REDAC Subcommittee on Airports
Summer/Fall Meeting 2017
August 15 – 16
FAA - William J. Hughes Technical Center
Building 300 – Technical Director's Conference Room

Note taker: Erin DeBarth, Michel Hovan

Day One: August 15, 2017

The meeting formally began at 9:20 a.m with Mr. Christopher Oswald thanking everyone for attending. The Subcommittee members, presenters, and attendees were introduced. Mr. Oswald explained the purpose of this meeting was to look forward and develop and guide for a strategic plan in the future. He stated there will be a discussion on the FAA 10-year plan, and suggestions were welcomed for research going into FY 2020. Mr. Oswald explained the need to see what was missing, and what can be incorporated into recommendations further down the road. He reiterated the primary focus of the Subcommittee was to provide oversight, and suggestions. Mr. Oswald advised Subcommittee members to ask questions on anything presented over the next two days, and bring forward any project ideas, or deep dive requests. Mr. Oswald informed Subcommittee members that Cyber Security was a big focus at the spring REDAC Meeting, and asked the Subcommittee to think about the possibility of looking into that on the Airports side. He stated there was also continued focus on Unmanned Aircraft System (UAS), cross-cutting research in regards to autonomous vehicles, commercial space, and environmental projects.

Dr. Eric Neiderman, *Aviation Research Division*, began by explaining that the meeting would follow the more traditional agenda than the spring meeting. He informed the Subcommittee the Aviation Research Division has hired new staff in the past three years, and that most hired have many years in industry experience. Dr. Neiderman explained the fellowship program in place with the Partnership to Enhance General Aviation Safety, Accessibility and Sustainability (PEGASAS) program, and commented that it has been extremely positive and produced outstanding results. He informed the Subcommittee the branch review was held two weeks ago, and stated that it was exciting to see where the field was going. Dr. Neiderman referenced the interest in Cyber Security, and questioned if it fitted into the R & D portfolio, adding that there were currently no requirements or specifications for Airports, and feedback was needed. He explained research has a pretty good idea of FY18, but needed input for FY19 and beyond.

Mr. Jaime Figueroa, *Deputy Director*, began by welcoming the subcommittee. He stated that research was looking to the subcommittee for input, specifically on the issue of Cyber Security. He asked the subcommittee to see if everything was there, and what was missed.

Dr. Michel Hovan, *ATR Update*, Dr. Hovan began by presenting an update on the budget, and explained the official numbers were in the budget narratives. He stated FY17 was current, and FY18 and FY19 numbers have been submitted. Dr. Hovan informed the subcommittee the Airport Technology Research (ATR) Branch asked for 31 million dollars in FY17, and was asking for 33 million dollars for FY18 and FY19. He explained the increase was due to an added Pavement Laboratory, and some other facility improvements, adding there was certainty with the FY18 and FY19 budgets. Dr. Hovan explained to the subcommittee the ATR Branch was given one year to obligate the funding, but may take more than one year to spend the funding. He explained ninety

percent of the funding went to contractors and universities. Ten percent of the budget went to new research requests.

Dr. Hovan continued by stating the amount of FAA full time employees might decrease over the next few years due to a reduction in authorized full time positions. He explained the FY17 budget is being used to cover the contractor's research work into the FY18 fiscal year without interruption. Dr. Hovan informed the Subcommittee the presentations scheduled will be at the Research Project Area (RPA) level. He added Mr. Paul Giesman will be giving the deep dive on the Aircraft Braking Friction project, and there will be a discussion on the 10-year plan.

Mr. John Dermody, H*eadquarters Update*, began by informing the subcommittee a lot of work is under way adding Dr. Hovan, Mr. Jeff Gagnon, and Mr. Jim Patterson do an excellent job managing the research programs. He explained the research program always has more needs, and he has been working with Dr. Hovan on prioritizing projects, explaining there will always be new requests for research that arise, citing new Engineered Material Arresting System (EMAS) materials, Light Emitting Diode (LED) Lighting Systems, and Takeoff and Landing Performance Assessment (TALPA). He explained the ATR research is a very adaptive program and it is set up to be able to reorganize research priorities if needed.

