AVIATION RULEMAKING ADVISORY COMMITTEE (ARAC)

FEDERAL AVIATION ADMINISTRATION

September 19, 2019

ARAC MEETING 1:00 p.m.

- Welcome and Introductions
- Federal Advisory Committee Act (FACA) Statement
- Ratification of Minutes
- Status Reports
  - ARAC
    - Airman Certification Systems Working Group – Mr. David Oord
      - ❖ Covering expanded tasks and proposed timelines (Interim Recommendations Due to FAA: 12/2019; ARAC Meeting: 9/2019)
      - ❖ Expanded Tasks to include Sport Pilot and Recreational Pilot certificates (Interim Recommendations Due to FAA: TBD; ARAC Meeting: TBD)
    - Part 145 Working Group – Ms. Sarah McLeod
      - ❖ Preliminary Report (Due to FAA: 12/31/2020; ARAC Meeting: September 2020)
      - ❖ Final Report (Due to FAA: 12/31/2021; ARAC Meeting: September 2021)
    - Designated Pilot Examiner Working Group – Chair Appointment Pending
  - Transport Airplane and Engine (TAE) Subcommittee – Mr. Keith Morgan
    - Flight Test Harmonization Working Group - Brian P. Lee
      - ❖ Topic 31 Definitions for Vdf/Mdf (Recommendations Due to FAA: 12/2019; ARAC Meeting: 12/12/2019)
      - ❖ Topic 15 Pilot Induced Oscillation (Recommendations Due: 3/31/2020; ARAC Meeting: 3/19/2020)
      - ❖ Topic 16 Handling Qualities Rating Method (HQRM) (Recommendations Due: 3/31/2020; ARAC Meeting: 3/19/2020)
      - ❖ Transport Airplane Performance and Handling Characteristics, Phase 3 Tasking (Recommendations Due: 5/1/2020; ARAC Meeting: 3/19/2020)

- Metallic and Composite Structures – Doug Jury
    - Expanded Taskings (Recommendations Due: December 2019; ARAC Meeting: 12/12/2019)
- Avionics System Harmonization Working Group (Recommendations Due: 6/30/2020; ARAC Meeting: 6/18/2020) – Clark Badie
- Ice Crystals Icing Working Group (Recommendations Due: 12/31/2020; ARAC Meeting: 12/10/2020) – Melissa Bravin and Allan van de Wall
- Flight Deck Secondary Barrier Working Group (Recommendations Due: September 2019; ARAC Meeting: 9/19/2019) – Chair Appointment Pending

- Recommendation Reports
    - Transport Airplane and Engine (TAE) Subcommittee – Mr. Keith Morgan
        - Flight Test Harmonization Working Group – Brian P. Lee
            - Topic 20 Return-to-Land
- New Tasking
    - Avionics Systems Harmonization Working Group
- Any Other Business
    - FAA update on regulatory reform
    - Update on Safety Oversight and Certification Advisory Committee (SOCAC)
    - Update on Executive Order 13875

ARAC agendas, meeting minutes, and reports are available on the FAA's committee website at https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/committee/browse/committeeID/1.

AVIATION RULEMAKING ADVISORY COMMITTEE
RECORD OF MEETING

MEETING DATE: June 20, 2019

MEETING TIME: 1:00 PM EST

LOCATION: Federal Aviation Administration
800 Independence Avenue, SW
Bessie Coleman Room
Washington, DC 20591

PUBLIC ANNOUNCEMENT: The Federal Aviation Administration provided notice to the public of this Aviation Rulemaking Advisory Committee meeting in a *Federal Register* notice published on April 17, 2019 (84 FR 16137).

ATTENDEES: **Committee Members and Alternates**

Yvette A. Rose	Cargo Airline Association (CAA) *ARAC Chair*
David Oord*	Aircraft Owners and Pilots Association (AOPA) *ARAC Vice Chair*
Chad Balentine	Air Line Pilots Association (ALPA)
Michelle Betcher*	Airline Dispatchers Federation (ADF)
Doug Carr	National Business Aviation Association (NBAA)
Tom Charpentier	Experimental Aircraft Association (EAA)
Ambrose Clay	National Organization to Insure a Sound Controlled Environment (NOISE)
Walter Desrosier	General Aviation Manufacturers Association
Gail Dunham	National Air Disaster Alliance Foundation
Paul Hudson	FlyersRights.org
Chris Martino	Helicopter Association International (HAI)
Paul McGraw	Airlines for America

Dinkar Mokadam	Association of Flight Attendants (AFA)
Keith Morgan	Pratt & Whitney, Chair of the transport aircraft and engine subcommittee
Christopher Oswald*	Airports Council International, N.A. (ACI, NA) and American Association of Airport Executives
George Paul	National Air Carrier Association (NACA)
David Supplee*	International Association of Machinists and Aerospace Workers (IAMAW)

Attendees

Ilsa Mroz	Aerospace Industries Association (AIA)
Leslie Riegle	AIA
Alyssa Crystal	ALPA, Intern
Randy Williams	ALPA
Preston Greene	ALPA
Jill Larrabee	ALPA
Julie Brightwell	Boeing
Daniel Friedenzohn*	Embry-Riddle Aeronautical University
Brian Lee*	Boeing Flight Test Harmonization Working Group Co-Chair
Bill Whyte	Regional Airline Association
Drew Jacoby Lemos*	Regional Airline Association
Marcia Adams	FAA
Justin Barcas	FAA
Tiffani Bigler	FAA
Porsha Brown	FAA
Thuy Cooper	FAA

Andrew Giacini	FAA
Brent Hart	FAA
Katie Inman	FAA
Melissa King	FAA
Karen Lucke	FAA
Trey McClure	FAA
Lakisha Pearson	FAA
Bill Petrak	FAA
Puja Sardana	The Regulatory Group/FAA
Brandon Roberts	FAA, Acting Designated Federal Officer
Todd Steiner	FAA
Giles Strickler	FAA
Larry West	FAA
Victor Wicklund	FAA
Patricia Williams*	FAA
Alan Strom*	FAA
Diane Cook*	FAA

*Attended via teleconference.

Welcome and Introduction

Ms. Yvette Rose, ARAC Chair, called the meeting to order at 1:06 p.m. Ms. Rose invited those individuals who attended in person to introduce themselves and took a roll call of those individuals who attended via teleconference. Ms. Rose provided an update on Lirio Lui, who has been assigned as Deputy to the Associate Administrator for Aviation Safety for at least a 4-6 month assignment. Ms. Rose stated that Mr. Brandon Roberts, who will be the Acting Executive Director for the Office of Rulemaking while Ms. Liu is on assignment, will be the Acting Designated Federal Official (DFO).

Mr. Roberts read the required Federal Advisory Committee Act (FACA), Title 5, United States Code (5 U.S.C.); Appendix 2 (2007) statement. Mr. Roberts confirmed that the

meeting is public and that members of the public may address the ARAC with the permission of the Chair.

Ratification of Minutes

Ms. Rose noted that an update was made to a name and company affiliation spelling in the most recent minutes sent to ARAC. Mr. Chad Balentine asked to confirm that the spelling of his name was also corrected in the minutes, which it was. Ms. Rose asked if there was a motion to approve the minutes from the June 20, 2019 ARAC meeting. Mr. George Paul moved to accept the minutes and Mr. Chad Balentine seconded the motion. The ARAC voted to ratify the minutes.

Status Reports

****** Status reports and recommendation report briefings presented at the December 2018 meeting may be found at https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information/documentID/3942.

Rotorcraft Bird Striking Working Group Recommendation Report – Rev. B

Ms. Yvette Rose provided an update on the revision to the Rotorcraft Bird Striking recommendation report. She reminded the ARAC that it approved the original report in December 2017. The working group submitted a revised report (Revision B) in December 2018.

Ms. Rose stated that the working group asked ARAC to consider another edit (Revision B) of the report. Ms. Rose specified that Revision B corrected the list of bird strike resistant rotorcraft by adding: AS332-L2 AND –H175 to the list of data and assumptions section, (ensuring the record is clear), the H175 in the discussion section, and the wording for the number of passenger seats in lieu of maximum occupancy was corrected to align with the changes made in Revision A. Additionally, Ms. Rose said the recommendations for existing rotorcraft were modified (to provide more consistent terminology) by changing the word “must” to “should” to align with FAA terminology. Ms. Rose noted the term “tiered safety” was changed to “safety tiered” for consistency throughout the report. She noted that ARAC does not need to vote on Revision B, as the updates do not change the original recommendation voted and accepted by ARAC, but is rather a technical change

Airman Certification Systems Working Group (ACSWG)

Mr. David Oord, ACSWG Chair, provided a status report for the ACSWG, including an overview of membership, a summary of tasking, an overview of the ACSWG’s schedule, and the status of tasking.

Mr. Oord reported ACSWG completed the Private and Commercial ATP, Instructor, and AMT certificates and Instrument Rating Report. He stated it was unanimously approved by ARAC and forwarded to FAA.

Mr. Oord noted expanded tasks will be due at the end of this year, no later than the middle of next year.

Addressing the meeting schedule, Mr. Oord confirmed a meeting just occurred June 18-19, 2019, and future meetings are scheduled for September 25-26, 2019, and December 10-11, 2019.

Mr. Oord provided an overview of the interim report for ARAC's consideration, which include Draft Airmen Certifications Standards for:

- Commercial Pilot – Powered-Lift (FAA-S-ACS-2)
- Commercial Pilot – Helicopter (FAA-S-ACS-16)
- Instrument Rating – Helicopter (FAA-S-ACS-14)

Ms. Rose asked Mr. Oord to clarify that the report was submitted to the FAA in May and that, once considered, it would be posted in the public docket for comments.

