



AVIATION RULEMAKING ADVISORY COMMITTEE (ARAC) MEETING

March 17, 2022***1:00 PM – 4:00 PM

- Welcome and Introductions
 - Federal Advisory Committee Act (FACA) Statement
 - Ratification of Minutes
 - Status Reports
 - ARAC
 - Airman Certification System Working Group – Mr. David Oord
 - ❖ Call to Action Subgroup (Present Recommendation Report to ARAC: 6/2022)
 - ❖ Expanded tasks of Sport Pilot and Recreational Pilot certificates and all additional remaining category and class pilot certificates and ratings (Present Recommendation Report to ARAC: 6/2022)
 - Part 145 Working Group – Ms. Sarah McLeod
 - ❖ Final Report (Present Recommendation Report to ARAC: 6/2022)
 - Training Standardization Working Group – Mr. Brian Koester
 - Transport Airplane and Engine (TAE) Subcommittee – Mr. Keith Morgan
 - Flight Test Harmonization Working Group – Mr. Brian P. Lee
 - ❖ Phase 4/Topic 21 – Narrow Runway Operations (Present Recommendation Report to ARAC: 9/2022)
 - ❖ Phase 4/Topic 16 – Failure Assessment Methodology & Evaluation (FAME) (HQRM) (Present Recommendation Report to ARAC: TBD)
 - ❖ Phase 4/Topic 32 – TALPA (Present Recommendation Report to ARAC: 9/2022)
 - ❖ Phase 4/Topic 33 – Landing Distance on Dry Runway (Present Recommendation Report to ARAC: 9/2022)
 - Transport Airplane Metallic and Composite Structures Working Group – Mr. Doug Jury
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- ❖ Repeat Inspections and Crack Interaction (Present Recommendation Report to ARAC: 6/2022)
- Ice Crystals Icing Working Group (Present Recommendation Report to ARAC: 9/2022 – Ms. Melissa Bravin and Mr. Allan van de Wall)
- Avionics System Harmonization Working Group – Mr. Clark Badie
 - ❖ Alerts for New Airplane Designs (Present Recommendation Report to ARAC: 12/2022)
- Any Other Business
 - FAA update on regulatory activities
 - Remaining Fiscal Year 2022 Meeting Dates
 - Thursday, June 16, 2022
 - Thursday, September 8, 2022

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 - DRAFT

MEETING DATE: December 9, 2021

MEETING TIME: 1:00 PM EDT

LOCATION: The Aviation Rulemaking Advisory Committee (ARAC) held a “virtual” meeting via Zoom.

PUBLIC ANNOUNCEMENT: The Federal Aviation Administration (FAA) provided notice to the public of this ARAC meeting in a *Federal Register* notice published on November 22, 2021 (86 FR 66384).

ATTENDEES: **Committee Members**

David Oord	Wisk, <i>ARAC Chair and</i> Airman Certification Systems Working Group Chair
Justin Barkowski	American Association of Airport Executives (AAAE)
Michelle Betcher	Airline Dispatchers Federation (ADF)
Doug Carr	National Business Aviation Association (NBAA)
Ambrose Clay	National Organization to Insure a Sound Controlled Environment (N.O.I.S.E.)
Chris Cooper	Aircraft Owners and Pilots Association (AOPA)
Walter Desrosier	General Aviation Manufacturers Association (GAMA)
Gail Dunham	National Air Disaster Alliance Foundation (NADAF)
Stéphane Flori	Aerospace & Defense Industries Association of Europe (ASD)
Daniel Friedenzohn	Embry-Riddle Aeronautical University (ERAU)
Paul Hudson	Flyers Rights
Randy Kenagy	Air Line Pilots Association (ALPA)
Sarah MacLeod	Aeronautical Repair Station Association (ARSA)
Justin Madden	Aircraft Mechanics Fraternal Association (AMFA)
Chris Martino	Helicopter Association International (HAI)
Keith Morgan	Pratt & Whitney, Chair of the Transport Aircraft and Engine (TAE) Subcommittee

Leslie Riegle	Aerospace Industries Association (AIA)
Larry Rooney	Coalition of Airline Pilots Association (CAPA)
Yvette A. Rose	Cargo Airline Association (CAA)
Steven Udvar-Hazy	Aviation Capital Group
Bill Whyte	Regional Airline Association (RAA)
Christopher Witkowski	Association of Flight Attendants
Attendees	
Ludovic Aron	European Aviation Safety Agency (EASA)
Clark Badie	Federal Express (FedEx)
Melissa Bravin	Boeing
Ellen Birmingham	United
Maryanne DeMarco	CAPA
Doug Jury	Delta Air Lines
Brian Koester	NBAA
Brian Lee	Boeing
Abbey Salvon	Boeing
Dan Shapiro	Public Citizen
Chris Worden	Public Citizen
FAA	
Angela Anderson	Office of Rulemaking (ARM), Alternate Designated Federal Officer (DFO)
Chris Bailey	ARM
Kathleen Bradshaw	Aircraft Certification Service (AIR)
Troy Brown	AIR
Jose Castedo	Office of Aviation Policy and Planning (APO)
Paul Cloutier	Flight Standards Service (AFS)
Thuy Cooper	ARM
Jim Crotty	ARM
Mary Margaret Daniel	ARM

Brian Davis	AFS
Richard Doan	Office of Chief Counsel (AGC)
Thea Dickerman	ARM
Aliah Duckett	ARM
Crystal Essiaw	Office of Communications (AOC)
Sabrina Jawed	AGC
Colleen Kilday	Office of Quality, Integration and Executive Services (AQS)
Daniel Leach	APO
Nellie Lew	APO
Kawehi Lum	AFS
Kimberly Luu	AIR
Daron Malmborg	AFS
Suzanne Masterson	AIR
Natalie Mitchell-Funderburk	ARM
Mallory Naill	AIR
Keiran O'Farrell	AFS
Robert Reckert	AFS
Puja Sardana	The Regulatory Group/FAA contractor
Tim Shaver	AFS
Walter Sippel	AIR
Todd Steiner	APO
Alan Strom	AIR

Welcome and Introduction

Mr. David Oord, ARAC Chair, called the meeting to order at 1:02 pm. Ms. Angela Anderson, Alternate Designated Federal Officer (DFO), reviewed features of zoom, noted that the meeting was being recorded, and asked that participants who dialed-in

using a phone number to identify themselves through Zoom or by emailing the ARAC (9-AWA-ARAC@faa.gov) to record their attendance.

