

REDAC Subcommittee on Airports
Summer Meeting 2018
August 20

FAA - William J. Hughes Technical Center
Building 300 – Technical Director’s Conference Room

Meeting Minutes – Erin DeBarth

The meeting began at 9:05 a.m. Mr. Christopher Oswald thanked attendees for participating. He explained the subcommittee will be discussing the research outlook for FY19 and beyond. Mr. Oswald stated this meeting will be abbreviated. He informed the Subcommittee members if there was a project that a member would like to review, to let him know and he will get the information. He explained the presentations will be high level and concentrating on Cyber Security, UAS, and Commercial Space. Mr. Oswald asked if anyone had to leave the meeting to rejoin around 3:00p.m. to be present for the recommendations portion of the meeting.

Ms. Shelley Yak, Director of FAA Technical Center, informed the Subcommittee she distributed the UAS Research Update Plan and would like the Subcommittee to review the plan and provide feedback by October 2018. Introductions were made by attendees.

Ms. Shelley Yak, “DOT Research Alignment and Direction”, began her presentation by presenting the Research Outlook. Ms. Yak stated she created landscapes as a way to build the story of the research being performed at the Technical Center. She informed the Subcommittee she has been briefing a lot over the last few months from department level meetings to Sr. Executives. Ms. Yak stated she recently briefed the Aircraft Safety Subcommittee Meeting, and Dr. John Hansman was in attendance. She stated she received his feedback and it became an Action Plan. Ms. Yak explained the FAA is required by Legislation to perform research by codes 42 and 49, Transportation and Public Health/Welfare. She explained the FAA partnership philosophy and collaboration/cooperation research by citing the Centers of Excellence (COE) partnerships, Grants, and working closely with NASA and NOAA. Ms. Yak explained the demands for research come from the public or the aviation industry, and explained legislation demands mission support research. She stated the FAA needs to be sure there is no duplication of research and the outcome of the research needs to be evaluated. Ms. Yak presented the DOT Strategy Plan, explaining the four components are Safety, Infrastructure, Accountability, and Innovation. She presented the FAA National Aviation Research Plan and Goals, and stated that she had asked for suggestions from the Subcommittee. Ms. Yak informed the Subcommittee that there needs to be discussion about FY19 and long term research. She stated in 2019 the first annual review of the NARP will take place, and stated the focus needs to be on the outcome and the value of the work. Ms. Yak explained she would like to see how the FAA can use the REDAC Subcommittee Meetings to help develop the landscapes. She stated she believes the FAA should initiate a landscape and submit to the Subcommittee for review to see what is missing, and have the Subcommittee assist to get access to other views, and to see what other work is going on in the industry. Mr. Oswald asked Ms. Yak if she sees this as something being tasked by Mr. John Dermody, FAA Office of Airports Safety and Standards, and if this something for the full REDAC. Ms. Yak explained she would like to have the conversation now. She stated after the conversation she would like to present the

full version at the full REDAC. Ms. Yak stated after there is agreement on what the role of the Subcommittee would be it would be time to proceed to planning. The Subcommittee stated researchers need to indicate what the goal of the research would be, and then recognize what can be done with the results. Dr. Michel Hovan, Manager Airports Technology Research Branch and Airports DFO (Designated Federal Official), asked what the landscapes should look like. Ms. Yak stated she is just starting to identify them, explaining possibly using RPA's. She stated this will require focus and the need to identify the capability, and what the FAA is doing and why. Mr. Eric Neiderman, FAA SAS (Aircraft Safety) DFO, stated the FAA needed a consist format with a broader industry perspective. Mr. Oswald stated he envisioned this as bringing the multiple Ten Year Plans together, adding metrics, and industry perspective. Dr. Neiderman agreed. Mr. Dermody, Airports DFO, stated the goal is looking for applicable research, and make sure the FAA isn't duplicating efforts. He explained there are a lot of steps involved and the FAA needs to evaluate where the research is on all project areas. Mr. Oswald stated he sees the common threads between ACRP and R&D citing UAS and New Airport Technologies. He explained the FAA needed to find a way to circulate what is being done, and involve key TRB Committees, especially on the pavement side. Ms. Oswald suggested 070 and 060 System Planning Group. He explained the subcommittee could collect input, and get a broader perspective, but he needed to figure out the timeframe. Ms. Yak stated she would like something presented at the spring/summer meeting to be able to have the Subcommittee start to digest it, get more substantial feedback in the fall meeting, and discuss it at length at that point.