Ms. Rose asked if there was a motion to accept the interim report. Mr. Doug Carr motioned, and Mr. George Paul seconded. The motion was accepted.

Part 145 Working Group

Ms. Yvette Rose provided the Part 145 Working Group status report on behalf of Ms. Sarah MacLeod and Mr. Ric Peri. The status report included an overview of membership, a summary of tasking, the working group's schedule, and the status of tasking.

Ms. Rose noted some changes in membership, as detailed in the presentation. She also noted the preliminary report is due by December 11, 2020. Ms. Rose stated the working group updated its schedule to ensure the working group met the timeline.

Transport Aircraft and Engine (TAE) Subcommittee

Mr. Keith Morgan, TAE Subcommittee Chair, provided an overview of the TAE's schedule and provided status updates for the TAE Subcommittee's working groups.

Mr. Morgan reviewed the schedule of meetings in 2019, which included a face-to-face on May 15, a scheduled telecom on July 24, and another face-to-face in November in Seattle. Mr. Morgan noted TAE always reserves the right to add additional calls as necessary.

Flight Test Harmonization Working Group (FTHWG)

Mr. Morgan provided a status report for the FTHWG, including an overview of membership, a summary of tasking, an overview of the working group's Phase 3 schedule, and the status of tasking.

Mr. Morgan stated FTHWG membership remains constant and is well attended. He confirmed the tasking is the same and the FTHWG is on track to complete its tasking in March 2020.

Mr. Morgan said the report is in for the Phase 3: Go-Around performance. Mr. Morgan stated the Return-to-Land (Topic 20) report should be presented at the September 2019 meeting.

Mr. Morgan reported the VDF/MDF recommendation (Topic 31) will be presented at the December 2019 ARAC meeting. Additionally, Mr. Morgan reported HQRM and Pilot Induced Oscillation will be presented next year. Mr. Morgan noted that the FTHWG moved one task (Topic 19) over to ASHWG.

Mr. Morgan stated the European Union Aviation Safety Agency's (EASA) participation has improved. He said EASA hosted the March 2019 meeting.

Transport Airplane Metallic and Composite Structures Working Group

Mr. Morgan provided an update on the Transport Airplane Metallic and Composite Structures working group. He noted that, at the end of last year, the working group lead switched from Michael Gruber (Boeing) to Doug Jury (Delta).

Mr. Morgan reported the group completed their original tasking. He stated that the following three additional topics were added as a supplement - 1) Structural Damage Capability (SDC) for Single Load Path (SLP) structure; 2) Structural Bonding and "Weak Bonds;" and 3) Repeat Inspections and Crack Interaction. Mr. Morgan stated the working group formed three smaller groups to address each topic. He stated there are no foreseeable difficulties with items 1 and 2, but the most challenging may be item 3.

Mr. Morgan said the working group is currently on schedule and does not need any support.

Ice Crystals Icing Working Group

Mr. Morgan provided a status report for the Ice Crystals Icing Working Group including an overview of membership, summary of tasking, overview of schedule, and status of tasking

Mr. Morgan stated that this is a fairly sizable group who had its first meeting in April 2019. He reported the intent was to get going by January 1, 2019, but it was delayed due to trouble getting membership and the government shutdown.

Mr. Morgan reported no changes to the work plan and full schedule of meetings. He confirmed TAE has accepted the group's work plan.

Avionics System Harmonization Working Group (ASHWG)

Mr. Morgan provided a status update for the ASHWG, including an overview of membership, summary of tasking, overview of schedule, and status of tasking

Mr. Morgan reported the working group is drafting the report, with the intent for TAE review in March 2020 and for ARAC consideration by June 2020.

Recommendation Reports

Flight Test Harmonization Working Group (FTHWG)

Mr. Brian Lee provided an overview of the FTHWG Topic 18 Go-Around Handling Qualities and Performance recommendation report. He stated the task is to recommend harmonized rule/guidance materials for Go-Around Handling Qualities and Performance, with consideration of EASA's recent published materials.

Mr. Lee further explained this is being considered from two different regimes, one engine operatives (OEI) and all engine operation/no engine failure (AEO). Mr. Lee addressed the ability of an aircraft to conduct a safe go-around considering factors such as weight, altitude, and temperature. He reiterated that the task is trying to harmonize EASA's data with FAA guidance. Mr. Lee discussed the two topics of concern under OEI, and he added information about accidents caused by high level of airplane performance when conducting an AEO go-around.

He also addressed the disconnect for pilots between the sensory system and what the pilots' eyes are telling them, which can be seen in the Somatogravic Illusion in the report.

Mr. Lee reported there were three face-to-face meetings, 21 dedicated teleconferences, and many more conversations by e-mail on this topic. Mr. Lee described the summary of methods and deliberations. Mr. Lee noted this is the first time in history a regulation would state that an airplane should not have too much performance, and some members suggested approaching this with caution.

Mr. Lee reviewed the final recommendations - updates to Subpart B Regulations to include AEO go-around assessment considerations and updates to Subpart B Guidance to add new sections.

Mr. Lee reported that the group did achieve consensus, but the consensus was not always unanimous. Mr. Lee provided a summary of the dissenting opinions.

Ms. Rose opened the floor for questions from ARAC members. Mr. George Paul questioned whether the recommended requirement was in line with other training done regarding minimum decision heights. Mr. Lee noted that he was not familiar with the specific training Mr. Paul addressed, but that the recommendation was looking at go-around heights of 100 feet.

Mr. Paul Hudson asked a question regarding whether there is a trigger speed that would require a go-around in this recommendation. Mr. Lee replied "no" and noted that the team examined the range of approach speeds typically used to certify airplanes under Part 25.

A member asked if any of these possible criteria would impact the plane, specifically for certain make and model aircraft that have high speed (like the MAX). Mr. Lee noted he was not going to speak to specific makes and models, but the harmonization working group represents all major airlines. Mr. Lee further stated the high speed end is represented by acceleration segment, and is not a function of the approach speed. A different member agreed with Mr. Lee saying he does not think particular make and models will be affected differently.

Mr. Ambrose Clay inquired about any efforts to standardize escape procedures so that all airlines flying into a given airport would apply the same procedure based on the type of aircraft. Ms. Rose reminded the ARAC that this was not within the working group's scope but could possibly be a new tasking. Mr. Chris Oswald added that there has been sporadic on-and-off effort to work toward creating those standards. Mr. Oswald questioned if there are any unintended consequences of the proposed procedures on what maximum allowable heights would be permitted in airport vicinity. It was noted that this is a part 121 design issue.

Ms. Rose asked if the working group recommends rulemaking changes to § 25.143 (Controllability and Maneuverability-General), § 25.145 (Longitudinal control), and updates to advisory circulars. Mr. Lee confirmed yes.

Ms. Rose asked if there was a motion to accept the report. Mr. Chad Balentine moved to accept the report. Mr. George Paul seconded the motion. The ARAC unanimously voted to accept the report.

Updates to Previously Accepted Recommendation Reports

Mr. Roberts provided an update on ARAC recommendation reports submitted to the FAA.

Loadmaster Certification Working Group

Mr. Roberts reported the FAA has determined that it will respond to the Loadmaster Certification Working Group Recommendation by revising the FAA Inspector Handbook 8900.1. The FAA will revise Volume 3, chapter 47 and Volume 6, chapter 2. Mr. Roberts

confirmed the order is not regulatory, and FAA asserts this has always been the air carrier responsibility.

A member asked if there is any other activity on the Loadmaster Certification Working Group at this time, and Mr. Roberts confirmed there is no other activity at this time. Another member asked if this report will be used for guidance, and Mr. Roberts responded by reconfirming this action is only to update the inspector handbook.

Transport Airplane Modernization Rulemaking Project

Mr. Roberts noted the FAA has initiated rulemaking on a part 25 update on regulatory reform, which ARAC recommended. He stated the rulemaking would also address recommendations from the Aircraft Systems Information Security and Protection Working Group. The schedule is included in the Spring Unified Agenda.

Rotorcraft Occupant Pilot Working Group

Mr. Roberts reported that ARAC's Rotorcraft Occupant Pilot Working Group Task 5 Crash Resistant Fuel Systems recommendation report was codified in the FAA Reauthorization Act of 2018. He noted that rulemaking was unnecessary.

Airman Certification Systems

Mr. Roberts reported that the FAA has implemented the recommendations from the Airman Certification Systems Working Group.

Other Comments

A member asked for the status of the Flight Test Harmonization Working Group recommendations. Mr. Roberts indicated those are still being reviewed.

A member inquired about the status of the approximately 100 FAA regulations proposed for deregulatory action, which FAA is discussing with the DOT task force. Mr. Roberts noted that individual rules have been identified (such as part 25) and have moved forward. Mr. Roberts noted there is no skipping notice and comment or any of the rulemaking process for these recommendations. Ms. Rose advised to keep an eye on the Unified Agenda for any additional updates.

An ARAC member asked for any update on seat regulations. Mr. Roberts responded by saying he does not have any updates.

An ARAC Member suggested documenting future updates to include a list of recommendations to show what is moving and what is not. The FAA will take this as an action item.

New Taskings

Flightdeck Secondary Barrier Working Group under TAE Subcommittee

Ms. Rose addressed the new tasking FAA is putting in front of ARAC. She explained it is a tasking for consideration of a Flightdeck Secondary Barrier Working Group under the TAE engine Subcommittee. Ms. Rose indicated there is a tight timeline for this tasking, as the deadline for completion is October 5, 2019.