Ms. Anderson read the required FACA statement (Title 5, United States Code (5 U.S.C.); Appendix 2 (2007)). She stated that members of the public may address ARAC with the permission of the Chair. She thanked Ms. Yvette Rose, former ARAC chair, and introduced the new Chair, Mr. Oord.

Mr. Oord introduced himself and stated that he is excited to be in the role of ARAC Chair. He confirmed ARAC members in attendance based on the participant list provided by Zoom.

Ratification of Minutes

Mr. Oord asked for a motion to accept the minutes from the September 16, 2021¹, ARAC Meeting. Mr. Larry Rooney motioned to accept the minutes, and Ms. Yvette Rose seconded the motion. ARAC voted to ratify the minutes with no objections.

Status Reports

A copy of the December 9, 2021, meeting packet, which includes the presentations, can be found at:

https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information/documentID/5284.

Airman Certification Systems Working Group (ACSWG)

Mr. Oord, ACSWG Chair, provided the working group's status report. The update included an overview of membership, a summary of taskings, a review of the schedule, the status of taskings, and areas for ARAC consideration.

Mr. Oord noted that the ACSWG is on track to submit its final report no later than June 2022. He reminded members that FAA and ARAC granted the working group an extension to submit the final report at the September 2021 meeting.

Mr. Oord said the working group canceled its December 7, 2021, meeting due to uncertainties around how the FAA will publish the ACS standards. He noted the FAA is working on a path forward to publish the standards. He also stated that Robert Reckert from the FAA would provide an update at the ARAC meeting. Mr. Oord noted that the working group should resume meeting in January 2022.

Mr. Oord provided an update on the group taskings and progress, including the plan for the "Call to Action" final report. He described the workflow in publishing ACS standards

¹ The September 16, 2021, meeting minutes can be found at:
https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information/documentID/5284.

and recommendations. He noted that publication of these documents by the FAA is important for the group's work to move forward.

In response to ARAC's request, Mr. Oord introduced Mr. Robert Reckert (FAA Office of Flight Standards Service) to give a status update on the FAA's response to the ACSWG recommendations. Mr. Reckert provided the following status.

- The FAA has published six ACS documents:
 - Airline Transport Pilot and Type Rating – Airplane
 - Commercial Pilot - Airplane–
 - Commercial Pilot – Military Competence
 - Instrument Rating – Airplane
 - Private Pilot – Airplane
 - Remote Pilot; Small Unmanned Aircraft

- The FAA intends to publish the Mechanic ACS in conjunction with the part 147 rulemaking.

- The FAA is in receipt of three draft ACS standards:
 - Commercial Pilot – Helicopter
 - Instrument Rating – Helicopter
 - Private Pilot – Helicopter

Mr. Reckert stated that the FAA intends to publish the Helicopter ACS standards through the Incorporation by Reference (IBR) process. This would ensure that the FAA complies with the Administrative Procedures Act for the required portions of the ACS standards. He noted that the FAA would IBR the standards into 14 CFR parts 61, 63, and 65.

Mr. Oord asked for clarity on the timeline. Mr. Reckert noted that the FAA recognizes the need to publish the ACS documents, so the agency is working to get the resources in place. While unable to give an exact timeline, he stated that he hopes that industry and FAA will work together to develop solutions. Mr. Oord agreed and said he would encourage the FAA to engage the industry beyond the ACS Working Group.

In response to a question on whether the Part 147 rulemaking would be delayed by the IBR process, Mr. Reckert indicated that it is not the intent. Mr. Reckert asked that ARAC send any IBR-related questions to FAA so that AFS can prepare an appropriate answer.

Part 145 Working Group

Ms. MacLeod, the Part 145 Working Group Chair, provided the working group's status report. The update included an overview of membership, a summary of taskings, the status of taskings, and areas for ARAC consideration. Ms. MacLeod noted that the working group received an extension to submit its final report at the June 2022 meeting.

Ms. Rose asked for clarity on the working group's proposal to apply appropriate weight for Direct Flight Element. Ms. MacLeod noted that this was addressed in the preliminary report and that different values and strategies should be assessed based on risk.

Training Standardization Working Group (TSWG)

Mr. Brian Koester, TSWG Chair, provided the working group's status report. The update included an overview of membership, a summary of taskings, a review of the schedule, the status of tasking, and areas for ARAC consideration.

He stated that the working group's recommendations are based on guidance and other available sources. Mr. Koester noted that the working group has completed the following two taskings, which he presented at the June 2021 ARAC meeting.

- Recommend a detailed master schedule for the development of part 135 standardized curricula for each aircraft or series of aircraft
- Develop and recommend a standardized curriculum to qualify training center instructors and evaluators (check pilots) to provide part 135 training, testing, and checking.

Mr. Koester reviewed the schedule and the progress of working groups to meet each deadline. He described a proposed approach for engaging the public before the working group presents its final recommendation report to ARAC for deliberation. Under this approach, the working group would send its draft curriculum to the FAA for publication in the Federal Register. Mr. Koester stated the working group would adjudicate any public comments with the intent to make any final changes to the draft curriculum prior to submission to ARAC for deliberation.

Ms. Rose asked for clarity on the process that Mr. Koester proposed, as it is her understanding that comments are only adjudicated by the FAA. Mr. Koester noted that he would like ARAC to have the final say to improve transparency and that it is beneficial to the working group to review comments.

Mr. Oord asked if the work between the working group and the FAA on adjudicating comments would be published. Mr. Koester stated he did not believe the intent was to publish anything as part of the adjudication process. Ms. MacLeod reminded members that ARAC is a vehicle to represent the public but it cannot adjudicate comments or have the final say in rulemaking.

Mr. Doug Carr asked if realigning the steps in the existing process could help ARAC recommendations be implemented quicker in the future. Mr. Koester stated that he did not believe the process would change the final product, and he is happy to collaborate in the best way possible within the limitations of ARAC.

Mr. Oord asked if there were action teams created for every make and model. Mr. Koester stated that there is a schedule to address various aircrafts in the

recommendations. He noted that research was completed based on the quantity of aircraft type at part 135 training events.