Subcommittee Discussion – Cyber Security

Mr. Dermody informed the subcommittee in late February 2017 that FAA Headquarters received a directive from Congress to come up with a Cyber Security Plan. Mr. Dermody stated the plan will be updated annually and should include a five-year profile. He explained there were not too many details regarding the regulatory needs, requirements, and infrastructure requirements. Mr. Oswald suggested doing a gap analysis on the airport infrastructure side and communicate capabilities. He also suggested looking into utilities, lighting, and expanding the airport role, and finding out the vulnerabilities, and how significant of a threat do they produce. Mr. Oswald suggested there may be a value in exploring how this fits in with TSA. The subcommittee discussed looking into the human factors portion and threat assessment. The subcommittee also suggested research to look into what the Department of Defense (DoD) is doing. Mr. Dermody explained the plan in place was a working document and that an advisory committee will be reviewing it next quarter. The subcommittee suggested looking into Wi-Fi interference and compromising of mission critical systems. Mr. Dermody stated this will continue to grow, and that time has come to look into vulnerabilities and perform a gap analysis. The subcommittee asked to get a copy of the plan.

Subcommittee and FAA Discussion – Review of Recommendations

Discussion on open and draft recommendations took place.

Mr. Jim Patterson, *Overview of Safety RPAs*, began the presentation with a review of the projects and plans. He informed the Subcommittee Safety research section was at full capacity with the new hires over the past year. Mr. Patterson presented the FY17 projects and the 19 new requests for research. Dr. Hovan added that ATR research was currently operating under a Continuing Resolution (CR), and it made it harder to prioritize due to getting the funding in increments. He explained that all funding allocations for FY17 had been made and that new research will have to be programmed for FY18. Mr. Patterson continued explaining the new projects on the forefront, including looking into drones to perform inspections on airports, the use of autonomous vehicles on the airfield, and the flashing vs steady lights project. Mr. Dermody added that while the FAA was looking into priorities for FY18, the UAS applications in airports came up, explaining the UAS Working Group polled airports and perimeter security was on the top of the priority list.

Mr. Mike DiPilato, *RPA S1 Airport Planning and Design, RPA S2 Airport Safety Data Mining*, began the presentation by giving a brief overview of the budget, and research request, citing the Runway Exit Design Mode (REDIM) program was built in the 1990's and has not been updated. He explained that this could be used by planners for new runway construction projects. Mr. DiPilato stated the project was in the second year working with Virginia Tech, and the validation work was being performed at Chicago O'Hare Airport, and should be wrapping up soon. Mr. DiPilato explained the new project Indoor Navigation (Wayfinding for BVI Passengers), is a focus on the terminal areas to help visually impaired passengers navigate the terminals unassisted. He informed the Subcommittee they were in a two year grant with the University of Minnesota, and stated a technical note has been published in December 2016, and ATR is working on performing field trials at multiple airports. Mr. DiPilato continued reviewing the Taxiway Centerline Deviation project by giving a brief overview of the work that has been done, and the next steps for research, adding the scheduled completion date is December 2017. Mr. DiPilato presented the Spaceport Gap Analysis explaining it was a two phase study currently wrapping up Phase One with scheduled completion for the end of FY17. He informed the subcommittee Phase Two was scheduled to begin in FY18 with a final report completed by the end of FY18. Mr. DiPilato continued with presenting Runway Incursion Mitigation (RIM) Data Collection and reviewed some highlights of the project to include sponsor access granted in 2016, and the hosting of two training webinars. He continued by presenting examples of the tracking tool and interactive dashboard. The subcommittee asked how current the data was, and where was the data coming from. Mr. DiPilato stated it was current up to 2015, and the data came from actual incursion reports. The subcommittee asked if this data was only available to United States airports. Mr. Dermody interjected stating yes for now, adding it has been briefed at International Civil Aviation Organization (ICAO) meetings, but no one has reached out. The subcommittee raised concerns about the consistency of the narratives, and the information getting out to the media. The subcommittee stated the process for obtaining and entering the information could be better. Mr. DiPilato began presenting the Data Mining project by giving a brief history of the project, the capabilities and products. He explained the information was for internal use only, and the annual analysis report will be completed in the near future. The subcommittee suggested a potential research project would be to come up with a risk calculation. Mr. DiPilato stated the next steps include making the database more visible.

Mr. Keith Bagot, *RPA S3 Airport Rescue and Fire Fighting (ARFF)*, began the presentation by giving an overview of the program, and new research requests. He gave a status update on the new Fire Test Building stating the design completion was one hundred percent completed in April 2017, and ATR is hoping to get the construction award in FY18. Mr. Bagot reviewed the current projects underway, and the new requests for research ARFF Crystallization and Vehicle Performance Testing Standards. Mr. Bagot concluded his presentation reviewing the Thermal Balance during Fire Extinguishment project. The Subcommittee asked when this will be incorporated into Part 139 of the FAA Code of Federal Regulations. Mr. Bagot stated ATR was still in the data collection phase, trying to see how it worked with both fire trucks, and that a technical shutdown at the Technical Center put them behind schedule. The Subcommittee asked when the research will be completed. Mr. Bagot stated he was hoping to have testing wrapped by the end of fall 2017.