Ms. Rose reviewed the intent of the statutory requirement as "Section 336 requires FAA issue an order requiring the installation of a secondary cock pit barrier on each new aircraft that is manufactured for delivery to a passenger air carrier in the United States operating under 14 CFR part 121."

Ms. Rose reviewed the tasking and timeline. A question arose to clarify if this tasking was for a newly manufactured aircraft and not for those manufactured for delivery. Ms. Rose answered by stating that is something for the working group to consider as opinions may vary. Another member asked for confirmation that the due date for applications is July 5, 2019. Ms. Rose stated that this is another factor for ARAC to consider.

Ms. Rose pointed out that new taskings will no longer be published in the *Federal Register*. She confirmed ARAC agendas and a link to the website will be published, but taskings will only be available on the FAA website.

Mr. Chad Balentine stated he does not believe the secondary barrier working group tasking is necessary. He also stated that, in 2008, the FAA tasked RTCA, who developed standards and a report that provides everything the FAA needs to consider moving forward on this mandate by Congress. He added that Airbus and Boeing already have developed their own secondary barriers. Mr. Balentine asserted, from his perspective, there is no way TAE can meet the proposed timelines and the issue will get delayed. Mr. Balentine said he strongly opposes formation of this working group, and he asked for FAA to comply with the law and put the rule in effect.

Mr. Dinkar Mokadam inquired as to what would happen if ARAC decides not to accept the tasking. Mr. Roberts explained it is the FAA's intent to meet the statutory requirement. He further stated the FAA believes it needs input from ARAC in order to successfully implement the requirement in the statute. He reminded the ARAC that this is not a new study on how to do secondary cockpit barriers. Mr. Roberts suggested the FAA is asking for ARAC recommendations on how to implement the statutory intent, whether by order or rulemaking. A member asked why these recommendations are from the ARAC instead of TAE. Mr. Roberts reminded them the suggestion was for a working group under the TAE subcommittee. A member clarified that FAA is asking for implementation (schedule and process) and not for technical design standards, and Mr. Roberts confirmed.

Mr. Paul McGraw stated he would tend to agree there is not enough time for this task to be formed. He suggested an ANPRM might be a better approach to meet the deadline. He noted that otherwise there will be grounds for further delay. Ms. Rose responded by stating she does not believe an ANPRM would get any faster results.

Ms. Rose suggested the timeline should ensure ARAC can vote on a report at the September 19, 2019, meeting.

Some members argued that this is something the FAA, not the ARAC, should be doing. Mr. Roberts stated FAA is requesting this tasking from ARAC in order to meet the tight timeline. A member asked for clarification about whether FAA is seeking recommendations from ARAC that may eventually lead to a regulation or guidance, and Mr. Roberts confirmed that, yes, that is what the FAA is seeking. Ms. Rose noted that even if ARAC makes a rulemaking recommendation, there is no guarantee what FAA will do with it.

An ARAC member summarized that this tasking is for the kind of information that is essential for FAA to assess and determine how to put out an order/mandate of some kind in order to achieve the objective of the legislation.

Mr. Preston Greene, a member of the public, requested time from the ARAC Chair to speak on this issue. Ms. Rose allowed 3 minutes for Mr. Greene to address the ARAC members. Mr. Greene stated implementation is already in place and RTCA has issued a detailed report. As a pilot, he said this provides the extra layer of security we need in an airplane. He enforced that the reactionary gap that the secondary barrier provides is critical for crew's human factors. Mr. Greene recommended the FAA update existing AC 120-110.

Ms. Rose reminded members that the FAA could do this without the ARAC's input. She called for a motion on whether to accept the tasking.

A motion was made to accept the tasking, and Mr. Ambrose Clay seconded. Ms. Rose called for a vote. Nine members voted yes, four members voted no, and two members abstained.

The FAA noted the tasking would will be emailed to ARAC members with a link to the FAA Committee website.

Designated Pilot Examiners Reform

Ms. Rose introduced the Designated Pilot Examiners Reform tasking, which is a statutory mandate. Mr. Roberts stated that the statutory language is very clear and states: "Administrator should assign to the ARAC the task of reviewing all regulations and policies related to designated pilot examiners." Ms. Rose noted dates are not listed, but typically the timeline is 30 days from the date of publication on the ARAC website (will be posted June 21).

Ms. Gail Dunham made a motion to accept the tasking and Mr. Tom Charpentier seconded the motion. The ARAC voted unanimously to adopt the tasking.

Other Business

Ms. Rose asked the record to reflect that both the FAA and Congress continue to use and task the ARAC.

Mr. Roberts reported on the new regulatory items listed in the Spring Unified Agenda:

- Flight attendant flight rest and duty
- Part 25 update
- Special rule for modern aircraft withdrawal of 14 CFR part 101, subpart E
- SFARs to address special flight rules for prohibited
- Increase duration of aircraft registration for aircraft registered under part 47.

Ms. Rose announced that on June 14, 2019, an Executive Order was issued with respect to Federal Advisory Committees established in accordance with the Federal Advisory Committee Act (FACA). Ms. Rose stated the Order calls for each agency to terminate one-third of its FACA Committees, unless they are statutorily mandated. There were a number of questions regarding the number of Federal advisory committees and implications of the Executive Order on ARAC. Mr. Roberts explained that FAA does not have guidance yet on how to implement this Order. He further stated that, from the tasking that ARAC has today, the FAA believes ARAC's work is relevant and current. Mr. Roberts asserted that from the FAA's perspective, ARAC is providing good and useful information that is relevant. The FAA took an action item to email the Executive Order to members.

A question was about whether any other working groups are being formed under ARAC. Ms. Rose stated she does not know of any.

A member asked whether the FAA formed an aviation rulemaking committee (ARC) for emergency evacuation. The FAA confirmed an ARC is being formed. Ms. Dunham asked if there are any other ARCs being formed, which the FAA replied that there are none at the time.

Adjournment

Ms. Rose adjourned the meeting at 3:24 p.m.

Airman Certification System Working Group
Status Report to the Aviation Rulemaking Advisory Committee

David Oord
Working Group Chair

September 6, 2019

MEMBERS of ACSWG - INDUSTRY

- David Oord, AOPA
- Paul Alp, Jenner & Block
- Cindy Brickner, SSA
- Paul Cairns, ERAU
- Kevin Comstock, ALPA
- Mariellen Couppee, Honeywell
- Eric Crump, Polk State College
- David Dagenais, FSCJ
- Maryanne DeMarco, CAPA
- Anna Dietrich, Terrafugia
- Rick Durden, Independent
- Megan Eisenstein, NATA
- David Earl, Flight Safety
- Tom Gunnarson, KittyHawk
- Lauren Haertlein, GAMA
- John Hazlet Jr., RACCA
- Jens Hennig, GAMA
- Chuck Horning, ERAU
- David Jones, Avotek
- John King, King Schools
- Janeen Kochan, ARTS Inc.
- Kent Lovelace, UND
- Justin Madden, AMFA
- John McGraw, NATA
- John “Mac” McWhinney, King Schools
- Crystal Maguire, ATEC
- Nick Mayhew, L3
- Phillip Poynor, NAFI
- Jimmy Rollison, FedEx
- JR Russell, NBAA
- Mary Schu, Mary Schu Aviation
- Roger Sharp, Independent
- Jackie Spanitz, ASA
- Burt Stevens, Oxford Flying Club, Inc.
- Robert Stewart, Independent
- Tim Tucker, Robinson
- Robert Wright, NBAA
- Donna Wilt, SAFE
- Roger Woods, Leonardo
- Philipp Wynands, Metro Aviation

MEMBERS of ACSWG – FAA SMEs

- Susan Parson
- Barbara Adams
- Bill Anderson
- Brianna Aragon
- Robert Burke
- Dennis Byrne
- James Ciccone
- Bryan Davis
- Joel Dickinson
- Mike Duffy
- Troy Fields
- Ramona Fillmore
- Adam Giraldes
- Shawn Hayes
- Vanessa Jamison
- Laurin J. Kaasa
- Jeffrey Kerr
- Ricky Krietemeyer
- Mike Millard
- Anne Moore
- Kevin Morgan
- Margaret Morrison
- Richard Orentzel
- Katie Patrick
- Andrew Pierce
- Robert Reckert
- Jason Smith
- Shelly Waddell Smith
- Jeff Spangler
- Robert Terry
- Matt Waldrop
- Larry West
- Stephanie Williams
- Bill Witzig
- Jimmy Wynne

SUMMARY OF TASKING

- Provide recommendations regarding standards, training guidance, test management, and reference materials for airman certification purposes.
- Continuation of ATP, Instructor, and Aircraft Mechanic certificates.
- Revisions for Private, Commercial, Remote Pilot certificates and the Instrument Rating.
- Added Sport and Recreational Pilot certificates – airplane.
- Added Private, Commercial, ATP, and Instructor certificates and Instrument Rating in additional aircraft categories–
  - Rotorcraft, powered lift, lighter-than-air, glider, etc.

SCHEDULE

- Interim reports
  - PVT, COM, ATP, Instructor, and AMT certificates and Instrument Rating – no later than June, 2018 - complete
  - Covering expanded tasks and proposed timelines for completion – no later than December, 2019
- Final recommendation reports no later than June 12, 2020

SCHEDULE

- Future Meetings –
  - September 25 & 26
  - December 10 & 11
  - 2020 TBD

STATUS OF TASKING

- With the addition of Sport and Recreational Pilot certificates – airplane; and
- Private, Commercial, ATP, and Instructor certificates and Instrument Rating in additional aircraft categories (Rotorcraft, Powered-Lift, Lighter-than-air, Glider, etc.
- Coupled with the partial government shutdown and public review and comment of new standards through Federal Register -
  - Schedule has slipped and working group will likely require additional time to accomplish all tasks
    - Will review and offer proposal at December meeting

AIRMAN CERTIFICATION SYSTEM

Airman Certification System - Summary

Statutes provide for the Administrator to determine qualifications and to use designees to examine/test/issue certificates.