Transport Airplane and Engine (TAE) Subcommittee

Mr. Keith Morgan, the TAE Subcommittee Chair, provided the TAE Subcommittee status report update. Mr. Morgan stated that there are currently four active TAE Subcommittee working groups: Flight Test Harmonization (FTH), Transport Airplane Metallic and Composite Structure (TAMCS), Ice Crystal Icing (ICI), and Avionic Systems Harmonization (ASH).

Mr. Morgan reviewed the schedule of meetings and deliverables. He noted that meetings are continuing to be primarily virtual and stated that the TAMCS report may be delayed.

Flight Test Harmonization Working Group (FTHWG)

Mr. Morgan stated that membership is stable. He described a breakdown of tasks and how the work is being delegated. He noted that the current focus is on phase 4, low energy alerting. He reviewed the schedule, stated that the status of the tasking is on track, and noted that the working group does not need anything from ARAC at this time.

Mr. Morgan mentioned some struggles due to COVID-19 and the virtual environment and described a look ahead at the remaining taskings. He stated the working group's work will require significant participation from authorities and subject matter experts.

Transport Aircraft Metallic and Composite Structures Working Group (TAMCSWG)

Mr. Morgan reviewed the working group's membership, tasking, and schedule. He said that the working group does not have full consensus on the topic of Crack Interaction as it relates to harmonization with EASA rule language, so they may need a 3-month extension to find more common ground.

Ice Crystals Icing Working Group (ICIWG)

Mr. Morgan stated that the ICIWG membership nor the status of taskings have changed. He reviewed the schedule, which includes plans to submit an interim report in July 2022 and a final report December 2023. He noted that the working group has regular meetings and is making good progress. Mr. Morgan stated that there were no areas for ARAC consideration at this time.

Avionics System Harmonization Working Group (ASHWG)

Mr. Morgan summarized the ASHWG's work plan and the questions they hope to answer in their tasking. He noted that the working group meets regularly, and they hope to have their work completed by the last quarter of 2022. He stated that there were no areas for ARAC consideration at this time.

Other Business and FAA Updates

Ex Parté Briefing

In response to an ARAC request for a briefing on ex parté communications, Ms. Anderson introduced Ms. Sabrina Jawed, FAA Office of Chief Counsel, to provide the briefing.

Ms. Jawed offered the following definition of ex parté communication in informal rulemaking:

- a. written or oral communication;
- b. regarding the substance of an anticipated or ongoing rulemaking;
- c. between the agency personnel [and/or decision makers] and interested persons; and
- d. that is not placed in the rulemaking docket at the time they occur. (ACUS Recommendation 2014-4)

Ms. Jawed stated that ex parté communications can occur pre-NPRM, during the comment period, and post-comment period. She noted that ex parté communications are discouraged more from a policy perspective than from a legal perspective. Ms. Jawed said that, when the agency is issuing a rule, they want to gather data to make the best, most informed decision. She described the following FAA's "Rules of the Road" regarding ex parté communication.

- Conduct outreach and provide access equitably to stakeholder groups and provide robust opportunities for discussion early in, and throughout, the rulemaking process.
- Ensure that outreach includes providing adequate opportunities for stakeholders who may not have access to extensive legal and lobbying support.
- Tools to support public engagement
- Aviation rulemaking committees and aerospace rulemaking committees
- Public meetings
- Comment period

Ms. Jawed described parts of the rulemaking process that allows the public to ask questions to the agency through comments. She also summarized 49 CFR 5.5, which discusses the public contacts in informal rulemaking.

Mr. Carr thanked Ms. Jawed and asked what the agency is doing to document appropriate communication from the industry. He said that ex parté communication does not prevent communication; it prevents the documentation of that communication. Mr. Carr asked how the FAA can be further engaged with the industry to document important concerns. Ms. Jawed acknowledged Mr. Carr's concerns and noted that the best time for

stakeholder input would be at the beginning stages of or before the rulemaking process. She suggested consulting with the appropriate FAA program office.

Mr. Justin Madden suggested that ex parte communication hinders the standardization of FAA and industry training simultaneously. Ms. Jawed noted that the agency weighs factors such as industry suggestions, congressional timelines, and research required in their decision making.

Ms. Gail Dunham requested a copy of Ms. Jawed's presentation. The FAA confirmed it would email the presentation to ARAC members. Also, Mr. Oord noted that the presentation would be documented in the minutes.

Ms. MacLeod stated that if the agency makes a decision on rulemaking based on meetings with specific interested parties, the decision is not based on overall public interest. She emphasized that information in the docket is not ex parte. She stated that she believes the biggest influence on rulemaking is the media and congress. Ms. Jawed noted that the agency works towards gathering information in a fair and equitable manner, and if anyone has ideas on better methods to consider under due process to please suggest them.

Ms. Anderson thanked Ms. Jawed and asked members to send any follow up questions to the FAA ARAC email address.

§ 65.101 Repairman Certificate Portability Working Group Update

Ms. Anderson provided a status of the § 65.101 Repairman Certificate Portability Working Group. She stated that the memo to appoint members is in internal coordination. She reminded members that the Deputy Secretary must approve the appointment of subcommittee and working group members who are not current ARAC members.

Regulatory Updates

Ms. Anderson stated the FAA has published three rulemakings since the last ARAC meeting:

- Type Rating for Single Engine Airplanes Final Rule published November 9, 2021, with an effective date of December 9, 2021.
- Flight Attendant Flight Duty and Rest NPRM published November 2, 2021 with a 60-day comment period that closes January 3, 2022.
- Balloon Medical NPRM published November 18, 2021, with a 60-day comment period that closes January 18, 2022.

ARAC Updates

Ms. Anderson noted that the current ARAC charter expires on September 14, 2022, and the agency has initiated the process for renewal to ensure approval before the charter

expires. She noted that the 2-year term for 21 members expired in October 2021, and the FAA intends to issue a notice to solicit nominations in early 2022. Ms. Anderson stated that current members with expired terms must respond to the solicitation notice if they wish to be considered for reappointment.

Ms. Anderson provided the meeting schedule for fiscal year 2022.

- Thursday, March 17, 2022
- Thursday, June 16, 2022
- Thursday, September 8, 2022

She stated the meeting packet is located on the FAA's website.

Ms. Dunham asked if any current ARAC working groups are looking for volunteers for new membership. Ms. Thuy Cooper stated that there are no new taskings for ARAC at this time.

Justin Madden suggested that the agency host a joint FAA-industry training session on ex parte communications. He suggested that the meeting be a public forum to include minutes published for future reference

Adjournment

Mr. Oord adjourned the meeting at 3:03 pm.