Mr. Mike Talotta, *RPA S4 Wildlife Hazard Mitigation*, began the presentation with a review of the budget explaining it is a steady 1.5 million from FY17- FY19. He informed the subcommittee of the work performed by the University of Illinois, explaining that was still need validation. Dr. Hovan added there are no open research requests for this project, and he met with FAA HQ (AAS-

300) on July 26, 2017, and it was decided AAS-300 will generate requests that align with REDAC recommendations and project objectives. Mr. Talotta informed the subcommittee airframe manufacturers have contacted the research partners at the Smithsonian, and were interested in using the data collected from this project. Mr. Talotta explained the Wildlife Database was supposed to go live in August 2017, but had incurred some issues and was on hold. He proceeded with presenting the Wildlife Information Collision (WISC) Program explaining ATR was looking at how controllers would use this information and get it to pilots and operators. Mr. Talotta stated this system would be more accurate that what was currently being used. The subcommittee commented that there had been a lot of work with WISC, Human Factors, and Next Rad Technology, but agreed it still needed work. The subcommittee suggested a better approach to find a way to get birds away from the airport, or using this as an alerting tool versus using it as changing the course of aircraft. The subcommittee stated this has gained so much attention due to the content being media driven and there was a risk mitigation issue that should be looked into.

Mr. Don Gallagher, Ms. Holly Cyrus, *RPA S5 Visual Guidance (LED's, Markings)* Mr. Gallagher began the presentation by reviewing the budget, and the request for research. He explained ATR chose two companies to work with. Mr. Gallagher stated Company One designed a new light and sent two to ATR for testing, and Company Two sent six standard edge lights for testing. He reviewed the results of the testing explaining with the LED lights the test pilots communicated they lost sight of the lights upon approach. The subcommittees asked what traffic pattern were the pilots using. Mr. Gallagher explained the pilots were using a basic traffic pattern. Mr. Gallagher stated the consistency was that pilots were stating they needed lighting that falls outside of current specifications. He continued stating Phase one was currently in progress, and the plan was to inventory what was currently out there.

Ms. Holly Cyrus, *Paint Markings*, began the presentation with a brief overview of the project. She explained the projects at both Manchester and Hanscom Bedford, stating data was taken on color, coverage, retro reflectivity after one year and all were in acceptable limits. Ms. Cyrus presented the new study done at Newark and Atlantic City Airports in New Jersey explaining all bead and material types were used with the exception of epoxy, and rubber removal had to be completed twice in three months. The subcommittee asked if friction tests were performed. Ms. Cyrus stated friction tests were completed with the SAAB friction test vehicle at Atlantic City.

Mr. Joe Breen, *Trapezoidal Grooving Project Update*, began the presentation reviewing the research background. He informed the subcommittee the FAA was in the process of awarding the contract for construction of the test bed at Atlantic City. Mr. Breen explained this was a three Phase project with Phase One and Two being design and construction, and Phase Three being actual testing with a completion date scheduled for October 31, 2018. He reviewed the methodology of the testing for the subcommittee. The subcommittee asked if any testing will be done with the aircraft auto braking system. Mr. Breen stated the aircraft doesn't have an auto braking system, so they will perform the testing using maximum braking which will test the anti-skid limits as well. Mr. Breen explained the objective was to find out if Trapezoidal Grooves perform better than FAA Standard Grooves.

Mr. Paul Giesman, *Aircraft Braking Friction Working Group, Deep Dive*, Mr. Giesman introduced himself and gave an overview of the working group, the purpose, and participants. He informed the subcommittee the first meeting was held in February 2017, and the second meeting was held in June 2017. Mr. Giesman gave a history of when the issue of braking friction arose, explaining it was the National Transportation Safety Board (NTSB) stemming from the 2005 Midway accident. He stated safety recommendations were established and then closed until the