49 USC 44703

The Administrator of the Federal Aviation Administration shall issue an airman certificate to an individual …after investigation… is qualified for…the position to be authorized by the certificate.

49 USC 44702

(d) DELEGATION The Administrator may delegate to a qualified private person …a matter related to—(A) the examination, testing, and inspection necessary to issue a certificate under this chapter; and (B) issuing the certificate

14 CFR parts 61, 107: ***FAA regulations set forth the broad requirements and conditions for issuance of pilot/instructor certificates & ratings in terms of aeronautical experience and subject areas for aeronautical knowledge and flight proficiency.***

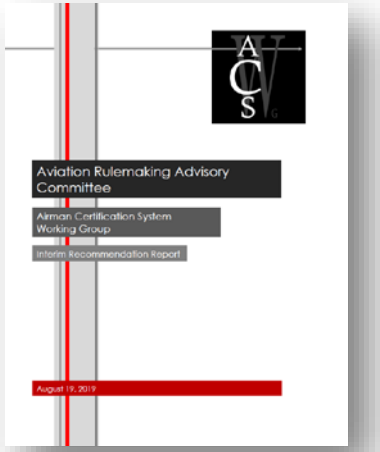
Means of Compliance

Through the Aviation Rulemaking Advisory Committee (ARAC) and public comment, the FAA receives essential advice and recommendations from industry on keeping all components of the airman certification system up to date in the context of constant change.

- *Specific instructions to designees via the Practical Test Standards or Airman Certification Standards for a given certificate or rating.*
- *Keeping FAA advisory handbooks up to date*
- *Best practices for effective testing*

AREAS of ARAC CONSIDERATION

- **Draft Airman Certification Standards**
  - Airline Transport Pilot and Type Rating
    - Powered-Lift (FAA-S-ACS-17)
    - Interim Recommendation Report
      - August 19, 2019
      - First ATP-Type Rating standard for powered-lift aircraft
      - Includes newly developed Category A (CAT A) Approach and Departure tasks
      - Includes newly developed Inflight Transition/Conversion (Straight and Level) task



Part 145 Working Group
Status Report to the
Aviation Rulemaking Advisory Committee

Sarah MacLeod and Ric Peri

Working Group Chairs

September 2019 Meeting

Members of the Part 145 Working Group

Paul Cloutier Working Group Representative	FAA—Flight Standard Services Repair Station Branch
Brent Hart Analyst	Federal Aviation Administration Office of Rulemaking
Thuy Cooper Analyst	Federal Aviation Administration Office of Rulemaking
Justin Smith Director of Operations	Quality Aviation Instruments, Inc., D/B/A QAI
Craig Fabian Regulatory Compliance Leader	GE Engines
Mark House Senior Business Process Manager	GE Engines
Sarah MacLeod Executive Director	Aeronautical Repair Station Association

Members of the Part 145 Working Group

Rick Tober Director of Quality	Triumph Group Operations
Tim Miller Vice President / Safety, Quality & Technical Training	Aviation Technical Services
Richard Macklosky Manager, Regulatory Management Civil Aviation	United Technologies Corporation
Jeff Eagle Senior Regulatory Compliance Specialist	United Technologies Corporation Pratt & Whitney
Howard Whyte Quality Fellow—Regulatory	United Technologies Aerospace Systems DBA Hamilton Sundstrand Worldwide Repair
Eric M. Monte Principal Quality Assurance Engineer	Rockwell Collins

Members of the Part 145 Working Group

~~Michael Tharp~~	~~Delta TechOps~~
~~Senior Principal Engineer~~	
~~Component Engineering~~	
David Fitzsimmons	Delta TechOps
Program Manager	
Rodney Markesbery	Delta TechOps
Program Manager	
Regulatory Compliance	
~~Ronald Witkowski~~	~~Gulfstream~~
~~Director of Quality – Regulatory Compliance~~	
Richard (Ric) Peri	Aircraft Electronics Association
Vice President Government & Industry Affairs	
Sam Porter	Sikorsky
Senior Quality Manager	A Lockheed Martin Company

Members of the Part 145 Working Group

Joe Sambiase Director Airworthiness & Maintenance	General Aviation Manufacturers Association
Jeremy Bryck Senior Director 145 Maintenance	Air Methods Corporation
Justin Madden Legislative Affairs Director	Aircraft Mechanics Fraternal Association (AMFA)
Stephanie Branscomb Director of Operations Quality Manager	Wysong Enterprise
Gary Daniel Avionic Certification	Wysong Enterprise
Stephen R. Wysong President	Wysong Enterprise

Members of the Part 145 Working Group

John Fox Accountable Manager Senior Manager, Quality Control	United Airlines, Inc.
Steven Brewer Manager Structure Engineering	Kalitta Air
Bill Hanf Owner	Green Mountain Avionics
Samuel Edwards Administrative Manager	Boeing Commercial Airplanes
Jeffrey Orth Senior Regulatory & Compliance Specialist	Boeing Global Services

Recognized Observers to the Part 145 Working Group

Brian Koester Manager, Flight Operations & Regulation	National Business Aircraft Association
Carol Giles Aircraft Maintenance and Systems Technology Committee Liaison	National Air Transportation Association
Art Smith Vice President-Chief Quality Officer	AAR Corporation
Steve Douglas Vice President Certification, Compliance & Safety	Oliver Wyman - CAVOK

SUMMARY OF TASKING

- Comprehensive review of internal and external guidance material – relate to laws and regulations – on certificating and overseeing all part 145 repair stations
  - ✓ Orders, notices, advisory circulars, job aids and safety assurance system (SAS) Data Collection Tools (DCTs)
  - ✓ Laws, executive orders
- Recommend improvements to guidance documents to ensure they—
  - ✓Align with regulations, laws and executive orders
  - ✓Annotate the applicable regulations, laws or executive orders
    - ✓ Are numbered to establish a relationship between the guidance and the underlying regulation
  - ✓Communicate agency expectation of compliance to the public and FAA workforce in a comprehensive and consistent manner, with tools to ensure application and evaluation is based on performance-based oversight
  - ✓Account for oversight of repair stations vis-à-vis amount, type, scope and complexity of the certificate holders' work and its size
- Develop a preliminary and final report containing the recommendations

SCHEDULE

- Preliminary report within 24 months from the first meeting of the Part 145 Working Group (December 11, 2018 means no later than Friday, December 11, 2020)
- Final report will be submitted no later than 12 months after the preliminary report is forwarded to the FAA by ARAC (earliest week of December 13, 2021).
  - ✓ Working group meetings to conduct the study and to meet with SMEs are complete with the September face to face.
  - ✓ Next virtual meeting to review draft AMC overview
  - ✓ Next in-person meeting in early 2020

STATUS OF TASKING

- Third face-to-face meeting September 2019
- Presentations by Subject Matter Experts
  - PASS
  - Flight Standards – AFS 500 – interface of policy with training
  - Experienced and in-experienced ASIs
- Completed the thorough review of:
  - Preamble language in final rules
  - Preamble language of historic rules
  - Current and historical internal and external guidance
  - Paring the SAS – DCTs with regulation
  - The history, philosophy and purpose of the SAS -- DCTs

STATUS OF TASKING

- Developing basic problem statement from history, presentations from SMEs and task requirements.
- Reviewed template for addressing each section and paragraph of part 145 to explain its scope/meaning and acceptable means of compliance—worked on specific sections to develop understanding of assignment.
- Continue outlining information for preliminary report based upon SME presentations and development of acceptable means of compliance to bridge the gap and created consistency between regulation and guidance.

AREAS of ARAC CONSIDERATION

Hopefully always none, unless otherwise advised.

Transport Aircraft and Engines Subcommittee Status Report to the Aviation Rulemaking Advisory Committee

Keith R. Morgan
Subcommittee Chair

19 September 2019

MEMBERS of the Transport Aircraft and Engines Committee

Pratt & Whitney

ALPA

A4A

ASD

Airbus

Boeing

GAMA

AIA

Bombardier

NADA/F

Embraer

SCHEDULE

- Last Meetings:
  - Telecom March 20, 2019
  - Face-to-face May 15, 2019 (Washington)
  - Telecom July 24, 2019

- Next meetings:
  - Face-to-face Nov. 6, 2019 (Seattle)

Flight Test Harmonization Working Group
Status Report to the
Aviation Rulemaking Advisory Committee

Brian P. Lee, Boeing
Christine Thibaudat, Airbus
Working Group Chairs

19 September 2019

MEMBERS of Flight Test Harmonization Working Group

Authorities	OEM's		Operators	Observers
FAA Joe Jacobsen Bob Stoney Paul Giesman	Airbus Laurent Capra + SME's	Embraer Murilo Ribeiro + SME's	ALPA Rikki Gardonio Len Quiat	JCAB (Japan) Takahiro Suzuki Atsushi Fukui
EASA John Matthews Marco Locatelli	Boeing Paul Bolds-Moorehead + SME's	Gulfstream Mike Watson +SME's		CAAI (Israel) Yshmael Bettoun
Transport Canada Lee Fasken	Bombardier Tony Spinelli +SME's	Textron Kurt Laurie +SME's		Norwegian Airlines John Lande
ANAC (Brazil) Pedro Donato	Dassault Philippe Eichel +SME's			