Mr. John Dermody, "HQ Update", Mr. Dermody explained the two areas of R&D are the Safety Area and Pavement Area. He informed the Subcommittee R&D is strategically focused on UAS Phase One Research. Mr. Dermody explained the research is finding how they are being used on airports and which airports are using UAS. He stated the Commercial Space Project was currently reviewing regulations and identifying gaps. Mr. Dermody explained with Commercial Space they are looking to what is known at this point and R&D is concentrating on the horizontal launch vehicles only. He stated they R & D is working on a survey process to get information on space vehicles. Mr. Dermody informed the Subcommittee that Headquarters received Congressional Requests within the AFFF Project and Pavement Area. He explained the request for the AFFF project is finding environmental friendly products. Mr. Dermody commented that he wanted R&D to move forward with this at a quick pace, explaining no one in the United States has found acceptable alternatives. He stated the other request was for Specifications for Pavements. Mr. Dermody explained this research will be starting soon, and it is to see if state specifications for highways can be used on runways instead of FAA specifications. He explained the questions raised were the durability and longevity of the pavement, and stated there is a lot of testing that goes into that. Mr. Dermody stated the research would be on lower weight aircraft between 30,000LBS- 60,000LBS. He explained the state specifications may be appropriate with a 30,000LB aircraft due to the weight being similar to semi- trucks, but 60,000LBS may be a concern. Mr. Dermody informed the Subcommittee that the other research requests to start late 2018 are Stabilized Bases – to take a good look at the specifications and In Place Density-looking at a possible alternative to the Nuclear Gage. Mr. Dermody continued stating the Environmental requests for the Safety Area are emissions, air quality analysis, Runway Length Analysis, and Airport Capacity Model. Mr. Oswald commented that the Runway Length AC needs to be updated. Mr. Dermody stated R & D is looking at that now, and it is progressing. Mr. Oswald asked if the FAA was discontinuing the model maintenance. Ms. Lauren Collins, FAA Airports R&D,

explained Mr. Kent Duffy had conversations with headquarters trying to determine if there was value in continuing maintenance. She informed Mr. Oswald she will speak to Mr. Duffy and get back to him. Mr. Dermody continued stating another research request was for Tree Growth Analysis – dealing mainly with obstructions and providing guidance on when to remove. He explained this research will be more practical guidance and not an analytical approach. Mr. Oswald interjected stating in regards to AFFF, ACI has jumped in. He stating this issue has come back strongly over the last five to six months due to the media scrutiny and he's glad to hear it is on the list. The Subcommittee asked if the UAS research has thought of coordinating with air traffic when using drones for inspections. Mr. James Patterson, Airport Safety R&D Manager, stated yes. He explained right now R&D is in Phase One and they know Atlanta Airport is using them. Mr. Patterson stated R&D is looking at the process, hopefully streamline it, and then figure out how to integrate into the NAS. The Subcommittee asked if drone pilots have to be licensed. Mr. Patterson stated each airport has its own process, and there needed to be one consistent approach. The Subcommittee commented it understood the FAA has three classifications for drones and there is a need for clarification on this issue.

