FEDERAL AVIATION ADMINISTRATION

REDAC Subcommittee on Aircraft Safety (SAS)

2019 Spring Meeting Minutes

March 6, 2019

The 2019 Spring Research, Engineering and Development Advisory Committee (REDAC) Subcommittee on Aviation Safety (SAS) Meeting was held on March 6, 2019 at the MITRE Corporation, 7515 Colshire Drive, McLean, VA 22102. The meeting agenda is attached in Appendix I. Attendee sign-in sheets are attached in Appendix II. This document summarizes discussions and activities that occurred during the meeting. All presentation materials are available and can be downloaded through the FAA REDAC website.

March 6, 2019

Introduction/Opening

Subcommittee Chair Terry McVenes, SAS Designated Federal Official Dr. Eric Neiderman, and Shelley Yak, Director of the FAA William J. Hughes Technical Center jointly kicked off the meeting with brief opening remarks, which were followed by introduction of SAS members and all attendees.

Review of SAS Summary Report at Full REDAC Meeting in November 2018

The highlights of the full REDAC meeting held in November 2018 were discussed. The highlights of what was presented to the full REDAC were:

- Reviewed and provided comment on the FAA's ongoing safety research plan accomplishments and ongoing research,
- Reviewed and provided comments on the FAA's recently released Unmanned Aircraft System (UAS) research plan, and
- Reviewed topics of interested to the SAS including UAS, general aviation safety, and fatigue management.

Potential Content of Office of Aviation Safety's (AVS) FY22 Strategic Guidance

Mark Orr, AVS R&D manager, presented the potential content of FY22 strategic guidance rather than the FY22 strategic guidance because it was not fully developed and approved by Office of the Associate Administrator for Aviation Safety. The strategic guidance supports the sponsoring offices for developing R&D requirements. The AVS research sponsors could use the strategic guidance — which includes safety hazards, risks, and safety issues — to drive AVS research needs as well as to consider where to apply research resources. Mr. Orr provided the following strategic guidance elements:

- Aviation Safety Hazards and Risks for AVS-Wide Consideration
- Risks to Aviation Safety in the Current NAS – Safety Teams

  - Commercial Aviation Safety Team (CAST)
  - General Aviation Joint Steering Committee (GAJSC)
  - Rotorcraft (US Helicopter Safety Team (USHST))
  - Unmanned aircraft Safety Team (UAST)
- Emerging Risks to Aviation Safety (Part 121)
- System-Level Safety Issues

SAS Emerging Issues Overview and Expectations

Attendees reviewed and discussed emerging issues compiled by SAS members in 2014 and updated the list. Certification of high-energy storage was added to the original list. Some of the SAS members mentioned there is an urgency to conduct research in the area of emerging issues. This exercise was particularly useful as an introduction to the Research and Development (R&D) Landscape discussion that was held later in the afternoon.

R&D Budget Update

Mike Gallivan, Manager of Research, Engineering and Development (R,E&D) Financial Management, presented the FAA R&D budgets. Full FY19 Appropriation at the level of $191.1M was signed on February 15, 2019. Gallivan briefly described the House and Senate language on research areas. He mentioned that the FY20 budget would be submitted to Congress the week of March 11, 2019, but he could not provide the budget information because it was not yet submitted to the Congress.

The FY21 target is $120M, which would be delivered to OST in June 2019. Gallivan also mentioned that current FAA reauthorization wasapproved through 2023.

Review of FAA Responses to the Fall 2018 Findings and Recommendations (F&R)

Attendees reviewed the FAA's draft responses to the F&Rs from the SAS August meeting.

R&D Landscape Presentation

Maureen Molz, Manager of the Research & Development Management Division presented the R&D Landscape effort. She mentioned that the FAA R&D Landscape is an "aviation industry-focused view of research drivers that may result in impacts to industry objectives, emerging technologies and envisioned operations.**"** She also described the methodology for data collection as well as how the R&D Landscapes will be used. She described the SAS role in this effort as a review of the driver list and identification of any missing items.

The output of this effort will be a document that includes research drivers and their impacts for each of the six research domain areas, i.e. Airport Technology, Aircraft Safety Assurance, Digital Systems & Technologies, Human and Aeromedical Factors, Environment & Weather Impact Mitigation, and Aviation Performance & Planning.