SUMMARY OF TASKING

- Transport Aircraft Performance and Handling Characteristics, Phase 3
- Long list of topics prioritized in Phase 1 (June, 2013 – June, 2014)
- Phase 2 Complete November, 2017; except
  - Wet Runway Stopping Performance: now complete
- Phase 3:
  - 15 . Pilot Induced Oscillation
  - 16. Handling Qualities Rating Method (+17)
  - 17~~. Failure Assessment Methodology~~
  - 18. Go-Around Performance
  - ~~19. Use of Amber Band on Airspeed Tape~~ (Send to ASHWG with help from FTHWG)
  - 20. Return-to-Land
  - 30. Directional Control Below Vmc on Slippery Surfaces -
  - 31. Definitions of Vdf/Mdf (esp. for limited airplanes)
- Strategic Considerations
  - Considered to be aggressive
  - FTHWG began work ahead of formal tasking
- ASHWG: Low Energy Alerting
  - FTHWG is participating with ASHWG (B. Lee is Liaison)

PHASE 3 SCHEDULE

	1	2	3	4	5	6	7	8	9	10	11	12
	Wichita	Cologne	Seattle	Paris	Montreal	Toulouse	Melbourne	Cologne	Washington DC ?	Oslo	Savannah	Bordeaux/ Istres?
	June 17	Sept 17	Dec 17	March18	Jun-18	September 18	December 18	4-8 March 19	10-14 June 19	9-13 Sept 19	2-6 Dec 19	2-6 March 20
15 PIO					H			H	H	H*		
16 HQRM					H	H	H	H	H	H*		
18 GAR		P	P	*P		~~Report 1 November~~	Report 20 December					
20 Return to Land					P	P	P	*	Report 24 July			
30 Yaw Control	H	H		H*	Report 1 June							
31 Vdf/Mdf	H		H	H		H	H	*		Report 1 October		

(*) means voting on requirements and guidance; final report will follow

P = Aircraft Performance
H = Handling Qualities

30 month clock starts 1 November, 2017
(so we've had a head-start)
FTHWG intends to stay on this schedule as best we can
(as opposed to stretching to 30 months from this date)
Buffer at end of schedule for contingencies

Tasking End Date
31 March, 2020
(We won't use it if we don't need it; we are anticipating Phase 4 to follow)

STATUS OF TASKING

- Phase 3: FTHWG considers activity on-track / on-schedule…with some caution at this point
  - Go-Around Performance (Topic 18) - **COMPLETE**
    - Present to ARAC 20 June (Report has already been sent)
  - Return to Land - **COMPLETE**
  - Vdf/Mdf for protected aircraft
    - Recommendation Report expected 1 October, 2019
    - Re-scheduled to be in line with TAE on 5 November; ARAC on 12 December
      - Considered back on track to meet the schedule
  - HQRM
    - Considered on-track / on-schedule to finish before March, 2020
    - WATCH ITEM: Harmonization of this topic is proving more difficult and multi-faceted than originally envisioned; we don't have the right population of expertise.
      - Task progress is on hold while we add SME's from Systems Safety and Flight Controls disciplines.
      - Schedule (March 2020) may be at risk, but we need to get this right. (Already coordinated with FAA management)
  - Pilot Induced Oscillation
    - 3rd face-to-face meeting March 2019
    - Considered on-track / on-schedule to finish before March, 2020
- Phase 4 Planning
  - Begun planning to discuss potential Phase 4 topics at June/September meetings
- ASHWG: Low Energy Alerting
  - FTHWG is participating (B. Lee is the liaison)
  - Face-to-Face in early May
    - Questions about 25.143(h) (40 degree bank capability), and what may be acceptable during this compliance demonstration (e.g., alert vs automatic thrust increase)
    - Questions about graduation of alerting from Caution to Warning at very low altitude with or without low energy mitigation
    - We anticipate this will generate additional work for FTHWG, which was not on the original schedule. Current ASHWG draft rule is different than FTHWG-proposed 25.176(c) and is not simply a relocation of the regulation from 25.176 to 15.1303.
  - Next telecom: 25 September

STATUS OF TASKING ACTIVITIES

- →FTHWG-49 : 5 -8 Mar 19 Meeting Cologne (EASA) (Topics 15 PIO-16 HQRM)
- …
- 21 May (Vdf/Mdf)
- 28 May (RTL)

- →FTHWG-50: 10-14 Jun 19 Meeting Washington DC (ALPA) (Topics 16 HQRM (first)- 15 PIO (second))
- 18 June (Vdf/Mdf)
- 25 June (RTL)
- 2 july (Vdf/Mdf)
- 9 july (PIO)
- 16 July (HQRM)
- 23 jul (-)
- 30 jul (-)
- 6 Aug (-)
- 13 August (HQRM)
- 20 Aug (-)
- 27 Aug (PIO)
- 3 sept (Vdf/Mdf)

- →FTHWG-51 : 9-13 Sept 19 Meeting Oslo (Norwegian) (Topics 15 PIO-16 HQRM)
- →FTHWG-52 : 2-6 Dec 19 Meeting Savannah (Gulfstream)

- →FTHWG-53 : 2-6 Mar 20 Meeting Bordeaux/ Istres ? (Dassault ?)

Activity since 15 May, 2019

2019:
TAE : 20 March, 15 May, 24 Jul, 5 Nov
ARAC: 20 June, 19 Sept, 12 Dec

AREAS for ARAC CONSIDERATION

- No additional guidance needed from FAA or ARAC

- EASA's participation has fallen again
  - Possibly because of single-threaded support; difficult getting voting position

Transport Airplane Metallic and Composite Structures Working Group Status Report to the Aviation Rulemaking Advisory Committee

Doug Jury, Delta Air Lines, Inc.
Working Group Chair

8/29/2019

Transport Airplane Metallic and Composite Working Group MEMBERS

- Industry WG voting members:
  1. Michael Gruber (Boeing)
  2. Chantal Fualdes (Airbus)
  3. Salamon Haravan (Bombardier)
  4. Benoit Morlet (Dassault Aviation)
  5. Antonio Fernando Barbosa (Embraer)
  6. Kevin Jones (Gulfstream)
  7. Toshiyasu Fukuoka (Mitsubishi Aircraft)
  8. David Nelson (Textron Aviation)
  9. Phil Ashwell (British Airways)
  10. Doug Jury (Delta Air Lines) –Chairperson
  11. Mark Boudreau (FedEx)
  12. Eric Chesmar (United Airlines)
- NAAs: FAA (Walt Sippel – voting representative), Larry Ilcewicz, Michael Gorelik, Patrick Safarian; EASA (Richard Minter, Simon Waite); ANAC (Pedro Caldeira, Marco Villaron, Fabiano Hernandes); TCCA (Jackie Yu); JCAB (Tomoaki Higashikawauchi)

SUMMARY OF TASKING

With the increased use of composite and hybrid structures recommendations regarding revision of the **fatigue and damage-tolerance requirements** & associated guidance material were previously provided in Final Report, dated 6/27/2018

Tasking was divided up into the following 12 focus areas:

1. Threat Assessment
2. Emerging material technology
3. Inspection Thresholds
4. Structural Damage Capability – Fail-safety
5. Aging, WFD & LOV (including ultimate strength & full-scale fatigue test evidence)
6. Testing (related to composite and hybrid materials including WFD test demonstration)
7. Repairs (bonding / bolting)
8. Modifications
9. EASA aging aircraft rulemaking and harmonization
10. Rotorburst
11. Disposition of cracking during full-scale fatigue testing
12. Accidental damage inspections included in the ALS conflicts w/ MSG-3 program

During final report submission and review by ARAC in September, 2018 three separate topics were raised as needing further evaluation and recommendation from this existing WG.

SUMMARY OF TASKING

Three additional items for rule & guidance recommendation development

1. Structural Damage Capability (SDC) for Single Load Path (SLP) structure:

- Develop requirements and guidance material for single load path (SLP) structure, which by definition has no SDC

2. Structural Bonding and “Weak Bonds”

- FAA requests further clarification from the working group on how to address disbonds and weak bonds as a manufacturing defect

3. Repeat Inspections & Crack Interaction

- Advisory Circular 91-82A provides evaluation considerations for establishing inspection thresholds and repeat intervals, including consideration of crack interaction with little guidance in AC. Based on this, the FAA is requesting information from the working group on how to address crack interaction when establishing inspection programs.

SCHEDULE

- Deliverable: report (three new separate reports) containing:
  - Recommendations on appropriate performance-based requirements
  - Recommendations on any new guidance or changes to existing guidance
  - Qualitative and quantitative costs and benefits of the recommendations

- **Milestones:**
  - ~~TAE Status 2 — March 2019~~
  - ~~WG face to face meeting (San Francisco) — April 2019~~
  - ~~TAE Status 3 — May 2019~~
  - Second *Face to Face, ATL* — Oct 2019
  - Provide cost and benefit analysis — (Draft rule & guidance recommendation + 1 month) 2019/2020
  - TAE Status — Nov 2019
  - Submit Recommendation Report to TAE for review — Feb 2020

- *Present plan is each of three topics to be covered in separate reports to be delivered to TAE once done.*

- *Meeting cadence:*
  - *Sub-teams (including NAA representatives) would meet more frequently*
  - *Full WG meetings (virtual) – monthly or as needed*

STATUS OF TASKING

Three separate reports:

1. *Structural Damage Capability/Single Load Path*
    1. *Though much progress has been made with development of agreeable guidance on SDC for SLP, some details may be difficult to resolve (i.e., fail safe integrally stiffened structures).*
    2. *SDC-SLP recommendation report deadline for TAE review expected to be met (Feb 2020)*

2. *Structural Bonds*
    1. *Notional recommendations from subgroup have not been met with any strong objections.*
    2. *Detailed guidance development in-work by smaller task group*
    3. *Structural Bonds recommendation report deadline for TAE review expected to be met (Feb 2020)*

3. *Crack Interaction*
    1. *Wide variety of perspectives from WG members on topic has created challenges in a clear path for meaningful recommendations*
    2. *Current WG discussions have confirmed FAA position that this topic warrants attention as many members application of current guidance in practice differs appreciably – though extent of the difference in overall product safety is unclear (it's not presently known that any one approach described by DAH WG member is inherently superior than another's in terms of product safety), rather than analytical and certification activities*
    3. *Crack interaction report deadline for TAE review may not be met (Feb 2020 remains the goal but a future request for an extension is possible)*

AREAS of ARAC CONSIDERATION

- At this time there are none.
- However, schedule adjustments may be requested pending extent of progress made at October 2019 face-to-face WG meeting, especially on subject of crack interaction. Any necessary considerations may be made with ARAC after that meeting.