Dr. Michel Hovan, "ATR Update, Research Outlook for FY19-21", Dr. Hovan informed attendees Mr. Neiderman was going to speak. Mr. Neiderman began by introducing himself and welcoming attendees. He stated he went to a meeting on secure competing. Mr. Neiderman stated cybersecurity is cutting edge and Isidore Venetos will be in attendance to give a presentation. Mr. Neiderman asked the Subcommittee if they can identify where Cybersecurity fits in. He explained at the last Subcommittee meeting there was a huge discussion to keep moving forward on this topic. Mr. Neiderman informed the Subcommittee another research possibility is Smart Airports and the approach would be on small companies and economic analysis. Mr. Oswald stated there has been a lot of interest on the terminal side and the ground transportation side in sensing technology for automation. Mr. Oswald stated ACINA sees this as more airport driven rather than FAA. Mr. Neiderman stated the basic idea is to make the passenger experience enjoyable and more efficient. He explained the FAA has been doing work on this from a customer service perspective. Dr. Hovan continued by stating the research landscape is good and he will start working on it. He presented and reviewed the research outlook, budget, staff, and facilities. Dr. Hovan reviewed the budget stating the budget remained stable, adding FY21 and FY22 haven't been addressed. He explained in looking at the thirty-three million only ten percent is overhead, explaining ninety percent goes to the support contractor. Dr. Hovan stated R & D has one support contractor and the contract is ending in two years. He informed the Subcommittee R&D just completed a business plan for Office of Airports Operations and the drivers are UAS and Commercial Space. Dr. Hovan stated R&D is trying to figure out how to integrate the new drivers into the program budget. He stated the he would like feedback from the Subcommittee on the Smart Airports and whether or not that should be included in the R&D portfolio. Dr. Hovan informed the Subcommittee the new safety building was approved three weeks ago, and should be receiving the NTP for construction soon with completion by summer 2019. He explained the budget was a challenge because R&D was operating on three CRs and the challenge was how to obligate for the upcoming year. Mr. Oswald asked Ms. Yak how things look with other research programs. Ms. Yak stated there was uncertainty. She explained the FY18 funding was generous and the FAA was looking at FY19 the same way, but FY20 was unknown. Ms. Yak stated that is why she felt landscaping was a good strategy.

A.M Break - 10:45 a.m. – 11:00 a.m.

Mr. Jim Patterson, “Overview of Safety RPA’s, Research Outlook for FY 19 – 21”, Mr. Patterson began his presentation by informing the Subcommittee Safety R&D has 10 employees, and welcomed back Mr. Ryan King. He stated the research portfolio is diverse and Airport Environment, Noise, and UAS have been added. Mr. Patterson stated there were eight new project requests. He informed the Subcommittee a report letter on Tarmac Vehicle Safety was submitted to ARP. Mr. Patterson explained the research was based on the marking and lighting of ramp vehicles. He explained the R&D team visited different airports, took inventory on their vehicles and created the report. Mr. Patterson reviewed the RPA Updates stating EIRT will be completed by the end of the year, Lightning Counterpoise is in process, Paint Marking is going on in Arizona, adding that Philadelphia and Atlantic City have wrapped up, and the Electroluminescent Report is in the editing process. He continued stating NAS Visual Aids was looking how to baffle LED Lights. Mr. Patterson informed the Subcommittee there is an Interagency Agreement with VOLPE for HIGH Intensity RIM Lights and will be working on that at Joint Base at Cape Cod in FY19. He continued with updates stating Wrong Surface Landing – using airport safety database work with Human Factors in FY19. Mr. Patterson stated there was research with the Taxiway at Cape May to include IR Construction Lighting, Electrical Infrastructure, Solar, and UAS Applications, along with two pavement projects include Non-Destructive Testing and Longevity. Mr. Patterson informed the Subcommittee the Wildlife Report has 200,000 hits, and R&D was all caught up with data entry with USDA, and WISC will be in an operating environment. He continued his presentation with an update on Runway Surface Safety Technology stating TALPA was ongoing, EMAS - no news to report, adding there is a new CRADA with ATECH for EMAS Design, FOD-Still working with Seattle to get MOA in place. Mr. Patterson concluded his presentation by informing the Subcommittee the safety has had eight publications, and pavements has five, with seven new publications since last REDAC meeting, and nine new in editing. He informed the Subcommittee all reports were available on the website and also included in the electronic file. Mr. Oswald asked if the vendor evaluating for the EMAS Zodiac issues would be available near term. Mr. Nick Subbotin informed the Subcommittee Zodiac provided R&D a report, R&D submitted comments and they should be resubmitting by December 2018 or January 2019. The Subcommittee asked if ATECH aligned with Zodiac or would a new system have to be purchased if it was damaged. Mr. Subbotin stated the ATECH system cannot be used with the Zodiac system. The Subcommittee commented that something needed to replace Zodiac. Mr. Dermody stated this will be looked at the way the FAA always has, and it would be on a case by case basis. Mr. Oswald stated any quick response to research to facilitate risk assessment would be good. Mr. Dermody stated the FAA was taking the standards approach and will look at this and decide. The Subcommittee asked if Zodiac will continue to provide support. Mr. Subbotin stated he hasn’t received a clear response.