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

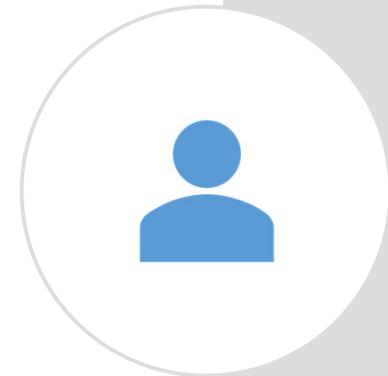
David Oord

Working Group Chair

February 22, 2022

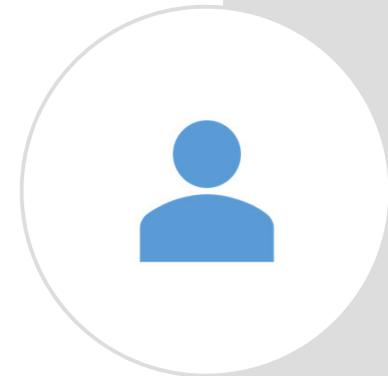
MEMBERS of ACSWG - INDUSTRY

- David Oord, Wisk
- Paul Alp, Jenner & Block
- Cindy Brickner, SSA
- Paul Cairns, ERAU
- Kevin Comstock, ALPA
- Chris Cooper, AOPA
- Mariellen Couppee, Independent
- Eric Crump, Polk State College
- David Dagenais, FSCJ
- Maryanne DeMarco, CAPA
- Anna Dietrich, CAMI
- Rick Durden, Independent
- Megan Eisenstein, NATA
- David Earl, Flight Safety
- Tom Gunnarson, Wisk
- 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 McWhinney, King Schools
- Crystal Maguire, ATEC
- Nick Mayhew, L3
- Jimmy Rollison, Independent
- Mary Schu, Mary Schu Aviation
- Roger Sharp, Independent
- Jackie Spanitz, ASA
- Burt Stevens, CFI Care
- 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
- 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
- Kieran O'Farrell
- Richard Orentzel
- Katie Patrick
- Andrew Pierce
- Robert Reckert
- Jason Smith
- Shelly Waddell Smith
- Jeff Spangler
- Robert Terry
- Matt Waldrop
- Stephanie Williams
- Bill Witzig
- Jimmy Wynne
- Christopher Yanni



SUMMARY OF TASKING

- Provide recommendations regarding standards, training guidance, test management, and reference materials for airman certification purposes.
- Continuation of Pilot, 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
- Final recommendation reports no later than June 2022



SCHEDULE

- 2021 Meetings –
 - March 16 (virtual meeting)
 - June 15 (virtual meeting)
 - September 21 (virtual meeting)
 - December 7 (virtual meeting)
- 2022 Meetings –
 - February 17 (virtual meeting)
 - Remainder to be scheduled



STATUS OF TASKING

- Continued progress on Standards, Guidance, and Test Management
 - Refinement and improvement of existing Standards
- Call to Action (CtA) Subgroup
 - ACS Mapping and Gap Analysis
 - ACS/PTS success rate comparison
 - Data Collection/Analysis

AREAS of ARAC CONSIDERATION

- **Path forward for new Standards –**
 - Incorporation by Reference (IBR)
 - Role for ACS WG and Industry

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

Sarah MacLeod and Ric Peri

Working Group Chairs

March 2022 Meeting

Members of the Part 145 Working Group (Unchanged)

Paul Cloutier, Working Group Representative	FAA—AFS, Repair Station Branch
Brent Hart, Analyst	FAA, ARM
Thuy Cooper, Analyst	FAA, ARM
Justin Smith, Director of Operations	Quality Aviation Instruments, Inc., D/B/A QAI
Craig Fabian, Regulatory Compliance Leader	GE Engines
Sarah MacLeod, Executive Director	Aeronautical Repair Station Association
John Fox, Accountable Manager	United Airlines, Inc.
Joe Sambiasi, Director Airworthiness & Maintenance	General Aviation Manufacturers Association
Jeff Cornell, Senior Director/Quality	Aviation Technical Services
Justin Madden, Legislative Affairs Director	Aircraft Mechanics Fraternal Association (AFMA)
Jeremy Bryck, Senior Director 145 Maintenance	Air Methods Corporation
John Fox, Accountable Manager Senior Manager, Quality Control	United Airlines, Inc.

Members of the Part 145 Working Group (Unchanged)

Richard Macklosky, Manager, Regulatory Management
Civil Aviation

Jeff Eagle, Senior Regulatory Compliance Specialist

Eric M. Monte., Principal Quality Assurance Engineer

David Stapes, Manager, Regulatory Compliance

Richard (Ric) Peri, Vice President Government & Industry
Affairs

Sam Porter, Senior Quality Manager

Stephanie Branscomb, Director of Operations
Quality Manager

Stephen R. Wysong, President

Steven Brewer, Manager Structure Engineering

Bill Hanf, Owner

Samuel Edwards, Administrative Manager

Jeffrey Orth, Senior Regulatory & Compliance Specialist

United Technologies Corporation

United Technologies Corporation/Pratt &
Whitney

Rockwell Collins

Delta TechOps

Aircraft Electronics Association

Sikorsky—A Lockheed Martin Company

Wysong Enterprise

Wysong Enterprise

Kalitta Air

Green Mountain Avionics

Boeing Commercial Airplanes

Boeing Global Services

Recognized Observers to the Part 145 Working Group (Unchanged)

Brian Koester, Manager, Flight Operations & Regulation

Carol Giles, Aircraft Maintenance and Systems Technology Committee Liaison

Art Smith, Vice President-Chief Quality Officer

Steve Douglas, Vice President Certification, Compliance & Safety

Paul Hawthorne, Director Global Support Quality

Gary Daniels, FAA DAR-T DMS Designee

National Business Aircraft Association

National Air Transportation Association

AAR Corporation

Oliver Wyman – CAVOK

Moog

Independent consultant

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~~
- The Final Report is in process. It will recommend improvements to guidance documents and will include an Acceptable Means of Compliance document which will—
 - ✓ Annotate the applicable regulations, laws or executive orders.
 - ✓ Be 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, evaluation, and oversight is performance-based
 - ✓ Account for oversight of repair stations vis-à-vis amount, type, scope and complexity of the certificate holders' work and its size.
 - ✓ Align with regulations, laws and executive orders.

