AVIATION RULEMAKING ADVISORY COMMITTEE (ARAC) MEETING

June 17, 2021***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
            - ❖ 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: 12/2021)
        - Part 145 Working Group – Ms. Sarah McLeod
            - ❖ Final Report (Present Recommendation Report to ARAC: 12/2021)
        - Training Standardization Working Group – Mr. Brian Koester
            - ❖ Addendum Recommendation Report (Present to ARAC: 12/2021)
    - Transport Airplane and Engine (TAE) Subcommittee – Mr. Keith Morgan
        - Flight Test Harmonization Working Group – Mr. Brian P. Lee
            - ❖ Topic 16 Handling Qualities Rating Method (HQRM) (Present Recommendation Report to ARAC: TBD)
            - ❖ Phase 4 (Present Recommendation Report to ARAC: TBD)
        - Transport Airplane Metallic and Composite Structures Working Group – Mr. Doug Jury
            - ❖ Repeat Inspections and Crack Interaction (Present Recommendation Report to ARAC: 9/2021)
            - ❖ Structural Bonding and “Weak Bonds” (Present Recommendation Report to ARAC: TBD)

- Ice Crystals Icing Working Group (Present Recommendation Report to ARAC: 12/2021) – 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: TBD)

Recommendation Reports

- ARAC
  - Training Standardization Working Group – Mr. Brian Koester

  - Initial Recommendation Report: Proposed Schedule for Standardized Curriculum Designated Pilot Examiner Working Group – Mr. Sean Elliot
    - Final Recommendation Report

- Transport Airplane and Engine (TAE) Subcommittee
  - Engine Harmonization Working Group Final Report – Mr. Peter Turyk
    - ❖ Alternate Test to 14 CFR 33.87 – Endurance Test

- Any Other Business

  Update on Section 65.101 Repairman Certificate Portability Working Group

  FAA update on regulatory activities

  Remaining Fiscal Year 2021 Meeting Date
  - Thursday, September 16, 2021

  FY 2022 Meeting Schedule

  - December 9, 2021
  - March 17, 2022
  - June 16, 2022
  - September15, 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

DRAFT AVIATION RULEMAKING ADVISORY COMMITTEE RECORD OF MEETING

MEETING DATE: March 18, 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 March 3, 2021 (86 FR 12511).

ATTENDEES: **Committee Members**

Yvette A. Rose	Cargo Airline Association (CAA) *ARAC Chair*
David Oord	Lilium, *ARAC Vice Chair and* 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)
Tom Charpentier	Experimental Aircraft Association (EAA)
Ambrose Clay	National Organization to Insure a Sound Controlled Environment (N.O.I.S.E.)
Christopher 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	FlyersRights.org
Randy Kenagy	Air Line Pilots Association (ALPA)
Sarah MacLeod	Aeronautical Repair Station Association (ARSA)
Justin Madden	Aircraft Mechanics Fraternal Association (AMFA)
Paul McGraw	Airlines for America (A4A)

Keith Morgan	Pratt & Whitney, Chair of the Transport Aircraft and Engine (TAE) Subcommittee
Richard Peri	Aircraft Electronics Association (AEA)
Leslie Riegle	Aerospace Industries Association (AIA)
Larry Rooney	Coalition of Airline Pilots Association (CAPA)
Steven Udvar-Hazy	Aviation Capital Group
Bill Whyte	Regional Airline Association (RAA)
Attendees	
Clark Badie	Federal Express (FedEx)
Stacy Bechdolt	Air Line Pilots Association
Antonio Chiesa	Transport Canada Civil Aviation (TCCA)
Steve Cottrell	Aerion Supersonic
Maryanne DeMarco	Coalition of Airline Pilots Association (CAPA)
Sean Elliott	Experimental Aircraft Association (EAA)
Bob Fox	Air Line Pilot Association (ALPA)
Doug Jury	Delta Air Lines
Brian Koester	National Business Aviation Association (NBAA)
Brian Lee	The Boeing Company
Thomas Mickler	EASA
Dinkar Mokadam	Association of Flight Attendants
George Novak	National Air Carrier Association
Peter Turyk	Pratt & Whitney Canada
FAA	
Timothy Adams	Office of Rulemaking
Angela Anderson	Office of Rulemaking
Ed Averman	Office of Chief Counsel
Kathleen Bradshaw	Aircraft Certification Service
Chris Carter	Aircraft Certification Service
Paul Cloutier	Flight Standard Services