LaGuardia accident in 2015. Mr. Giesman informed the Subcommittee of the FAA standards on wetted pavement, and the new FAA research program schedule to begin in 2019. He explained the new program is not centered on the NTSB recommendations, but the NTSB comments in regards to TALPA CFR Part 25 AC from 2015. Mr. Giesman continued by briefing the Subcommittee on the Technical Center's objectives of work performed with the 727. He reviewed the working group's observations, and what they determined were the project's limitations. Mr. Giesman suggested this work can be used to look at ESDU model to predict snow covered runways wheel braking coefficient/friction. He reviewed the FAA's Operational Landing Research Project and conclusions from the research, adding that reports were still coming out. Mr. Giesman proceeded by informing the technical issues the working group agreed were related to the project, including the speed of the aircraft during testing was not adequate with research being done, and the test aircraft not being airworthy. He explained that manufacturers perform braking friction tests to test their anti-skid systems, but the issue was getting the manufacturers to share the data. Mr. Giesman presented the short term and long term feedback and suggestions from the working group. He stated short term they would like to see ATR gather all the information from known research on testing, wheel braking performance standards, research to establish uncertainty in the presently available methods to establish Rescue Coordination Center (RCC), and compile and evaluate drainage prediction methods as to facilitate identification of flooded runaway as opposed to wet runway. Mr. Giesman stated the long term feedback was strategic and tactical planning to accomplish what was determined to be the biggest friction issues in the industry based on knowledge of the current industry standard and expected developments. He reviewed some probable directions for strategic consideration as aircraft landing/braking performance on wet surfaces and classification and measurement of weather related contamination on runways. Mr. Giesman added that FAA needed to determine who the clientele was, bringing up questions such as; does the research only pertain to FAA airports, airports the United States flies into, or the United States manufacturers who operate everywhere? He added determining the clientele will give an idea as to what was needed to be done. The Subcommittee discussed and agreed that the research need was much broader, and suggested getting other agencies involved. Mr. John Dermody explained that this had been a group effort citing work with FAA Flight Standards and Office of Airports. The subcommittee asked if the working group was working towards generating a plan for this project. Dr. Hovan stated they have identified the issues, and added that the budget is a challenge. He explained he believed the outcome of the next (third) meeting will be a draft plan of where to go, a whitepaper with needs, and it will identify what has to be done. Dr. Hovan continued stating next winter data will be continued to be collected, and it will be used for the Trapezoidal Groove project.

The Subcommittee asked if the working group was trying to redirect the scope of work, explaining that the scope of work had seemed to change from the beginning of the project. Mr. Breen interjected stating ATR was focusing on measuring friction at the tire/pavement interface then taking data and relate it to aircraft parameters and determine what parameters generated by aircraft to be used for braking friction, adding that was why they have equipped the aircraft with strain gages. The Subcommittee agreed the strain gage measurements were a good start for measuring parameters, but stated the constraints of the testing still remain. The Subcommittee discussed the viability of the research, the research approach, and how it fitted into broader goals. The Subcommittee questioned if this was cross cutting research, and how to approach it at the full REDAC. The Subcommittee agreed this was valuable data being collected and didn't require more money. The Subcommittee asked how hard it would be to fit this into a plan, adding that a new plan needed to be developed with a defined objective. Mr. Oswald asked Dr. Hovan to have the working group inform the Subcommittee after they have come to a consensus of determining the objective. Dr. Hovan stated what he saw coming out of the group was a more concise plan, and

they will have something more solid by the next REDAC in March 2018. Mr. Giesman asked if ATR knew anything about the FAA braking program, and suggested ATR look into it. Mr. Oswald suggested the Subcommittee make a recommendation that the working group work with the Office of Airports, and Flight Standards to help redefine the research objective and develop a plan to help reach those objectives. The Subcommittee agreed after Mr. Giesman's presentation, this was a high priority project.

Day Two: August 16, 2017

Mr. Oswald welcomed everyone, and explained Day Two was primarily Pavements, but there had been a few schedule changes. He asked the Subcommittee to start thinking of key points to emphasize priorities, and new items to add for future research efforts. Mr. Dermody stated the Subcommittee will probably understand the priorities based on the Research Project Area (RPA) and new request set up, and informed the Subcommittee to ask any questions they have. Dr. Hovan stated the presentations chosen were based on research priorities, so the Subcommittee had a view of the work under way. He explained he felt the ATR budget was appropriate at this time. Dr. Hovan continued explaining that if budget reductions come into play happen, then ATR will have to readdress all the research program. Mr. Oswald interjected suggesting adding Unmanned Aircraft System (UAS) to the priority first along with Cybersecurity, stating there had already been an increased level of effort on this topic. He continued by stating Subcommittee would like to see a refocus with the Braking Friction project to include a broader research effort. The Subcommittee asked if ATR had thought about looking at rapid repair materials. Mr. Jeff Gagnon stated repair and maintenance are not Airport Improvement Program (AIP) funded so ATR would have to look closely on whether it was worth spending funding for that research.