Mr. Jonathan Torres, “Commercial Space Research Update”, Mr. Torres began his presentation by giving a brief history of the project. He explained R&D was starting to look at regulations and vehicle designs of spacecraft and how to integrate into airport space. Mr. Torres stated there were three phases to this project and the first phase was in progress, which was gap analysis. He explained at the beginning of the project R&D was concentrating on CPR 415, and it has expanded to 417,420,431,433, 439, and 437. Mr. Torres stated R&D was looking into how these vehicles

fit into the Planning design standard, explosive safety, emergency planning and response, and public access control. He stated an interim report has been developed and submitted to ARP, and was going through the second round of reviews. Mr. Torres stated it will be submitted to AST after ARP has approved. Mr. Torres stated Phase Two is Vehicle Profiles, and informed the Subcommittee ARP has identified seven vehicles, and only vehicles that take off and land horizontally. He stated R&D has researched public information and working with AST to gain information. Mr. Torres stated the subcontractor gave feedback on the documentation and a questionnaire was developed. He explained R&D is working with AST on distribution. The Subcommittee asked if PAR 91 – Speed Requirement is being looked at. The Subcommittee stated there are so many moving parts to this project and it is important to keep AST informed. The Subcommittee asked if Mr. Torres has looked into the Aircraft Rescue Fire Fighting component. Mr. Torres stated R&D is looking into procedures and the different risk factors. Mr. Oswald stated the ARFF side hasn't been fully addressed, and explained the challenge is propriety information.

Isidore Venetos, “Cyber Security R & D Plan Methodology and Airports”, Mr. Venetos began his presentation by stating the expectation of this project is to raise awareness of cyber security and how it fits into R&D and airports. He stated the FAA Reauthorization Act 2018 states that the FAA is required to develop a program. Mr. Venetos informed the Subcommittee there have been discussions with Boeing working with the FAA. He explained the critical component is industry query as well as the Aviation Cyber Initiative, looking at DHS, DOD, DOT, and FAA commonalities and how to work together. Mr. Venetos stated that Cybersecurity is a priority and informed the Subcommittee of the partnerships of the R&D program and MIT, Johns Hopkins, and Astronautics. He explained that the research is being applied to include aircraft systems as well as the mitigation options. Mr. Oswald stated that the Airport Associations would be interested in this, but it would be best to engage people who work with the airport IT systems. He also stated he thought this would be more of a DHS issue than an FAA issue. Mr. Venetos explained the difference with DHS and this program was the methodology. He stated DHS was only looking at one piece, where this process was much more analytical. Mr. Venetos stated currently airports were practicing more of a compliance approach. Mr. Oswald informed Mr. Venetos of an ACI Conference on September 30th in Nashville and thought this would be a good presentation and would reach a broader airport audience.

Lunch Break- 12:00 p.m. – 12:30 p.m.

Mike DiPilato, “UAS Research Update”, Mr. DiPilato began his presentation by giving a brief history of the project and cited Mr. Jim Patterson, Mr. Eric Neiderman, and Ms. Shelley Yak for creating the plan. He explained the project was looking at UAS in airport environments and stated R&D has contacted airports, attended demonstrations, and provided guidance material. Mr. DiPilato stated currently R&D is working on the framework for CONOPS, and has contacted AAEE and active airport operators. He informed the Subcommittee a final report was being generated and will be completed by the end of FY18. Mr. DiPilato gave an overview of the airports that were working with R&D and what each airport was using UAS for. He stated DFW was using UAS for Emergency Response, Atlanta- Hartsfield/Jackson was using UAS for Pavement Inspections, and South Carolina Aeronautics was using UAS for Obstruction Analysis. Mr. DiPilato stated R&D has attended three demonstrations this fiscal year and R&D identified shortfalls within those demonstrations. He gave an overview of the UAS Wildlife Program and