Thuy Cooper	Office of Rulemaking
Martin Crane	Aircraft Certification Service
Jim Crotty	Office of Rulemaking
Thomas Cuddy	Office of Aviation Policy and Planning
Bryan Davis	Flight Standard Services
Crystal Essiaw	Office of Communications
Nia Fields	Office of Communications
Philip Haberlen	Aircraft Certification Service
Keira Jones	Office of Rulemaking
Nellie Lew	Office of Aviation Policy and Planning
Karen Lucke	Flight Standard Services
Suzanne Masterson	Aircraft Certification Service
Natalie Mitchell-Funderbunk	Office of Rulemaking
Sarah Mikolop	Office of Chief Counsel
Kieran OFarrell	Flight Standard Services
Susan Parson	Flight Standard Services
Lakisha Pearson	Office of Rulemaking
Paul Preidecker	Flight Standard Services (FAA contractor)
Luis Ramirez	Aircraft Certification Service
Sandra Ray	Flight Standard Services
Brandon Roberts	Office of Rulemaking *Designated Federal Officer (DFO)*
Puja Sardana	The Regulatory Group/FAA contractor
Bill Schinstock	Aircraft Certification Service
Tim Shaver	Flight Standard Services
Sandra Shelley	Aircraft Certification Service
Walt Sippel	Aircraft Certification Service
Todd Steiner	Office of Aviation Policy and Planning
Alan Strom	Aircraft Certification Service

Giles Strickler	Office of Rulemaking
Mary Thompson	Flight Standards Service
George Thurston	Office of Aviation Policy and Planning
Mark Trudeau	Flight Standards Service
Shelley Waddell	Flight Standards Service
Stacy Wells	Flight Standard Services
Alana Zautner	Aircraft Certification Service
Martin Zhu	Office of Aviation Policy and Planning

Welcome and Introduction

Ms. Yvette Rose, ARAC Chair, called the meeting to order at 1:02 pm. Ms. Rose noted that, if she has to leave the meeting before it concludes, Mr. David Oord, ARAC Vice Chair, will take over in her absence. She asked Mr. Brandon Roberts, Designated Federal Officer (DFO), to review features of Zoom, the teleconference platform used for the virtual meeting. Mr. Roberts provided an overview of the Zoom features and 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. Rose confirmed the ARAC members who were in attendance based on the participant list provided by Zoom. Ms. Rose thanked the FAA and supporting staff for their efforts in conducting these meetings virtually and accurately tracking nonmember attendance.

Ms. Rose introduced Justin Barkowski with American Association of Airport Executives (AAAE) as the newest ARAC member.

Mr. Roberts read the required FACA statement (Title 5, United States Code (5 U.S.C.); Appendix 2 (2007)). He stated that members of the public may address the ARAC with the permission of the Chair.

Ratification of Minutes

Ms. Rose asked for a motion to accept the minutes from the December 10, 2020,[1] ARAC meeting. Mr. Oord motioned to accept the minutes, and Mr. Paul McGraw seconded the motion. ARAC voted to ratify the minutes with no objections.

[1] The December 10, 2020, meeting minutes can be found at: https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information/documentID/4743.

Status Reports

A copy of the March 18, 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/4743.

Airman Certification Systems Working Group (ACSWG)

Ms. Rose asked Mr. David Oord, ACSWG Chair, to provide the working group's status report. The update included an overview of membership, a summary of tasking, a review of the schedule, the status of tasking, and areas for ARAC consideration.

Mr. Oord noted that membership has largely stayed the same with consistent engagement from the FAA and industry. He described the tasking, which includes standards, guidance, and test material. Mr. Oord explained that the schedule is on track and a comprehensive interim report was submitted in June 2018 with subsequent interim reports consistently submitted since then. He stated that the final report is expected by December 1, 2021. Mr. Oord said that the group is actively assessing the status of their work based on a new tasking and challenges of COVID. He noted that the group met virtually in December 2020 and March 2021, and they hope to have in-person meetings soon.

Mr. Oord stated that there is continued progress on all fronts, and he emphasized that a lot of work is being done on helicopter instructor and other handbooks that are continuing to be assessed. He explained some revisions and concerns that the group has taken into consideration, including the 'Guidance on Guidance.' Mr. Oord mentioned that a letter was submitted to the U.S. Department of Transportation expressing concerns with the 'Guidance on Guidance.' While noting some working group members signed the letter, Mr. Oord clarified that the ACSWG did not submit the letter to the Department.

Ms. Rose asked if any members had questions. Mr. Walter Derosier asked if the recently rescinded Executive Orders affected the Guidance on Guidance. Mr. Roberts stated that this issue will be addressed when he provides the FAA's update.

Part 145 Working Group

Ms. Rose asked Ms. Sarah MacLeod, the Part 145 Working Group Chair, to provide the working group's status report. The update included an overview of membership, a summary of tasking, the status of tasking, and areas for ARAC consideration.

Ms. MacLeod noted that there were some changes in membership, but she indicated that no expertise on the committee has been lost. Mr. Ric Peri added that there is a nice balance of participation from the working group members.