Mr. Jim Patterson, *Noise Programs*, began the presentation by highlighting the new requests, and the coordination with other agencies. He stated ATR was very excited about the number of data points they have received. Mr. Patterson continued by giving an overview of next steps, including looking at mitigation, and what the noise level meant to the agency. Mr. Oswald commented this was being watched nervously close in regards to what it will be to the Agency and airports. He stated this was going to be huge politically as well. Mr. Patterson continued explaining the National Phone Analysis will begin in September 2017 using the same research team. Mr. Oswald interjected stating the follow up to this study had raised a lot of concerns with congress, other communities, and even on an international level. Mr. Patterson continued by presenting the Noise Dispersion with Equivalent Space Operations Performance Based Navigation (PBN) Procedures, explaining it was in progress, purchase requisitions (PR's) are in place, and just waiting on funding.

Mr. Kent Duffy, *Airport Planning Research 10-Year Plan*, began the presentation explaining the plan and the objectives, stating the FAA had to be flexible and also had to make sure the framework fitted into priorities. He explained the work that needed to be done had to align with the Office of Airports, and had to include topics that can be used. Mr. Duffy stated in regards to environmental research, a lot of money had been spent on noise, sustainability, and land use. He continued presenting Planning Research explaining they were looking at data synthesis, new technologies, and comprehensive planning. Mr. Duffy informed the Subcommittee planning and environmental were linked, and the 10-year work began last fall. He explained a series of webinars were held to brief out goals and objectives and to gain input from communities. Mr. Duffy added the FAA partnered with TRB and used research services to take ideas. Mr. Oswald commented that the goals and objectives aren't always in line with REDAC, but serve a purpose for future ground work. He commended Mr. Duffy for reaching out to industry for input, and expressed interest on having Mr. Duffy speak on the final plan at the spring meeting. Mr. Duffy stated the industry calls were worthwhile, but what was most challenging with building the plan was determining what the non-research components of the plan.

Mr. Jeff Gagnon, *Overview of Pavement RPAs*, began the presentation by giving an overview of projects, plans, and REDAC recommendations. He reviewed the recommendations beginning

with the fly ash substitute stating that there needed to be more discussion on this topic. Mr. Gagnon explained ATR is working with UC- Davis on full depth reclamation, and drainable bases were included in (test cycle) CC7 testing, and once it was complete they will look at the data. Mr. Gagnon continued informing the Subcommittee of the report publications published, and what was in the draft phase. He stated ATR was working on the 10-Year Research Plan, and it had a tentative completion date for the end of 2017. Mr. Gagnon informed the Subcommittee of the Technical Advisory Group and its members, as well as informing the Subcommittee of the ASCE Conference being held in Philadelphia, PA in August 2017.

Mr. Ryan Rutter, *RPA P1, NAPTF*, began the presentation by giving an overview of the National Airport Pavement Test Facility (NAPTF) funding, research goals, and projects. He informed the Subcommittee (test cycle) CC8 reconstruction should completed by the end of 2017, along with the Reflective Cracking Website. Mr. Rutter added the reconstruction of the Reflective Cracking Phase 6 reconstruction could possibly begin in late 2017 as well. Mr. Rutter gave the breakdown of NAPTF Construction projects, adding the CC9 planning is underway and demolition/reconstruction is anticipated to begin by late 2017. Mr. Rutter informed the Subcommittee the facility operations and all Delivery Order Five is supported by subcontractor, CSRA.

Dr. Navneet Garg, *National Airport Pavement and Materials Research Center* (*NAPMRC), RPA P2*, began his presentation giving an overview of the budget, and project objectives. Dr. Garg informed the Subcommittee Test Cycle One was complete, and the Post Traffic Report was in progress. He stated the construction of Test Cycle Two was in progress and will take place in the fall of 2017. Dr. Garg explained sensor installation will begin as well, adding that post traffic data analysis was ongoing. Dr. Garg reviewed the methodology of testing and summary of results, and highlighted the grant work performed with Texas A & M University. Dr. Garg continued by presenting Field Instrumentation RPA P3 by giving an overview of research objectives and project budget. He informed the Subcommittee of the locations where testing is completed and of future installation locations, as well as locations still in the discussion phase. Dr. Garg presented preliminary data collected from Boston (completed location), and explained the installation layout in Philadelphia (future location).