SCHEDULE

- Preliminary report was submitted 24 months from the first meeting of the Part 145 Working Group (approved by ARAC December 2020).
- Final report is to be submitted no later than 12 months after the preliminary report is forwarded to the FAA by ARAC.
- Task group of FAA representative, Co-Chairs, and interested industry representatives have *daily* meetings to—
 - ✓ Draft final report with recommendations, and
 - ✓ Work on AMC

STATUS OF TASKING

- ARAC Working Group agreed upon structure for AMC:
 - **Numbering**—145-1-A-X-X, will be followed by the regulation copied verbatim from 14 CFR.
 - **Scope**—the legal authority or intent expressed by the plain language.
 - **Acceptable Means of Compliance**—the parameters and expectations of the showing and finding of compliance.
 - **Guidance Material**—FAA unique information needed to oversee performance-based requirements that considered size, complexity, and inherent risk to the NAS (as required by Congress). It will not repeat what is contained in the Scope, Acceptable Means of Compliance or Additional Information.
 - **Related Regulations**—regulations directly and indirectly related to the Acceptable Means of Compliance with a cross-reference to the applicable section or paragraph of 14 CFR part 145.
 - **Additional Information**—legal opinions or interpretations and other historical references that explain or illustrate the verbiage in Scope, Acceptable Means of Compliance, and Guidance Material.

STATUS OF TASKING

- The ARAC Working Group's Final Report with its AMC will be voluminous.
 - The Final Report will provide recommendations on how the agency can—
 - Use the information contained in the Preliminary and Final Reports to adjust its current certification and oversight system.
 - Retain the history of its control of repair station activities to aid consistency and standardization in interpretation and application.
 - AMC document will—
 - Focus on the performance standards required by the plain language of the regulation to support the recommended elimination of proscriptive guidance and application.
 - Contain all regulatory compliance information.
 - Clearly distinguish the minimum standards contained in the regulation, historical meaning and intent, and application from best practices.

STATUS OF TASKING

- To ensure all information was gathered in one place, the AMC will be over 300 pages.
- The AMC is being structured so the agency can disseminate condensed versions of the information to different stakeholders without losing the history, purpose, intent, and performance standard upon which compliance with 14 CFR part 145 must be based.

WHY IS THIS SO IMPORTANT?

- Timeline of the history and application of 14 CFR part 145 establishes that information from the original rendition is still valid and can be relied upon to ensure continuity of the basic safety elements inherent to repair stations. The basis for control of repair station activities cannot be lost again.

Maintenance Regulatory Timeline

1920s to 1930s – Airmail Act/Air Commerce Act (Aero Bulletins) initial control of civil aviation design, production, operations, and maintenance.

1930s to 1960s – Production and maintenance regulations increase with repair station regulations introduced as CAR part 52 (20 Aug. 1938).

1962 – CAR to FAR recodification (13 Jul 1962) reportedly did not make any “substantive” changes to the meaning and application of aviation safety regulations; research does not support that assumption. (14 CFR part 145, amendment 1).

2001 – Major reorganization of 14 CFR part 145 (6 Aug 2001) (14 CFR part 145; amendment 27).

2015 – Flight Standards transition to SAS.

2022 – Part 145 Working Group Preliminary Report (current 14 CFR part 145 is at amendment 31).

AREAS for ARAC CONSIDERATION

- The WG's scrutiny has revealed mismatches and inconsistencies in regulatory language.
- The agency's recodification of 14 CFR part 145 in 1962 did not introduce a new rule, rather it was the continuation of 30-year-old regulatory application. Mismatches with the current rule will be explained in the Final Report with recommendations on actions, such as a legal opinion or rulemaking.
- The refusal of the Office of Chief Counsel to assign a knowledgeable attorney to provide guidance has created additional unanticipated work.
- The Working Group Chairs are concerned that a polished final report with recommendations and the AMC cannot be achieved by May 13 and request the ARAC petition the agency for another six months of additional time.
- The FAA has requested that the Working Group provide its recommendations on additional fixed locations, which will be prioritized and could be provided in May 2022 for ARAC consideration during its June 2022 meeting.

Training Standardization Working Group Status Report to the Aviation Rulemaking Advisory Committee



March 17, 2022

MEMBERS of Training Standardization Working Group

Jon	Dodd	Coalition of Airline Pilots Associations
Steve	Hall	FlightSafety International
Aimee	Hein	CAE, Inc.
Jens	Hennig	General Aviation Manufacturers Association
Brian	Koester*	National Business Aviation Association
Doug	Carr	National Business Aviation Association
Todd	Lisak	Air Line Pilots Association
Steve	Maloney	Sun Air Jets
Allan	Mann	Wheels Up, LLC
John	McGraw	National Air Transportation Association
Brian	Neuhoff	Airbus Helicopters
Janine	Schwahn	Summit Aviation, Inc.
Annamarie	Stasi	Northwell
Daniel	Von Bargaen	Jet Aviation Flight Services, Inc.
Mike	Walton	Textron

FAA Partners
Josh Tarkington
Paul Preidecker
Kevin Hancock
Shannon Salinsky
Mariellen Coupee

* Training Standardization Working Group Chair

SUMMARY OF TASKING

The Training Standardization Working Group (TSWG) will provide advice and recommendations to the ARAC on the most effective ways to standardize curricula provided by training centers. The group is tasked with the following:

- ✓ Recommend a detailed master schedule for the development of part 135 standardized curricula for each aircraft or series of aircraft;
- ✓ Develop and recommend a standardized curriculum to qualify training center instructors and evaluators (check pilots) to provide part 135 training, testing, and checking;
- 3) Develop and recommend part 135 standardized curricula for each aircraft or series of aircraft, including the maneuvers, procedures, and functions to be performed during training and checking;
- 4) Recommend continuous improvements to each part 135 standardized curriculum for a specific aircraft or series of aircraft; and
- 5) Develop reports containing recommendations for standardized curricula and results of the tasks listed here. The group should review any relevant materials to assist in achieving their objective, including FAA Advisory Circular 142-1,2 Standardized Curricula Delivered by Part 142 Training Centers.