Ice Crystal Icing Working Group
Status Report to the
Aviation Rulemaking Advisory Committee

Melissa Bravin
Allan van de Wall
Working Group Co-Chairs

19 August 2019

MEMBERS of ICI WG

Member Name	Organization	Role
Alan Strom	(FAA-ANE Standards) FAA Representative	FAA Representative
Keith Morgan	Pratt & Whitney	ARAC Representative
Melissa Bravin	Boeing Commercial Airplanes	WG Co-Chair – Airplane – P
Allan van de Wall	GE Aviation	WG Co-Chair – Engine – P
Tom Dwier	Textron Aviation	Airplane – P
Pierre-Emmanuel Arnaud	Airbus	Airplane – P
Bryan Lesko	Air Line Pilots Association	Other – P
Rikki Gardonio	Air Line Pilots Association	Other – B
Jon Saint-Jacques	A4A/Atlas Air	Other – P
David Dischinger	Honeywell	Engine – P
Keith Wegehaupt	Honeywell	Engine – P
Jim Loebig	Rolls-Royce	Engine – P
Roberto Marrano	Pratt & Whitney Canada	Engine – P
Shengfang Liao	Pratt & Whitney East Hartford	Engine – P
Christopher Baczynski	Mitsubishi MITAC	Airplane – P
Kohei Oyabu	Mitsubishi MITAC	Airplane – B
Brian Matheis	UTAS	Other (probe) – P
John Harvell	Rolls-Royce	Engine – P
Roxanne Bochar	Pratt & Whitney	Engine - P

Member Name	Organization	Role
Philip Chow	FAA	Consultant
Jeanne Mason	FAA	Consultant
Walter Strapp	Met Analytics Inc.	Consultant
Dan Fuleki	National Research Council Canada	Consultant
Ashlie Flegel	NASA	Consultant
Tom Ratvasky	NASA	Consultant
Terry Tritz	Boeing	Consultant
Bob Hettman	FAA	Non-voting role
Doug Bryant	FAA	Non-voting role
Eric Duvivier	EASA	Non-voting role
Julien Delanoy	EASA	Non-voting role
Fausto Enokibara	ANAC	Non-voting role
David Johns	TCCA-probes	Non-voting role
Eric Fleurent-Wilson	TCCA-engines	Non-voting role
Masato Fukushi	JCAB	Non-voting role
John Fisher	FAA	Non-voting role
Tom Bond	FAA	Non-voting role

SUMMARY OF TASKING

- The ICIWG will provide advice and recommendations to the ARAC through the TAE Subcommittee on Appendix D to Part 33, and harmonization of §33.68 *Induction System Icing* requirements as follows:
    1. Evaluate recent ICI environment data obtained from both government and industry to determine whether flight testing data supports the existing Appendix D envelope.
    2. Evaluate the results carried out in Task 1 and recommend changes to the existing Appendix D envelope, as required.
    3. Compare available service data on air data probes from both government and industry probes on Appendix D, including any changes proposed in Task 2. Determine whether engine or aircraft data probe responses warrant the use of a different environmental envelope from those proposed in Task 2, or to the existing Appendix D envelope.
    4. Evaluate the results from Task 3 and recommend ICI boundaries relevant to aircraft and engine air data probes. If the working group proposes a different envelope for aircraft and engine air data probes, recommend if these should be included in the existing Appendix D, or create a new appendix to Part 33.
    5. Identify non-harmonized FAA or EASA ICI regulations or guidance. If the working group finds significant differences that impact safety, propose changes to increase harmonization that may also include icing environments other than Appendix D as a secondary objective.
    6. Recommend changes to the Advisory Circular AC20-147a, *Turbojet, Turboprop, Turboshaft and Turbofan Engine Induction System Icing and Ice Ingestion*, based on Task 1 through 5 results.
    7. Assist the FAA in determining the initial qualitative and quantitative costs, and benefits that may result from the working group's recommendations.
    8. Develop a recommendations report containing the results of tasks 1 through 6. The report should document both majority and dissenting positions on the findings, the rationale for each position, and reasons for disagreement.

SCHEDULE

- April 30 – May 1 2019 – FAA, Burlington, MA
- July 9-11 2019 – Rolls-Royce, Indianapolis, IN
- November 6-8 2019 – Boeing, Seattle, WA
- January 29-31 2020 – Honeywell, Phoenix, AZ
- April 8-9 2020 – General Electric, Munich, Germany
- September 15-16 2020 – Pratt & Whitney, East Hartford, CT
- December 2-3 – EASA, Cologne, Germany
- *(if required)* February 2021 – Honeywell, Phoenix, AZ

STATUS OF TASKING

- Meeting Status
  - Successful kickoff meeting at FAA in Burlington
  - July meeting: in-depth briefing from Walter Strapp on TWC, PSD
- Next Steps:
  - Telecon in September (probe / WG-89 presentation)
  - November meeting in Seattle
- Goal of completion by December 2020

AREAS of ARAC CONSIDERATION

- None

Avionic Systems Harmonization Working Group
Status Report to the
Aviation Rulemaking Advisory Committee

Clark Badie

Working Group Chair

19 September 2019

ASHWG New Task

New task:

Identify and develop recommendations on low energy alerting requirements to supplement previous work

Background:

ASHWG previously tasked to develop standards and guidance material for low speed alerting systems, that may complement existing low speed alerting requirements.

Update:

As a result of the Asiana Flight 214 accident, NTSB recommended to the FAA to “develop design requirements for context-dependent low energy alerting systems for airplanes engaged in commercial operations” (NTSB Safety Recommendation A–14–043)

https://www.ntsb.gov/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=A-14-043

ASHWG New Task

- Task Deliverable: Provide advice and recommendations to the ARAC through the TAE Committee in a report that addresses the following questions relative to new airplane designs, along with rationale.
    1. Do you recommend any changes to the existing low speed alerting requirements to provide additional pilot reaction time in cases where the airplane is both slow and close to the ground?
    2. Do you recommend any new or revised guidance material to define an acceptable low energy alert?
    3. After reviewing airworthiness, safety, cost, and other relevant factors, including recent certification and fleet experience, are there any additional considerations that the FAA should take into account regarding avoidance of low energy conditions?
    4. Is coordination necessary with other harmonization working groups (e.g., Human Factors, FlightTest)? If yes, coordinate with that working group and report on that coordination.
    5. Develop a report containing recommendations on the findings and results of the tasks explained above.
        a. The recommendation report should document both majority and dissenting positions on the findings and the rationale for each position.
        b. Any disagreements should be documented, including the rationale for each position and the reasons for the disagreement.

ASHWG Summary

New task:

Identify and develop recommendations on low energy alerting requirements to supplement previous work

Status:

Meeting held on 27/28 June 2018 (webex)

Meeting held on 5/6 September 2018 (webex)

Meeting held on 13/14 November 2018 (in person)

Meeting held on 13 February 2019 (webex)

Meeting held on 1/2 May 2019 (in person)

Two telecons held in August 2019 (webex)

May 2019 Meeting

Team continued to refine draft report

- Proposed change to 14 CFR 25.1303(c), Flight and Navigation Instruments
  - Add sub paragraph (3), to provide low airspeed (energy) alerting to the flight crew during the approach phase of flight
- Proposed change to AC 25-7D, paragraph 32.2 (Flight and Navigation Instruments—§ 25.1303.)
  - Guidance for compliance/design
  - Guidance for evaluation/procedures
- List of additional considerations
  - Potential to address unstable approaches
  - Other future considerations for AC 25-7D
  - Alerting in all phases of flight
  - Primer on alerting timeline

Next Steps

- Now: ASHWG internal circulation and update
  - General review
  - Specific assignments
- Telecon late September 2019
  - Completion of open assignments and concurrence on the draft for larger circulation
- Specific request for non-US regulatory authority review (EASA, ANAC)
- Coordination with FTHWG in Q4, 2019
- Face to face meeting in Q4, 2019
  - Objective to complete the proposal for TAEIG review by March 2020

Thank you to all of the working group members (current roster attached).....everyone from the working group has made a positive contribution to this task and pending report.