Mr. Ben Mahaffey, *Advanced Materials, RPA P4*, began the presentation by reviewing the budget, needs for research, and research goals. He informed the Subcommittee of five new reports on Heated Pavements that were being edited and one that has been published. Mr. Mahaffey explained the work done with Heated Pavements was completely done through grant work and the end result was to update the Advisory Circular, to provide options, and hoping AIP funds cover a full scale install. Mr. Mahaffey provided a review of the Binghamton, New York and Des Moines, Iowa projects, explaining data was still being received from those locations. He explained the heated pavement cost analysis came out to 1.5 cents per square foot, per hour. The Subcommittee asked how that compared to the Geothermal systems. Mr. Mahaffey stated it cannot be compared because the Geothermal numbers were included in the total operating costs. He continued informing the Subcommittee that testing was currently being done on a small scale, and will be investigating the possible interference with aircraft. Mr. Mahaffey highlighted the partnerships with University of Nebraska, NY-NJ Port Authority and the US Army Corps of Engineers. Mr. Mahaffey concluded his presentation reviewing Phase Two, and stating it encompassed looking at the benefits, and finding optimal locations. Mr. Mahaffey concluded the presentation by giving an overview of the work that still needed to be done. Mr. Mahaffey gave an overview of the Pavement Laboratory Operation, including informing the Subcommittee of new equipment that will be used for CC7 Post Traffic Results.

Dr. David Brill, *Pavement Design and Evaluation, RPA P5*, began the presentation by giving a review of FAARFIELD (airport design software) Aircraft Classification Number (ACN)-Pavement Classification Number (PCN) and an overview of what was new, including technical reports that have been published. Dr. Brill explained International Civil Aviation Organization (ICAO) ACN/PCN were still in use and the end goal of FAARFIELD would be an eventual replacement. He highlighted the accomplishments noting the project was on track for replacement for ACN-PCN system with ICAO for 2022. Dr. Brill explained Legacy Fortran Libraries were still in place, and the challenge was not many young programmers know Fortran. He concluded the presentation by explaining GUI Modernization is in progress, stating the prototype was demonstrated July 2017, and the target completion date in July 2018.

Dr. Michel Hovan, *Facilities -Fire Safety Testing Facility RPA, Pavement Laboratory Addition*, Dr. Hovan began by explaining that as he presented on Day One, the Pavement Lab Addition included the two-million dollars for the lab, and FY18 will be programmed for the Fire Test Facility. He reiterated the Fire Test Facility's design plan was completed, and the new buildings have been approved, adding as far as he knew he was proceeding as usual. The Subcommittee asked about the possibility of getting the EPA involved to assist with funding of the Fire Test Facility. Mr. Keith Bagot explained the EPA has moved on, and it was doubtful that they would jump on board. He stated the short term issue was PFC, but there were a lots of long term possibilities for this facility, adding that it was the only one like it in the world. The Subcommittee asked if there was ever an outside source that would come in to pay for testing services.
Mr. Bagot stated ARFF Program has a long term agency agreement with Tyndall Air Force Base, and that may become a two-way revenue stream in the future.

Mr. Albert Larkin, NDT Technologies, RPA P6, began the presentation by giving an overview of the projects and budget. He highlighted the Cape May Pavement Roughness Project on Taxiway Charlie. Mr. Larkin presented pictures of the testing equipment used including the NDT Van, profiler, and straight edge. He explained the methodology used, and reviewed the results of the data collected, and the plan to perform another site visit to collect more data.

Mr. Qingge Jia, *Software Program Development and Support, RPA P7*, began the presentation by giving an overview of funding, research goals and the need for research. He explained there was a need upgrade in order to keep up with technology, adding that cyber security was continuous. Mr. Jia gave an update on FAA PAVEAIR status explaining the number of databases, registered users, workshops, and foreign requests. He reviewed the current and future projects, and explained the baseline requirements for software integrations. Mr. Jia concluded the presentation by giving an overview of the ANG-260 Website, explaining it was a repository for all data collected, and presented the amount of visits to date in 2017.

Dr. David Brill, *Extended Pavement Life, RPA P8*, began the presentation by giving a review of the need for research, and goals. He presented an overview of the runway data collection, explaining testing was performed on 28 runways, at 22 airports with the last collection in February, and explained this data will be integrated into the FAA PAVEAIR40 (PA40) database. Dr. Brill presented the PA40 status as of August 2017, and the PA40 Traffic Link status. Dr. Brill provided the preliminary data from testing at BWI and explained the results showed there was some structural distress on the runway. He concluded the presentation with FY17 R & D efforts to include completing the population of PA40, and to perform field data collection at one additional runway selected from one currently in the PA40 database.