SCHEDULE

- ✓ June 2021 – Deadline for submitting initial recommendation report including the proposed master schedule for standardized curriculum development to ARAC. The deadline to submit the interim report to the FAA is June 30, 2021.
- ✓ December 2021 – Deadline for submitting the addendum recommendation report, including a standardized curriculum to qualify training center instructors and check pilots to provide part 135 training, testing, and checking to ARAC. The deadline to submit the interim report to the FAA is December 31, 2021.
- The Training Standardization Working Group may submit ad hoc recommendation reports, including continuous improvements, to standardized curricula, via ARAC to the FAA for review and consideration at any time.
- The voting members of the TSWG meet on the second Tuesday of the month. (Next meeting is April 12th)
- Action Teams meet every Thursday. (Next meeting is March 24th)

STATUS OF TASKING

- Tasking 1 (schedule) and 2 (instructor curriculum) are complete.
 - The schedule and instructor curriculum were made available for public comment, with no substantive feedback
- Anticipate first curriculum recommendation by the end of the year

TSWG G-V Action Team Tasks:



Action Team:	Team Lead	Participants:
G-V	Preidecker	Ruthenbeck, Neubert, Djordjevic, Mika, Emmert, Goldman, Emig, Pangalangan, Hancock, Wolfe, Maas

1. Conduct a review and analysis of the assigned tasks and any other related materials or documents.
 - √ Review TNA
 - √ Review FSBR
 - Review relevant OpSpecs/MELs
 - Review existing 142 training programs
2. Based on the templates and best practices established by the TSWG Develop and recommend the following curricula, including planned hours, for each aircraft fleet:
 - Initial New Hire,
 - Standard Recurrent,
 - Requalification,
 - Upgrade Recurrent, and
 - Scenario Enhanced Recurrent Training.
3. Each Type Specific Action Team will develop the following based on the templates and best practices established by the TSWG, to be used throughout the standardized training program and during normal operations:
 - SOPs
 - Call outs
4. Draft and submit the recommendation report based on the assigned tasks.
5. Present the recommendation report at the TSWG meeting.
6. Provide continuous improvement for the standardized curriculum based on recommendations from the TSWG.

AREAS of ARAC CONSIDERATION

- The ISD action team
 - Completed their training needs analysis
 - Recently completed high level guidance on SOPs and call outs to maximize standardization across fleets
- Continuous Improvement Action Team finished developing a framework document to:
 - Determine data-driven methods and element criteria to identify program effectiveness to make recommendations for continuous improvement
 - Identify methods for ongoing SC maintenance and development (who, how, when/triggers for revisions)
- Reviewing OpSpecs requires creating standardized curriculum segments that will be optional for some carriers.

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

Keith R. Morgan
Subcommittee Chair

17 March 2022

Members of the Transport Aircraft and Engines Subcommittee

Pratt & Whitney

ALPA

A4A

ASD

Airbus

Boeing

GAMA

AIA

Bombardier

NADA/F

Embraer

SRCA

TAE Meeting Schedule

- 2022 Meetings
 - January 25, 2022
 - April 26, 2022
 - July 26, 2022
 - Oct. 25, 2022

Active Working Groups

- Flight Test Harmonization
- Transport Aircraft Metallic and Composite Structures
- Engine Ice Crystal Icing
- Avionic Systems Harmonization

Look Ahead Report Submittal Schedule to ARAC

- June 2022
 - TAMCSWG Crack Interaction
- September 2022
 - EICIWG Interim report
 - FTHWG TALPA
 - FTHWG Dry Runway
- December 2022
 - ASHWG Ground Spoiler Alerting

Flight Test Harmonization Working Group
Status Report to the
Transport Aircraft and Engines Subcommittee
of the
Aviation Rulemaking Advisory Committee

Brian P. Lee, Boeing
Laurent Capra, Airbus
Working Group Co-Chairs

26 January, 2022

MEMBERS of Flight Test Harmonization Working Group Phase 4

Authorities	OEM's			Observers
FAA Bob Stoney Troy Brown (sponsor)	Airbus Philippe Genissel + SME's	Embraer Murilo Ribeiro + SME's	ATR Matthieu Ollivier Jean-Pierre Marre +SME's	JCAB (Japan) Shinsuke Yamauchi Teruke Koike
				CAAI (Israel) Yshmael Bettoun
EASA Matthias Schmidt	Boeing Matt Muehlhausen + SME's	Gulfstream Mike Watson +SME's	Airbus Canada Joel Boudreault +SME's	Norwegian Airlines John Lande
				Operations SME David Anvid
Transport Canada Lee Fasken	Bombardier Tony Spinelli +SME's	Textron Kurt Laurie +SME's	DeHavilland Canada Eric Herrmann +SME's	Centre d'Essais en Vol Francois MEIGNIEN
				Operators
ANAC (Brazil) Marcos Carvalho	Dassault Philippe Eichel +SME's			ALPA John Cinnamon Josh Larson

STATUS OF TASKING

- Tasking for Phase 4 Received in December, 2020
- Planning for the 6 tasks is complete
- Work is under way on 4 topics:
 - TALPA
 - Narrow Runway Certification
 - Dry Runway Braking
 - FAME (how to deal with failures affecting Handling Qualities)
- **ASHWG: Low Energy Alerting**
 - There will be fall-out from the ASHWG Recommendation
 - FTHWG Phase 2 recommended
 - Low Energy Alerting for all phases of flight only for neutral-stability configurations
 - ASHWG recommends
 - Low Energy Alerting only for close-to-ground for all configurations
 - We have put this on our calendar to be worked in Phase 4

Phase 4 FTHWG Topic Technical Status

- Topic #16 Failure Assessment Methodology & Evaluation (FAME)
 - Progress has been challenged by Covid
 - Detailed topic planning is complete and agreed
 - FAA/Boeing leaders have plan in place for in-person kickoff in March 2022 with required specialists (in question)
 - Additional re-planning under way if March meeting goes virtual (Decision gate is 1 February, 2022)
- Topic # 21 Narrow runway operations
 - Team has converged on the definition a “baseline” runway
 - Now debating appropriate “regulatory hook” to require a declaration of runway width
 - Next moving on to what will be required for “narrower than baseline”
- Topic # 32 TALPA (time of arrival performance)
 - Group is continuing progress on harmonized guidance for takeoff and landing information to be furnished in the AFM.
 - Proposing harmonized language on reverse thrust performance credit.
 - Draft report is in work and are not anticipating dissent resolving remaining issues.
 - FAA topic leader has retired, Airbus/Boeing representatives will lead topic to conclusion.
- Topic # 33 Landing Distance on Dry Runway (dispatch)
 - Most technical issues to define AFM landing distance to be more consistent with typical operations addressed.
 - Remaining issues include
 - potential AFM factor on braking mu to account for paint and rubber on runway,
 - how to address non-Part 121 operations, and
 - the need to redefine and implement new operational factors outside scope of the AFM, as part of the overall solution.