Current Roster

Joe Jacobsen	**FAA**	Joe.Jacobsen@faa.gov
Bob Myers	Boeing	Robert.j.myers@boeing.com
Dave Leopold	Boeing	David.D.Leopold@boeing.com
Brian Lee	Boeing	brian.p.lee@boeing.com
Karl Minter	ALPA	Karl.minter@alpa.org
Chris Heck	ALPA	Chris.heck@alpa.org
Christine Thibaudat	Airbus	christine.thibaudat@airbus.com
Thierry Bourret	Airbus	thierry.bourret@airbus.com
Tim Buker	Gulfstream	Timothy.Buker@gulfstream.com
Janiece Lorey	Gulfstream	janiece.lorey@gulfstream.com
Robin Brulotte	Transport Canada	Robin.brulotte@tc.gc.ca
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Marcelo de Lima Camargo	Embraer	macamargo@embraer.com.br
Loran Haworth	NASA	loran.a.haworth@nasa.gov
Bob Stoney	FAA	Robert.stoney@faa.gov
Clark Badie	**Honeywell**	Clark.badie@Honeywell.com

AREAS of ARAC CONSIDERATION

- None

Flight Test Harmonization Working Group
Topic 20
Return Landing Capability
Recommendation Report

Brian Lee
US Co-Chair, FTHWG

18 July, 2019

SCHEDULE

	1	2	3	4	5	6	7	8	9	10	11	12
	Wichita	Cologne	Seattle	Paris	Montreal	Toulouse	Melbourne	Cologne	Washington DC	Oslo	Savannah	Bordeaux/ Istres?
	June 17	Sept 17	Dec 17	March18	Jun-18	September 18	December 18	5-8March 19	10-14June 19	9-13 Sept 19	2-6 Dec 19	2-6 March 20
15 PIO					H			H	H	H*		
16 HQRM					H	H	H	H	H	H*		
18 GAR		P	P	*P		Report 20 Dec 2018						
20 Return to Land					P	P	P	*	Report 18 July 2019			
30 Yaw Control	H	H		H*	Report 1 June							
31 Vdf/Mdf	H		H	H		H	H	*				

Topic 20

(*) means voting on requirements and guidance; final report will follow

P = Aircraft Performance
H = Handling Qualities

30 month clock began 1 November, 2017;
Finishes 1 May, 2020

Executive Summary

- The current design standards intended to address immediate overweight return landing situations is 25.1001(a) and (b):
  - The need for jettison is based on a missed-approach climb gradient criterion only. Jettison reduces the emergency landing weight.
  - Additional hazards (e.g. stopping on runway) have been defined in issue papers
  - Jettisoning systems can be useful, but are only one aspect of mitigating emergency landings
- Airplane fleet experience shows that flight crews encounter a wide variety of events and failures that vary in urgency (i.e. not all failures require an immediate landing)
  - Operational procedures are available to enable flight crews to decide if they should return to the departure runway or divert to a more suitable runway.
- FTHWG is proposing new design standards in the regulation to include the hazards identified in the issue papers and to address other issues
  - Design for immediate return landings in some situations, but delayed and diversion landings should also be considered in the design for less urgent events and failures.

SUMMARY OF TASKING

Our task: Recommend harmonized regulatory basis and guidance for Return Landing Capability:

- The primary concern of this topic was airplane system failures (and other events) occurring soon after takeoff that could result in performance deficiencies during heavy weight return or diversion landings.
- The design requirements and operating procedures employed by airplane manufacturers must result in airplane designs with enough performance capability in these non-normal situations to allow safe landings.
- The application of various issue papers by U.S., Canadian, and Brazilian airworthiness authorities has resulted in an uneven playing field between different applicants for return landing capability approval. EASA has not initiated certification review items on this topic.

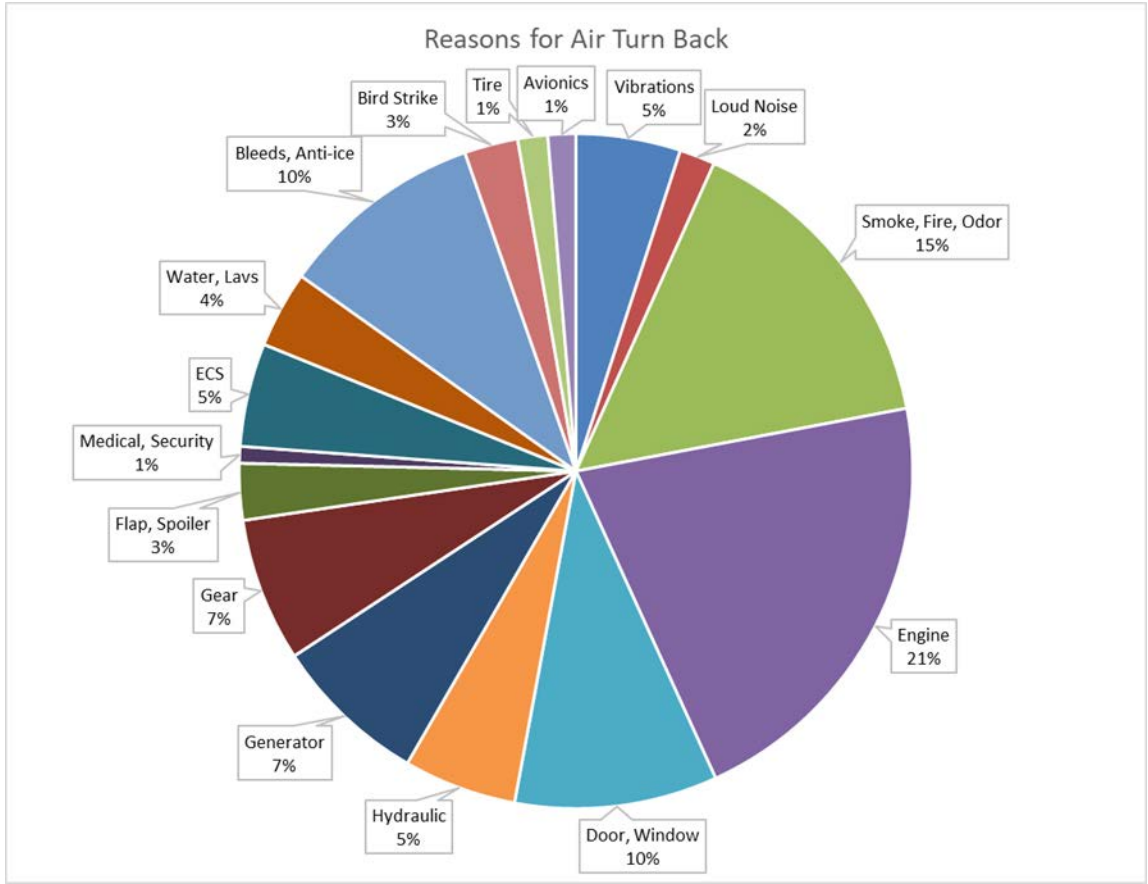
Background

- Immediate return and diversion landings occur when unexpected events cause the flight crew to change their planned landing runway. These events may involve airplane system failures or may be caused by other reasons such as security or medical emergencies.
- If the return or diversion happens soon after takeoff, the airplane may be landing overweight near the maximum takeoff weight (MTOW) with elevated speeds and critical landing performance.
- The existing regulations are based on missed-approach climb requirements, but rely on issue papers to address the other hazards of overweight return landing, including exceedance of:
    - Flap placard limit speeds
    - Landing runway length
    - Maximum brake energy
    - Maximum tire speed
- The existing guidance is not specific enough, resulting in unnecessary inconsistency in airplane design and the methods of showing of compliance across the industry to address these safety concerns.

Background cont'd

- The FTHWG identified and studied several return landing events with system failures that caused a deficiency in the landing performance of the airplane. These events highlighted concerns of:
  - Runway excursion due to system failures
  - System failures affecting landing performance that could lead to long-duration delays before landing
  - The need for non-normal procedures to mitigate immediate and overweight landings
- Immediate return or diversion landing risks can be mitigated effectively with operating procedures, but the urgency can be generally separated into:
  - Land as soon as possible
  - Land at the nearest suitable airport

Study of Fleet History



(1,700 turn back events due to failures on one airplane type)

Summary of Method and Deliberations

- 3 multi-day face-to-face meetings; 16 dedicated telecons; Many more informal conversations via e-mail
- Progression
  - The initial expectations of the working group were that enhancing and harmonizing guidance for § 25.1001 would be sufficient, but the scope of the discussions revealed that there were also issues with the existing regulations and their effectiveness in addressing the original intent of the rule.
  - During the working group discussions the FAA introduced additional concerns for a broader range of failure conditions, where the need to land is not urgent, but extended flight with these failures is not recommended or expected.
  - The manufacturer representatives shared examples of the highly-complex analyses methods, operational procedures, and AFM takeoff limitations being employed to design to and show compliance to the existing standards.
  - It was noted that simply installing a fuel jettisoning system did not solve all the return landing issues the and the burden of the certification efforts seen in the industry was not believed to have been anticipated in the original rulemaking or issue paper process.

Summary of Method and Deliberations cont'd

- The group made a decision to separate the existing missed-approach climb gradient requirements in §25.1001(a)(b) from the landing performance hazards referred to in AC 25-7D and related issue papers.
- The scope of the §25.1001(a)(b) design analyses for **immediate return landing missed-approach climb gradient** has been clarified to apply to non-icing conditions (as was understood to be the intent) and that it is acceptable to consider the use of emergency (non-normal) landing flaps and speeds if those procedures are applicable.
- The scope of the proposed §25.127(a) design analysis for **immediate landing to the departure runway** has been defined for situations with no failures affecting landing performance (e.g. smoke and fire) and for one-engine-inoperative landings on dry and wet runways. The analysis is limited to overweight landings (above maximum landing weight) and runways longer than 6,000 ft to avoid unnecessary AFM takeoff limitations.
- The scope of the proposed §25.127(b) design analysis **for diversion landings** was defined for *events or system failures that occur soon after takeoff, that cause a degraded state of flight control and adversely affect handling, but do not require immediate landing per procedure.* The analysis is limited to overweight landings and allows for diversions of 60 or 90 minutes depending on the probability of the failure.