Ms. MacLeod requested feedback from the FAA on preliminary report. She noted this would be helpful as the working group gather more information for their final recommendation report. Mr. Tim Shaver, FAA, provided the FAA's feedback on the part 145 preliminary report. He noted that the report has been reviewed and seems to be in alignment with the agency's other activities. Mr. Shaver said he agrees with most of the contents of the report, but has some concerns with recommendation number 2.[2] Ms. MacLeod commented on his concern for recommendation number 2, and she noted that the guidance should not be contrary to the regulation. She noted that the working group is open to scheduling a meeting to discuss these concerns further.

Designated Pilot Examiners Working Group (DPEWG)

Ms. Rose asked Mr. Sean Elliott, the DPEWG Chair, to provide the working group's status report. The update included an overview of membership, a summary of tasking, a review of the schedule, the status of tasking, and areas for ARAC consideration.

Before beginning the status report, Mr. Elliott confirmed that the DPEWG shares the same concerns that Mr. Oord mentioned regarding the 'Guidance on Guidance.'

Mr. Elliott noted that there are no changes to membership or the summary of tasking. He detailed the consistent schedule and noted that the full group met in February 2021. Mr. Elliott stated the working group has drafted the report, and plans to present it at the June ARAC meeting.

Ms. Rose reminded the group to note any recommendations that could potentially fall out of scope, and Mr. Elliott stated that their report would include a separate section for any of those items. Ms. Rose asked if there were any other questions for the group. Mr. Randy Kenagy wanted to clarify that the entire working group, including ALPA, did not agree with the letter regarding 'Guidance on Guidance' that Mr. Elliott previously mentioned. Mr. Elliott confirmed that the letter was not from a unanimous standpoint and no vote was taken.

Training Standardization Working Group (TSWG)

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

Mr. Koester noted that the group had its first official meeting in December 2020 and had met every other week since December. He reviewed membership, including 15 members and other supporting FAA staff. Mr. Koester summarized the tasking, reviewed the

[2] Recommendation #2 stated, "The agency should immediately change the guidance to its workforce to allow deviations from its Flight Standards Information Management System, Order 8900.1, whenever an inspector and local office management determine the information (a) is contrary to the plain language of a regulation, or (b) is more restrictive that the plain language of a regulation."

schedule, and presented the order in which the group plans to complete the tasks. He stated that there were no areas for ARAC consideration at this time.

Ms. Rose asked for clarification about deadlines and if the TSWG plans to have everything completed by December. Mr. Koester replied that the official tasking requires the TSGW to submit a schedule of its work plan to ARAC at the June 2021 meeting, which it is on track to do. He noted that the follow up taskings, regulatory analysis and the instructor check pilot curricula, will be completed 6 months after the June ARAC meeting.

Transport Airplane and Engine (TAE) Subcommittee

Ms. Rose asked Mr. Keith Morgan, the TAE Subcommittee Chair, to provide the TAE subcommittee status report.

Mr. Morgan noted that there were no changes in membership. He welcomed a new FAA Lead, Ms. Suzanne Masterson, who has taken over for Ms. Mary Schooley. Mr. Morgan reviewed the quarterly meeting schedule and stated that there are currently five active TAE Subcommittee working groups: Flight Test Harmonization (FTH), Transport Airplane Metallic and Composite Structure (TAMCS), Ice Crystal Icing (ICI), Avionic Systems Harmonization (ASH), and Engine Harmonization (EH).

Mr. Morgan reviewed the schedule of deliverables for the TAE working groups. He noted that TAE submitted the Avionics System Harmonization Working Group's (ASHWG) report for ARAC consideration. He stated that two reports, EHWG Endurance Test Clarification and AMCSWG Structural bonding, should be ready by the June 2021 ARAC meeting, and the TAMCSWG Crack Interaction report should be submitted by September 2021.

Flight Test Harmonization Working Group (FTHWG)

Mr. Morgan provided a status update for the FTHWG. He stated that the group has been working on phase 4 of the tasking. He described a breakdown of the work and how it is being delegated. Mr. Morgan said that the group hopes to have a face-to-face meeting in Seattle in June, but it will depend on the status of COVID, travel restrictions, etc. He stated that the status of tasking is on track, and that the group does not need anything from ARAC at this time.

Transport Aircraft Metallic and Composite Structures Working Group (TAMCSWG)

Mr. Morgan provided an overview of the TAMCSWG status report. He reviewed the membership, tasking, and schedule. Mr. Morgan summarized the original tasking and described the extended topics that were added. He confirmed the schedule of deliverables and noted that the group does not need anything from ARAC at this time.

Ice Crystals Icing Working Group (ICIWG)

Mr. Morgan provided the ICIWG status report. He stated that nothing has changed with membership or the status of tasking. Mr. Morgan reviewed the schedule, which extended to December 2021. He noted that the group has weekly phone calls and is making good progress. