legislation.

Subcommittee Findings and Recommendations

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FINDING 1: The Subcommittee is pleased that Program staff have begun researching safety and design standards for commercial spaceports. We believe that this research should be coordinated with the recently-established and rapidly-moving commercial airspace aviation rulemaking committees (ARCs), principally the Spaceport Categorization ARC.

RECOMMENDATION 1: The Subcommittee recommends that the Airport Technology Research Program staff coordinate with the FAA's Designated Federal Official assigned to the Spaceport Categorization ARC to ensure the ARC is briefed on and possibly provide input into the spaceport standards research project.

Subcommittee Findings and Recommendations

FINDING 2: As was the case at our Fall 2017 meeting, the Subcommittee placed a high priority on research into new categories of aeronautical vehicles--UAS and commercial space vehicles specifically--and their potential impacts on airport safety, operations, and infrastructure. Other high priority research areas are (1) pilot perception of light emitting diode (LED)-based airfield lighting systems (RPA S5), (2) aircraft rescue and firefighting (ARFF) agents (RPA S3), (3) runway incursion prevention technologies (RPA S1), and (4) noise standard development/refinement based on the findings of ongoing noise annoyance data collection (RPAs N2-N5). In order to facilitate ARFF research and store valuable ARFF test equipment and vehicles, the Subcommittee also finds construction of the fire safety building to be a high priority.

RECOMMENDATION 2: The Subcommittee continues to recommend that the FAA Office of Airports place a high priority on research and facilities noted in Finding 2.

Subcommittee Findings and Recommendations

FINDING 3: The Subcommittee remains pleased by the FAA's involvement of a Working Group of subject matter experts (SMEs) to reassess aircraft braking research. Given that the Working Group's efforts span multiple subcommittees' areas of expertise, it will be important to coordinate its work across relevant subcommittees.

RECOMMENDATION 3: The Subcommittee recommends that the findings and proposed approach to future braking research developed by the Aircraft Braking Working Group be coordinated with relevant Subcommittees, namely Human Factors, Aircraft Safety, and NAS Operations. This coordination can take the form briefings to each of these Subcommittees at their Summer/Fall 2018 meetings if time permits.

Subcommittee Findings and Recommendations

FINDING 4: The Subcommittee understands that safety, technical, and operational issues may preclude effective testing of trapezoidal runway grooving in a worn configuration (e.g., grooving “worn” to a half-depth condition) at Atlantic City International Airport. These issues, which include challenges in getting the Tech Center’s B727 aircraft braking test bed to a high enough speed to appropriately simulate landing aircraft braking performance, concerns on the part of the airport operator that half-depth grooving could compromise actual aircraft landing performance, and limited test durations driven by these concerns.

RECOMMENDATION 4: The Subcommittee recommends that Program staff and the FAA Office of Safety & Standards reconsider ways in which the performance of worn trapezoidal grooves—both in terms of drainage and effects on aircraft braking—can be evaluated, including through cooperation with other countries’ Civil Aviation Authorities where trapezoidal grooves have been installed on active runways (e.g., Singapore).

Subcommittee Findings and Recommendations

FINDING 5: The National Airport Pavement Testing Facility (NAPTF) in Atlantic City, a proven national aviation asset, requires maintenance investments—specifically a roof replacement—to ensure its continuing functionality.

RECOMMENDATION 5: The Subcommittee recommends moving forward with plans to replace the roof of the NAPTF as soon as practicable.