Recommendation Summary

- Subpart E and B Regulations
  - Revise **§25.1001(a)(b)** (Fuel jettisoning system) to better define the referenced missed-approach climb gradient requirements of §25.119(a) and §25.121(d)(2)(i) and remove reference to landing
  - Add new **§25.127(a)(b)** (Immediate Return or Diversion Landing) to define both the immediate return landing requirements (that were previously addressed by issue paper) and the new diversion landing requirements being proposed
- Subpart E and B Guidance – AC 25-7D
  - Update **§25** to modify 25.1001(a)(b) guidance: Clarify the go-around requirements for the return landing design analysis and potential AFM takeoff weight limitations. Remove reference to other certification limits being addressed in §25.127(a)(b). Clarify that jettisoning system added for any operational need must comply to 25.1001(c) through (i)
  - Add new **§4** guidance for the new §25.127(a)(b) immediate return or diversion landing requirements which clarifies the type of events or failures to be considered and the assumptions for the design analyses
- Subpart E Guidance – AC 25-25
  - Update **§43** (Fuel jettisoning system) for updates 25.1001(a)(b) and delete the note referring to unreleased AC 25 XX that is superseded by AC 25-7D proposals

Consensus

- The FTHWG was able to complete the technical discussions needed to define a consensus or majority position on all the identified issues.
- There was one dissenting opinion from ANAC on the scope of the design analyses for immediate return landing 25.127(a), and diversion landings, 25.127(b). ANAC does not agree with the proposal to limit the analyses to weights above maximum landing weight (MLW), and to runways longer than 6,000 ft. for immediate return. Rationale: The safety risk represented by an airplane not being able to immediately return to the takeoff runway does not cease to exist at MLW.

  FTHWG majority position: The scope of the design analyses was intentionally focused on the stated safety concern of overweight landings, and these new criteria were defined to avoid making a rule that would primarily be met with operational takeoff limitations. Including weights below MLW in the design analyses would not necessarily result in design changes, such as adding or increasing fuel jettisoning capability. While there is a potential exposure to wet runway overrun, it is believed to be a relatively small number of operations, and the risk in these conditions has not resulted in a systemic return landing problem in the existing fleets.

Aviation Rulemaking Advisory Committee Task Notice
(ADD ANNOUNCEMENT DATE)

ACTION: Notice of a new task assignment for the Aviation Rulemaking Advisory Committee (ARAC).

SUMMARY: The FAA assigned ARAC two new tasks for transport category airplane designs. The first task is to provide recommendations regarding the use of an alert when ground spoilers are not armed for landing. The second task is to provide recommendations on the appropriate use of target airspeeds within the amber band of the airspeed display. There is a history of landing incidents and accidents where the automatic ground spoilers were not armed and there has been disagreements between airworthiness authorities on the appropriate use of target airspeeds within the amber band of the airspeed display. This notice informs the public of the new ARAC activity for the Avionics Systems Harmonization Working Group.

BACKGROUND: ARAC is governed by the Federal Advisory Committee Act (5 U.S.C., Appendix 2). The FAA established the ARAC to provide information, advice, and recommendations on aviation related issues that could result in rulemaking to the FAA Administrator, through the Associate Administrator of Aviation Safety.

For Task #1, there has been a history of landing incidents and accidents where the automatic ground spoilers were not armed, in addition to the subsequent reduction in wheel-braking effectiveness as well as drag reduction. This has been a significant contribution to runway overruns. One example occurred on April 26, 2011, when a Southwest Airlines Boeing 737-700 went off the end of the runway at Chicago Midway airport. The FAA is tasking the ARAC, through the Transport Airplane and Engine (TAE) Subcommittee, to advise on the use of an alert when ground spoilers are not armed for landing in light of these incidents and accidents.

For Task #2, there has been a disagreement among airworthiness authorities regarding the appropriate use of target airspeeds within the amber band of the airspeed display. This portion of the airspeed envelope is thought by some authorities to be inappropriate for any target airspeed. Other authorities accept the use of this portion of the airspeed envelope for unusual circumstances which require extra caution. The FAA is tasking the ARAC, through the TAE Subcommittee, to advise on the appropriate use of target airspeeds within the amber band of the airspeed display in light of these disagreements.

On September 19, 2019, the FAA assigned these tasks to ARAC, which ARAC designated to the TAE Subcommittee Avionics Systems Harmonization Working Group. Participants of the existing Avionics Systems Harmonization Working Group will serve as members of the working group only, reporting to ARAC through the TAE Subcommittee. The working group will provide advice and recommendations on the assigned task. The TAE Subcommittee will review and approve submission of the recommendation report to ARAC for consideration. ARAC must

deliberate and discuss the report prior to voting on whether to submit the recommendation report to the FAA.

THE TASK: The Avionics Systems Harmonization Working Group will provide advice and recommendations to the ARAC, through the TAE Subcommittee, in a report that addresses the following questions relative to new airplane designs. The report should provide rationale for the responses.

1. Do you recommend any changes to the existing alerting requirements to provide additional pilot alerts in cases where the airplane is prepared to land (for example, when an airplane drops below an appropriate height above the runway), but the automatic ground spoilers are not armed? The recommendations should allow enough flexibility to cope with potentially different aircraft designs.

2. Do you recommend any new or revised guidance material, or industry standards, to define an acceptable automatic ground spoiler alert?

3. After reviewing airworthiness, safety, cost, and other relevant factors including recent certification and fleet experience, are there any additional considerations that the FAA should take into account regarding avoidance of landing without ground spoilers armed?

4. Do you recommend any changes to the existing requirements to define appropriate use of target airspeeds within the amber band of the airspeed display?

5. Do you recommend any new or revised guidance material, or industry standards, to define appropriate use of target airspeeds within the amber band of the airspeed display?

6. After reviewing airworthiness, safety, cost, and other relevant factors including recent certification and fleet experience, are there any additional considerations that the FAA should take into account regarding appropriate use of target airspeeds within the amber band of the airspeed display?

7. Is coordination necessary with other harmonization working groups (e.g., Human Factors, Flight Test)? If yes, coordinate with that working group and report on that coordination.

8. Develop a report containing recommendations on the findings and results of the tasks explained above.
   a. The recommendation report should document both majority and dissenting positions on the findings and the rationale for each position.

   b. Any disagreements should be documented, including the rationale for each position and the reasons for the disagreement.

c. The report should contain initial qualitative and quantitative costs and benefits for recommended actions.

SCHEDULE: ARAC should submit the recommendation report to the FAA no later than 18 months from the first Avionics Systems Harmonization Working Group meeting following assignment of these tasks.

WORKING GROUP ACTIVITY: The working group must comply with the procedures adopted by the ARAC and as follows:

1. Conduct a review and analysis of the assigned tasks and any other related materials or documents.

2. Draft and submit a work plan for completion of the task, including the rationale supporting such a plan, for consideration by the TAE Subcommittee.

3. Provide a status report at each TAE Subcommittee meeting.

4. Draft and submit the recommendation report based on the review and analysis of the assigned tasks.

5. Present the recommendation report at the TAE Subcommittee meeting.

PARTICIPATION IN THE WORKING GROUP: The Avionics Systems Harmonization Working Group will be comprised of technical experts having an interest in the assigned task. A working group member need not be a member representative of ARAC. The FAA would like a wide range of stakeholders to ensure all aspects of the tasks are considered in development of the recommendations.

The provisions of the August 13, 2014, Office of Management and Budget guidance, "Revised Guidance on Appointment of Lobbyists to Federal Advisory Committees, Boards, and Commissions" (79 FR 47482), continues the ban on registered lobbyists participating on Agency Boards and Commissions if participating in their "individual capacity." The revised guidance now allows registered lobbyists to participate on Agency Boards and Commissions in a "representative capacity" for the "express purpose of providing a committee with the views of a nongovernmental entity, a recognizable group of persons or nongovernmental entities (an industry, sector, labor unions, or environmental groups, etc.) or state or local government." (For further information see Lobbying Disclosure Act of 1995 (LDA) as amended, 2 U.S.C 1603, 1604, and 1605.)

Confidential Information

All final work products submitted to the ARAC are public documents. Therefore, it should not contain any nonpublic proprietary, privileged, business, commercial, and other sensitive information (collectively, Confidential Information) that the working group members would not want to be publicly available. With respect to working groups, there may be instances where members will share Commercial Information within the working group for purposes of

completing an assigned tasked. Members must not disclose to any third party, or use for any purposes other than the assigned task, any and all Confidential Information disclosed to one party by the other party, without the prior written consent of the party whose Confidential information is being disclosed. All parties must treat the Confidential Information of the disclosing party as it would treat its own Confidential Information, but in no event shall it use less than a reasonable degree of care. If any Confidential Information is shared with the FAA representative on a working and/or task groups, it must be properly marked in accordance with the Office of Rulemaking Committee Manual, ARM-001-15.

The Secretary of Transportation determined the formation and use of the ARAC is necessary and in the public interest in connection with the performance of duties imposed on the FAA by law.

ARAC meetings are open to the public. However, working group meetings are not open to the public, except to the extent individuals with an interest and expertise are selected to participate. The FAA will make no public announcement of working group meetings.

FOR FURTHER INFORMATION CONTACT: Joe Jacobsen, Federal Aviation Administration, 2200 South 216th Street, Des Moines, Washington, 98198; telephone (206) 231-3158; email joe.jacobsen@faa.gov.