the partnership with USDA and informed the Subcommittee that all UAS work will be carried through 2019. Mr. DiPilato stated the R&D was drafting material to provide to operators and airports about notification and authorizations processes, in order to assist airports in implementing best practices. Mr. DiPlato reviewed the 2019 Research Plans and asked Mr. Oswald he would be appreciative if Mr. Oswald could assist in getting airports involved. The Subcommittee asked if R&D has given any regards to air traffic and if all airports need a COA. Mr. Patterson explained in regards to the COA, it depends who is operating the drone. He stated there is a need for standard language that would include a consistent approach depending on the type of use. Mr. Patterson distributed a page from the UAS Plan for the Subcommittee to review.

Dr. Navneet Garg, “Pavement Research Key Updates and Research Outlook for FY 19-21”, Dr. Garg began his presentation by reviewing the research requirements from AAS-100, and report/publication status. Dr. Garg highlighted the research requests from AAS-100 for the National Pavement Test Facility as Performance Test Asphalt Pavements, Alternative Method of Acceptance of Unbound Materials, Stabilized Bases, and Pavement Roughness. Dr. Garg informed the Subcommittee the Research Plan has been submitted and was waiting for comments. He highlighted the Construction Cycle 8 (CC8) stating the purposed of this cycle was to test Concrete Overlay and Comparative Joint Performance, and the data collected will be used in FAARFIELD. Dr. Garg stated the testing for CC8 was a four phase testing plan with Phases One and Two completed, and Phases Three and Four in progress. He gave an overview of the Construction Cycle 9 (CC9) – Flexible Pavement Study. Dr. Garg stated the objective of this research was to collect performance data to be incorporated into FAARFIELD, see the effect of P209 on pavement life, the effect of Geogrids in pavement performance, test cement treated drainable base, and strain criteria for allowable overload. Dr. Garg presented the Construction Cycle layout and the Longitudinal Cross Section for both North and South sides, adding construction should start late fall of 2018 depending on funding. Dr. Garg continued by giving updates on the National Pavement Materials Center (NAPMRC) by giving an update on Test Cycle 2 (TC2). He presented the test strip layout for both indoor and outdoor test areas, and explained the indoor test strips will be P401 with RAP, and the outdoor test trips will be P401. Dr. Garg stated there will be two indoor lanes with the first land being nine inches thick with nine inches of Warm Mix Asphalt and twenty percent RAP. He stated the second indoor lane will have the top layer of three inches of Warm Mix Asphalt and six inches of Warm Mix Asphalt with RAP. Dr. Garg stated R&D will be testing high temperature rutting and fatigue.

PM Break -2:15p.m. -2:20p.m.

Lauren Collins, “Planning and Environmental Research Key Updates”, Ms. Collins began her presentation by informing the Subcommittee of the seven new Research Requests received. Airport Planning was in Phase Three – tools to assist with new runway constructions or lengthing. Ms. Collins stated Mitre was creating a tool to remove the subjectivity from the data received from the airport. She stated R&D will be gathering the data and next year develop a prototype. Ms. Collins proceeded with the research requests naming Simplified Capacity Model – smaller GA airports with Mitre performing the work to begin October 2018, Geospatial Data Library/ Tool – create web mapping application user can upload data and review processed data. Airport Air Quality Screening Methods – now working with Jacobson Daniel Rovolus, adding airports must be sure it does not exceed NAAQS, and NO2 Dispersion Model -due to the revised standard in April 2018.