Mr. Jim Patterson informed the Subcommittee that Mr. Don Gallagher revised his presentation and was uploaded to the REDAC database if there were any questions.

Subcommittee Discussions, New Findings and Recommendations
Discussion on new recommendations, actions, general observations took place. List is in Addendum 1.

Next Meeting: The Subcommittee agreed the spring meeting will be on Tuesday, March 20, 2018 and Wednesday, March 21, 2018 at the William J. Hughes Technical Center, in the conference room of Building 296. The Subcommittee agreed the summer/fall meeting will be on Tuesday, August 21, 2018 and Wednesday, August 22, 2018 at the William J. Hughes Technical Center, in the conference room of Building 296.

Meeting adjourned 2:40p.m.

ADDENDUM 1
FINDINGS, RECOMMENDATIONS AND ACTIONS

Review of Open and Draft Recommendations

Recommendation from Fall 2016
The one open recommendation was from the Fall 2016 Meeting
The Subcommittee agreed to close this recommendation.

General Observations

- FAARFIELD – suggesting expanding testing.

- Value of research needs to be added in the Pavement Presentations.
- The quad chart in presentations is helpful.
- Provide end date for projects in the presentations

Actions

- RIM Database – speak to program office about process of reporting incursion information. Explore ways to expand pool of users and manage hot spot identification.

- Safety Database – normalization of data, and develop methods to account for level of risks. The Subcommittee made a suggestion for a demo and deep dive for the next meeting.

- Cyber Security – vulnerability for infrastructure. Review initial Cyber Security Report and provide suggestions for inclusion of possible airport issues. Mr. Oswald will distribute initial report to Subcommittee members and schedule a conference call to discuss.

- UAS – find potential uses for autonomous vehicles in airport environment.

- Wildlife Hazard Mitigation – Avian Radar – The Subcommittee is requesting a deep dive to include the background/history of the program for the next meeting.

ADDENDUM 2

REDAC Attendance List

August 15, 2017

Name	Organization
Jaime Figueroa	Federal Aviation Administration
Al Larkin	Federal Aviation Administration
Al Pollard	Maryland Aviation Administration
Angela Campbell	Federal Aviation Administration
Benjamin Mahaffay	Federal Aviation Administration
Chinita Roundtree-Coleman	Federal Aviation Administration
Chris Bartone	Ohio University
Chris Oswald	Airports Council International - North America
Chris Seher	Applied Research Associates, Inc.
David R. Brill	Federal Aviation Administration
Donald Gallagher	Federal Aviation Administration
Eric Neiderman	Federal Aviation Administration
Eric Plyler	CSRA
Erin Debarth	CSRA
Evanicio Costa	Boeing
Frank Fee	Asphalt Institute
Gary L. Mitchell	American Concrete Pavement Association
Grant Bishop	Moy Bishop & Associates
Holly Cyrus	Federal Aviation Administration
Hossein Eghbali	Federal Aviation Administration
James Patterson	Federal Aviation Administration
Jim White	Applied Research Associates, Inc.
John Lapointe	Federal Aviation Administration
John R. Dermody	Federal Aviation Administration
Jonathan Torres	Federal Aviation Administration
Joseph Breen	Federal Aviation Administration
Justin Towles	American Association of Airport Executives
Keith Bagot	Federal Aviation Administration

Name	Organization
Mark Crystal	Air Line Pilots Association
Matt Griffin	Airport Consultants Council
Maureen Molz	Federal Aviation Administration
Michael D. Collins	CSRA
Michel Hovan	Federal Aviation Administration
Mike Dipilato	Federal Aviation Administration
Mike Maas	Air Line Pilots Association
Mike Talotta	Federal Aviation Administration
Murphy Flynn	Federal Aviation Administration
Navneet Garg	Federal Aviation Administration
Pam Phillips	Applied Research Associates, Inc.
Paul Giesman	Federal Aviation Administration
Peter Sparacino	PLS Consulting
Qingge Jia	Federal Aviation Administration
Rich Speir	Applied Research Associates, Inc.
Richard Ji	Federal Aviation Administration
Richard Mendell	Federal Aviation Administration
Ryan King	Federal Aviation Administration
Sarah Hubbard	Purdue University
Scott Marsh	Port Authority of NY & NJ
Shailesh Gongal	Massachusetts Port Authority
Somil Shah	Federal Aviation Administration