R&D Landscape Discussion and SAS Inputs

SAS members reviewed the driver list and provided their comments for several hours in the afternoon. The driver list that was discussed is:

- Supersonic Flight
- Urban Air Mobility
- Growth of Mixed Operations (Piloted, Autonomous, Unmanned)
- New Mission Types
- Non-Traditional NAS Access Points
- Space Operations
- Enable Routine Small UAS Operations Beyond Visual Line of Sight (BVLOS
- Autonomous Ground Service equipment at Airports
- Aircraft Command and Control Using Automation and Remote Sensing Technology
- New Vehicles or their Components That Make Use of New Technologies, Software, or Materials
- Certification Using New Technologies, Standards, or Processes
- Remote/Virtual Technologies
- Advances in Electric or Hybrid Electric Propulsion
- Future Fuel Technologies
- New Technologies for Airport Pavement Infrastructure and Design
- Information Assurance and Security for All Operations (cybersecurity)
- Big Data Analytics and Techniques
- Human-Machine Teaming and New Technology Interfaces
- Artificial Intelligence
- Increased Connectivity by Cyber-Physical Systems (Internet of Things Technologies)
- Crowd Sourcing Weather Data
- Advancement in Position, Navigation, & Timing Technology
- Risk-Based Decision-Making techniques and analytics
- Infrastructure Resiliency and Continuity of Operations
- New Medical Technologies and New Substances (Medications, Drugs, Etc.).

SAS members took an action to provide more comments and insights to the R&D drivers list after the meeting and submit them to the R&D Landscape team.

The attendees took a tour of MITRE Safety Analysis and Integrated Demonstration and Experimentation for Aeronautics (IDEA) laboratory before adjourning the meeting.

Appendix 1

2019 Spring REDAC SAS Meeting

Agenda
March 6, 2019

Dress code: ***Business Casual***
Location: Mitre (for local participants): 7525 Colshire Dr, McLean, VA 22102
Telecon: Dial In Access: (USA Only) **888-924-3230**
Dial In Access: (Direct Dial) **609-916-1975**
Participant Passcode: **235529**
Instructions: Call the Dial-in Access number listed above.
When prompted, enter the Passcode followed by the # key to be connected.
GoToMeeting: Please join from your computer. https://global.gotomeeting.com/join/136546349

Site Info: See Page 2 for Parking/transportation and lodging information

March 6, 2019 (Wednesday)

Time	Topics	Presenter(s)
8:00 – 8:30	Arrival	
8:30 – 8:45	Introduction/Welcome/Opening Remarks	Eric Neiderman
8:45 – 9:00	FAA Director of Research Overview	Shelley Yak
9:00 – 9:15	SAS Chair Opening & Report on REDAC Meeting	Terry McVenes
9:15 – 9:30	Potential content of FY2022 Strategic Guidance	Mark Orr
9:30 – 10:00	SAS Emerging Issues Overview and Expectations	SAS Members
10:00 – 10:15	Comfort Break	
10:15 – 10:45	FAA Budget Update	Mike Gallivan
10:45 – 11:15	Review of FAA responses to Fall 2018 F&R	Eric Neiderman
11:15 – 12:00	R&D Landscape presentation	Maureen Molz
12:00 – 1:00	Lunch	
1:00 – 2:45	R&D landscape discussion and SAS inputs	All
2:45 – 3:00	Comfort Break	
3:00 – 4:00	Continue R&D landscape discussion	All
4:00 – 5:00	Safety Analysis/IDEA Lab tour	Mitre
6:00 - Group Dinner	**TBD**	

Aircraft Safety Subcommittee
Winter/Spring 2019

March 6, 2019

Name	Affiliation
Steve Summer	FAA
Mark S. Orr	FAA
Eric Neiderman	FAA
Terry McVenes	RTCA/FSF
Dres Zellweger	Consultant
Akbar Sultan	NASA
Chris Heck	ALPA
Andrew Lacher	MITRE
Nina Mohleji	MITRE
Michael Wells	MITRE
Hossein Eghbali	FAA
Tim Evans	FAA
Terry King	FAA
Michelle Yeh	FAA
Colleen Donovan	FAA
Daniel Brock	FAA
Jim Mangie	Delta Airline
Maureen Molz	FAA
James Bruno	FAA
John Crowley	US Army
Chinita Roundtree-Coleman	FAA
Via Teleconference	
Chris Kmetz	Pratt and Whitney
Dave Atwood	FAA
Shelley Yak	FAA
Steve Ecker	
Dave Blake	
Mike Paglione	FAA
David Polland	Boeing
Mike Gallivan	FAA HQ
Don Kauffman	
Stacey Zinke	FAA/CAMI
Paige Williams	FAA