Ms. Collins highlighted the Noise Program and informed the Subcommittee the Annoyance Survey Results were under review and R&D is reviewing the phone data to try to figure out why the results turned out the way they did. Sleep Study – still working on a Sampling Plan, Ms. Collins stated there are concerns of release of multiple curves and right now R&D is trying to figure out nighttime noise and which airports have exposure. She explained R&D is trying to get away from the OMD Process and the medical exemptions are not going to happen, and as a result the project will be pushed back another year. The Subcommittee commented that most larger airports have a noise compliance issue. Ms. Collins agreed. Ms. Collins continued stating Noise Mitigation and Noise Operations (both being performed by Mitre) are ongoing for at least another year. She explained that there has been work on looking at Steeper Approach and trying to determine how to implement into the NAS. The Subcommittee asked if there have been any issues with the Steeper Approach. Ms. Collins stated not at this time and informed the Subcommittee it is under review with DOT. The Subcommittee asked how it is being looked at, and is it 3.5. Ms. Collins stated it's less than 3.5.

The Subcommittee decided the dates for the winter meeting will be held on February 26-27, 2019 starting at 8:30 a.m., and the summer meeting will be held July 30-31, 2019. Mr. Oswald informed the Subcommittee the full REDAC will be held on Wednesday, October 3, 2019.

Meeting adjourned 3:30p.m.

Review of Recommendations

Spring and Fall of 2017 Recommendations are currently under review.

The subcommittee presented and held discussions on Summer/Fall 2018 Findings and Recommendations.

Actions

Action 1 – The Subcommittee is to provide feedback on future research area landscapes when information is delivered to the Subcommittee

Action 2 – Involve ACI and AAAE on UAS usage at airports. The Subcommittee is to review the UAS Plan when received from Ms. Yak and provide comments by Friday, September 21, 2018.

Mr. Jim Patterson informed the Subcommittee all documentation pertaining to REDAC Meetings can be located at [REDACDB.FAA.Gov/Subcommittee on Airports/](https://redacdb.faa.gov/Subcommittee%20on%20Airports/)organized by date of meeting

Research, Engineering and Development Advisory Committee
PPT Briefing to Sub-committee on Airports: August 20, 2018
 Technical Center Director's Conference Room

Times	Presenters	Topics
9:00 am	Christopher Oswald <i>ACI-NA, Subcommittee Chairperson</i>	Introduction
9:15 am	Shelley Yak <i>Director, FAA Technical Center</i>	DOT Research Alignment and Direction
9:45 am	John Dermody <i>Director</i> <i>FAA Office of Airports Safety and Standards</i>	HQ ARP Update
10:00 am	Michel Hovan <i>Manager, Airports Technology Research Branch</i>	ATR Update, Research Outlook for FY-19-21
10:15 am	Subcommittee Members and FAA	Review of REDAC Recommendations
10:30 am	Jim Patterson <i>Airport Safety R&D Section Manager</i>	Overview of Safety RPA's, Research Outlook for FY-19-21
10:45 am	Break	
11:00 am	Jonathan Torres	Commercial Space Research Update
11:30 am	Mike DiPilato	UAS Research Update
12:00 am	Working Lunch	
12:30 pm	Isidore Venetos	Cybersecurity R&D Plan, Methodology and Airports
1:15 pm	Jim Patterson	Safety Research Key Updates
2:00 pm	Navneet Garg	Pavement Research Key Updates and Research Outlook for FY-19-21
2:45 pm	Lauren Collins	Planning and Environmental Research Key Updates
3:15 pm	Break	
3:30 pm	TBD	OPEN TIME
4:30pm	All	REDAC Recommendations
5:00 pm	Adjourn	

Web conference link:

[Join.me/faanaptf296](https://join.me/faanaptf296)

And/or:

Dial In Access: (USA Only) 888-924-3230

Dial In Access: (Direct Dial) 609-916-1975

Dial In Access (Alternate USA Only) 888-335-6670

Dial In Access (Alternative Direct Dial) 405-225-2375

Participant Passcode: 448780

Research, Engineering and Development Advisory Committee (REDAC)
Subcommittee on Airports
S/F 2018

August 20, 2018

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Jeff Sedin	ALPA
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Maureen Molz	FAA
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Shelley Yak	FAA
Chinita Roundtree-Coleman	FAA
Michel Hovan	FAA
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