Coronavirus Accommodation

- Quarterly (face-to-face) meetings
 - Evaluated with decision gate at ~T-6 weeks
 - Have gone virtual since June, 2020
 - Replace 5-days of 8-hour face-to-face with 5 days of 3 hour virtual meetings
 - Not nearly as efficient
 - Less time
 - Communication is not as good (no body language, etc.)
- December, 2021 (Melbourne) virtual
- Next face-to-face now planned for Cologne, March 2022 (in question)
- Implications:
 - Lost hours (vis-à-vis planning)
 - SME travel budget implications raise concerns as schedules shift

FTHWG Phase 4 Meeting Plan

Delivery to TAE, Blue Stars

Delivery to ARAC in following quarter, Green Stars

	Dassault Bordeaux	Boeing Seattle Virtual	Easa Cologne Virtual	FAA Seattle Virtual	Airbus Toulouse Virtual	Boeing Seattle Virtual	EASA Cologne Virtual	Embraer Melbourne Virtual	Easa Cologne	TCCA Ottawa (tbc)	Airbus Toulouse	Textron Wichita	Dassault Paris	Boeing Seattle / Everett	ATR (TBC)	FAA (Location TBD)	Easa Cologne (TBC)	Airbus Canada (TBC)			
	March 2020 (2-6)	June 2020 (8-12)	Sept. 2020 (14-18)	Dec. 2020 (7-11)	March 2021 (1-5)	June 2021 (7-11)	Sept. 2021 (13-17)	Dec. 2021 (6-10)	March 2022 (7-11)	June 2022 (6-10)	Sept. 2022 (12-16)	Dec. 2022 (5-9)	March 2023 (6-10)	June 2023 (5-9)	Sept. 2023 (11-15)	Dec. 2023 (4-8)	March 2024 (4-8)	June 2024 (3-7)			
Topic #16 HQRM FAME																			★	★	
Topic # 32 TALPA (time of arrival performance)																					
Topic # 33 Landing Distance on Dry Runway (dispatch)																					
Topic # 21 Narrow runway operations																					
Topic # 22 Derate thrust procedures																					
Topic # 26 Landing in abnormal configurations																					
ASHWG Low Speed Alert																					

Buffer & Finalisation of Phase V preparation

Started work ahead of tasking

Formal Tasking Period

+ Single-topic telecom each week

- Mostly HQ Specialists
- Mostly Performance Specialists

AREAS for ARAC CONSIDERATION

- None at this time, except lingering COVID restrictions on face-to-face meetings

Transport Airplane Metallic and Composite Structures Working Group

Recommendation Report, Extension Topics, Briefing to the TAE – January 2022 meeting

Doug Jury (Delta Air Lines)

Working Group Chair

January 25, 2022

Members of the Working Group

- Industry WG voting members:
 1. Kevin Davis (Boeing)
 2. Chantal Fualdes (Airbus)
 3. Pascal Lortie (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. Ryan Higgins (British Airways)
 10. Doug Jury (Delta Air Lines) –Chairperson
 11. Mark Boudreau (FedEx)
 12. Eric Chesmar (United Airlines)
- NAAs: FAA (Walt Sippel, Larry Ilcewicz, Michael Gorelik, Patrick Safarian, Linda Jahner, Greg Schneider); EASA (Richard Minter, Simon Waite); ANAC (Pedro Caldeira, Marco Villaron, Fabiano Hernandes); TCCA (Jackie Yu, Natasa Mudrinic); JCAB (Hiroshi Komamura); Phil Ashwell (CAA)
- General public, non-voting participants: Allen Fawcett (retired, former SME participant), Mike Gruber (retired, former WG member & chair)

SUMMARY OF ORIGINAL 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 – extended topics

Three additional items for rule & guidance recommendation development

1. Structural Damage Capability (SDC) for Single Load Path (SLP) structure (completed):
 - Develop requirements and guidance material for single load path (SLP) structure, which by definition has no SDC
 - ARAC approved this report on 12/10/2020
 - Minor revision required due to final recommendations in Structural Bond report – expect to have to TAE week of 10/25. **Done. Not sure if this minor revision has been submitted by TAE to ARAC.**
2. Structural Bonding and “Weak Bonds” (completed):
 - FAA requests further clarification from the working group on how to address disbonds and weak bonds as a manufacturing defect
 - ARAC approved this report on 6/17/2020
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.

SUMMARY OF TASKING – extended topics (continued)

Item 3: Crack interaction

- Rule change:
 - No – general consensus position as of now
 - Currently two dissenting positions related to harmonization with EASA rule language
- Guidance changes:
 - WG agreement on need for change, but no consensus on extent of clarification needed in guidance.
 - WG has general agreement on proposing a new definition for AC – considered some degree of success.
 - WG has been unable to reach consensus on two separate proposals beyond a new definition:
 - Majority of members (likely all) agree with incorporating some language from AC 91-82A in 25.571-1D.
 - Most OEM members: simple update noting it's applicant's discretion how to consider crack interaction
 - Most operator members, FAA voting member and regulator non-voting participants: proposal should extend beyond a new definition to include include potential examples, mitigation (both through design and conservatism in analysis as acceptable means to consider the effect).
 - One OEM WG member has just now shared general discussion on how they consider crack interaction as part of their DTA. This is a good marker for discussion within WG.
 - Further discussion related to ensuring we distinguish between local DTE and a global DTE (WFD). Resulting in some new content we need to develop.
 - Based on observed roadblocks, FAA has provided feedback to sub-team as to what items they would like to see addressed in report.
- One proposal under consideration now is to propose further technical guidance (potential MoC) to be developed by an industry standards organization – only limited interest in this approach by WG team, likely documented in report but discussed as to why it's not going to be recommended.

Deliverable & Schedule

Deliverable: three 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

- ARAC agreeable to presenting this report at **June 2022** meeting.
 - Core team has prepared a target report drafting & review milestone schedule to meet the next TAE scheduled meeting.
 - Targeting **final week of March, 2022** to have draft ready for TAE review.