August 16, 2017

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Al Larkin	Federal Aviation Administration
Al Pollard	Maryland Aviation Administration
Benjamin Mahaffay	Federal Aviation Administration
CA Roundtree-Coleman	Federal Aviation Administration
Chris Oswald	Airports Council International - North America
David R. Brill	Federal Aviation Administration
Erin Debarth	CSRA
Evanicio Costa	Boeing
Frank Fee	Asphalt Institute
Gary L. Mitchell	American Concrete Pavement Association
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James Patterson	Federal Aviation Administration
Jeff Gagnon	Federal Aviation Administration
John R. Dermody	Federal Aviation Administration
Mark Crystal	Air Line Pilots Association
Matt Griffin	Airport Consultants Council
Maureen Molz	Federal Aviation Administration
Michael D. Collins	CSRA
Michel Hovan	Federal Aviation Administration
Mike Maas	Air Line Pilots Association
Navneet Garg	Federal Aviation Administration
Pam Phillips	Applied Research Associates, Inc.
Qingge Jia	Federal Aviation Administration
Rich Speir	Applied Research Associates, Inc.
Richard Ji	Federal Aviation Administration
Ryan King	Federal Aviation Administration
Ryan Rutter	Federal Aviation Administration
Sarah Hubbard	Purdue University
Scott Marsh	Port Authority of NY & NJ
Shailesh Gongal	Massachusetts Port Authority

Research, Engineering and Development Advisory Committee
PPT Briefing to Sub-committee on Airports: August 15 -16 - 2017
Technical Center Director's Conference Room

DAY 1 – August 15, 2017

9:00 am	Christopher Oswald *ACI-NA, Subcommittee Chairperson*	Introduction
9:15 am	Eric Neiderman *Manager, Aviation Research Division*	Aviation Research Division/Welcome
9:20 am	Michel Hovan *Manager, Airports Technology Research Branch*	ATR Update
9:30 am	John Dermody *Director* *FAA Office of Airports Safety and Standards*	HQ Update
9:45 am	All	CyberSecurity Discussion/Tasking
10:00 am	Subcommittee Members and FAA	Review of REDAC Recommendations
10:30 am	Jim Patterson *Airport Safety R&D Section Manager*	Overview of Safety RPA's
10:45 am	Break	
11:00 am	Lauren Collins	RPA S1- Airport Planning and Design RPA S2 – Airport Safety Data Mining High level overview 10 year planning plan (Kent Duffy)
11:30 am	Keith Bagot	RPA S3 - Airport Rescue and Fire Fighting
12:00 am	**Lunch (Cafeteria)**	
12:30 pm	Michael Talotta	RPA S4 - Wildlife Hazard Mitigation
1:00 pm	Don Gallagher/Holly Cyrus	RPA S5 - Visual Guidance (LED's, Markings)
1:30 pm	Paul Giesman	**Aircraft Braking Friction Working Group (Deep Dive)**
2:30 pm	Joe Breen	Trapezoidal Groove Project Update
2:45 pm	Mike Dipilato	RPA S9 - Airport Research Taxiway – NVG and LED's
3:00 pm	Break	
3:15 pm	Lauren Collins	RPA N1-5 - Noise Programs RPA E1 - Airport Environmental Research
3:45 pm	All	Visit to ATR's Test Aircraft, ACY Ramp

4:45 pm	All	Overall Review – Day 1
5:00 pm	**Adjourn**	

DAY 2 –August 16, 2017

9:00 am	Jeffrey Gagnon	Overview of Pavement RPA's *Pavement Research – Future needs and Direction*
9:30 am	Ryan Rutter	RPA P1 - NAPTF
9:45 am	Navneet Garg	RPA P2 - NAPMRC
10:15 am	Navneet Garg	RPA P3 - Field Instrumentation and Testing
10:30 am	Break	
10:45 am	Murphy Flynn	RPA P4 - Advanced Materials
11:00 am	David Brill	RPA P5 - Pavement Design and Evaluation
11:30 am	Lunch	
1:00 pm	Michel/Jeff	RPA – FACILITIES *Fire Safety Testing Facility* *Pavement Laboratory Addition*
1:30 pm	Albert Larkin	RPA P6 - NDT Technologies
1:45 pm	Qingge Jia	RPA P7 - Software Program Development and Support
2:00 pm	Dave Brill	RPA P8 - Extended Pavement Life
2:30 pm	Sub-Committee members	REDAC Recommendation(s)
3:00 pm	**Adjourn**	