

FAA REDAC Subcommittee on Airports

Findings and Recommendations
Winter/Spring 2017

FINDINGS & RECOMMENDATIONS: SUBCOMMITTEE ON AIRPORTS

SPRING 2017 MEETING

ATLANTIC CITY, NJ AND WEBCONFERENCE | March 14, 2017

The Research, Engineering, and Development Advisory Committee (REDAC) Subcommittee on Airports met on March 14, 2017 both at the FAA's William J. Hughes Technical Center in Atlantic City and via web conference. The meeting was unexpectedly abbreviated due to adverse weather conditions that prevented most members from traveling to the Technical Center. Nevertheless, the Subcommittee did have the opportunity to discuss the status of the FAA's Airport Technology Research Program, the Program's FY 2019 budget, and future research needs. The Subcommittee also had the opportunity to hear from Technical Center Director, Shelly Yak, regarding the plan to redesign the National Aviation Research Program (NARP).

The Subcommittee was pleased with the FAA's progress across its portfolio of 19 research project areas (RPAs). Eighteen of these RPAs are classified as either "Safety & Planning" or "Pavement" RPAs, as shown below:

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 Pavement Lab Extension Photo Laboratory	
N2	DNL & Metrics Evaluation		
N3	Sleep Disturbance		
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.			

The Subcommittee was also supportive of the proposed FY 2019 budget for the program, which continues to emphasize foundational research to support (1) advisory circulars and design guidance promulgated by the FAA Office of Airports, (2) airport infrastructure enhancements currently eligible or prospectively eligible for federal grant funding under the Airport Improvement Program, and (3) U.S leadership in areas of airport safety, planning, and infrastructure.

The Subcommittee also appreciates that the Office of Airports and Airport Technologies Research Program incorporated line items for facilities in its FY2018-2020 budgets as the Subcommittee had recommended in the Fall of 2016.

Findings and Recommendations

The following findings and recommendations were developed during the Subcommittee's deliberations. The Subcommittee does not believe that any of these require consideration by the FAA Administrator.

FINDING 1: The Subcommittee supports the FAA's efforts to update its research strategy, goals, objectives via the NARP, particularly with respect examining how the FAA's various research programs can more effectively address research that cuts across multiple research areas (e.g., air traffic system operations, airports, safety, and environment). As shown in the table above, such a cross-cutting approach to research has proven to be successful in the area of airport noise research involving both the Airport Technology Research Program and Environmental Research Program.

RECOMMENDATION 1: The Subcommittee recommends that the FAA seek additional opportunities to utilize cross-cutting approaches to research and development that draw on the skills and expertise from multiple research programs. In addition to aircraft noise, research areas that are ripe for this approach are (1) cybersecurity, (2) unmanned aircraft systems (UAS), (3) time-based flow management (especially the surface elements of TBFM), (4) management of operations during irregular operations such as airport construction and adverse weather conditions, and (5) aviation safety management.

FINDING 2: 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 recommends that the FAA Office of Airports place a high priority on research and facilities noted in Finding 2

FINDING 3: Although it understands that the timelines for research projects are inherently uncertain, the Subcommittee would like to have a better understanding of when research projects are expected to conclude and get periodic updates regarding their schedule for completion as the projects progress.

RECOMMENDATION 3: The Subcommittee recommends that the FAA provide information regarding the estimated schedules for completing new research projects and provide schedule updates regarding ongoing research projects in its briefings to the Subcommittee.

FINDING 4: The Subcommittee finds that priority should be given to research projects that are close to completion (i.e., issuance of final research findings and/or conclusions), particularly those that have promising practical applications.

RECOMMENDATION 4: The Subcommittee recommends that the FAA prioritize research projects that are close to completion such as the regarding trapezoidal grooving project (RPD S.1.4).

Requested FAA Actions

The Subcommittee requests that the FAA take the following actions prior to or at the Subcommittee's next meeting in August 2017:

1. Going forward, the Subcommittee requests that the FAA summarize "popup" research projects (i.e., research requested by the FAA Office of Airports outside of the latest Airport Technology Research Program portfolio the Subcommittee has reviewed) and new project starts in the pre-briefing materials provided to the Subcommittee. These summaries can be brief (e.g., short project description, anticipated budget, and anticipated project duration).
2. The Subcommittee requested "deep dive" discussions from FAA staff on the following topics for its Summer` 2017 meeting:
 - FAA Office of Airports' 10-Year Planning & Environment Research Plan
 - LED lighting research
 - Aircraft braking friction research
 - UAS research
 - Noise research underway both within the FAA Office of Energy & Environment's and Office of Airports' research portfolios

Future Meetings

The Subcommittee will meet next at the FAA Technical Center on August 15-16, 2017.