Milestones ^[1]:

• 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
• Three recommendation reports – submitted to TAE	
• 1: Structural Damage Capability – Single Load Path	Oct/Nov 2020 DONE
• 2: Structural Bonding	Mid 2021 SUBMITTED to TAE DONE
• 3: Crack Interaction	Early 2022

^[1] May find impact to WG member availability to participate due to COVID-19 related business decisions (furloughs, leave of absences, etc.)

Meeting cadence:

- *Sub-teams (including NAA representatives) would meet more frequently*
- *Bi-weekly progress meetings (virtual) with FAA*
- *Full WG meetings (virtual) – monthly or as needed*

Ice Crystal Icing Working Group Status Report Transport Aircraft and Engines Subcommittee

Melissa Bravin

Allan van de Wall

Working Group Co-Chairs

20 January 2022

MEMBERS of ICI WG

Member Name	Organization	Role
Alan Strom	(FAA-ANE Standards) <u>FAA Representative</u>	FAA Representative
Philip Haberen	(FAA-ANE Standards) <u>FAA Representative</u>	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
Josh Larson	Air Line Pilots Association	Other - P
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
Roxanne Bochar	Pratt & Whitney	Engine – P
Aaron Cusher	Collins	Other - 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
Adam Malone	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
Mauricio Caio Rosin	TCCA	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. Examine how compliance with §33.68(e) and §25.1093(b)(1) can be shown to demonstrate that at the airplane level, engine effects that could prevent the continued safe flight and landing of the airplane during encounters in ice crystal icing conditions would be extremely improbable (10^{-9}). If that cannot be shown, recommend changes to the text of §33.68 or §25.1093 (or a combination of both) that would provide the level of safety described by §25.1309(b)(1).
 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

- Weekly teleconferences in lieu of F2F until July 2022
 - July 2022: WG submits an interim report to FAA
 - Summer 2022: FAA conducts flight campaign, processes data
 - Summer 2023: WG reconvenes to assess flight campaign data
 - December 2024: WG submits a final report to FAA

STATUS OF TASKING

061

Complete:

- Appendix D Altitude-Temperature envelope to be extended to -90 C / ~FL550 to accommodate business jets (Task 1, 2)
- Appendix D TWC-Altitude envelope “cold side” (upper left-hand portion) will be scaled from adiabatic down to TBD scalar where flight campaign data exists (Task 1, 2)
- FAA funding approved to conduct high aerosol flight campaign off coast of Japan to assess TWC levels in polluted environments; 99th percentile TWC values may be affected (Task 1, 2)

To Do:

- **Deliberating appropriate TWC scalar for use in environmental definition**
 - Complete Task 2 (winter convection, oceanic vs. continental, peak TWC)
- Joint Probability Analysis study (Task 2)
- 90% complete: industry probe ICI event analysis (Task 3)
- Discuss non-harmonized FAA / EASA ICI regulations / guidance (Task 5)
- AC 20-147A update recommendations (Task 6)
- Assist FAA in determining cost / benefit analysis based on WG recommendations (Task 7)
- Develop ARAC report (Task 8)

AREAS of ARAC CONSIDERATION

- None

Avionics Systems Harmonization Working
Group (ASHWG)
Status Report to the
Aviation Rulemaking Advisory Committee

Clark Badie

Working Group Chair

January 2022

CURRENT ASHWG MEMBERS

Chris Heck	ALPA	Chris.heck@alpa.org
Marshall Ekstrand	ALPA	Marshall.Ekstrand@alpa.org
Remy Dayre	Airbus	remy.dayre@airbus.com
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Jean Baron	EASA	jean.baron@easa.europa.eu
John Stuber	FAA	John.Stuber@faa.gov

SUMMARY OF TASKING

- Advise on the use of an alert when ground spoilers are not armed for landing in light of related incidents and accidents.
- Reference from the tasking statement:
 - 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 International Airport. This task is also related to NTSB safety recommendations following the December 29, 2010, American Airlines Flight 2253 runway overrun accident at Jackson Hole Airport, Wyoming.

SPECIFIC TASKING QUESTIONS

1. Are the existing industry standards or guidance material sufficient, or do you recommend any new or revised industry standards or guidance material to provide acceptable automatic ground spoiler alerts for the flightcrew in cases where the airplane is prepared to land (for example, when the airplane drops below an appropriate height above the runway), but the automatic ground spoilers are not armed? The recommendations should ensure there is enough flexibility to cope with potentially different aircraft designs.
2. Are the existing alerting standards in 14 CFR part 25 sufficient, or do you recommend changes to the existing alerting requirements?
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. Is coordination necessary with other harmonization working groups? If yes, coordinate with that working group and report on that coordination.

STATUS OF TASKING

- The ASHWG has reviewed additional information to help understand the relationship between runway overruns and aircraft equipped with ground spoilers/speed brakes.
- Also evaluated other circumstances related to runway overrun contributions.
 - Ref: FAA AC 91-79A “Mitigating the Risks of a Runway Overrun Upon Landing”
- Recommended approach to develop a new proposed rule, 25.704 “Landing Alerting System” and new AC 25-704.

RECOMMENDED APPROACH

Develop a 'Landing Alerting System' rule 25.704 and advisory material AC 25-704

- Include ground spoilers/speed brakes specifically, when required for landing
- Consistent with Ref: FTHWG Task 9 Wet Runway Stopping Performance Final Report, March 16, 2018. ASHWG to follow up with FTHWG in Q1.
- Allow for future considerations which may help reduce or eliminate the likelihood of runway overruns (e.g. unstable approaches, potential adverse runway conditions, potential long/late touchdowns, energy state issues).
- Document those other considerations in the report, and recommend a follow up task to improve in the future (addresses tasking question #3).

Recommend EASA CS 25.705 - Runway Overrun Awareness and Avoidance System (ROAAS) - for harmonization (**as-is**).

- Ref: FTHWG Task 9 Wet Runway Stopping Performance Final Report, March 16, 2018

SCHEDULE

- Initial meeting held February, 2021
- Monthly (virtual only) meetings have been conducted to work this task. Ad-hoc telecons and electronic correspondence will be used to the maximum extent possible.
- Current
 - Team review/refinement of the report.
 - Provide draft to FTHWG for awareness.
- Planned completion: Q3 2022

AREAS of ARAC CONSIDERATION

None at the moment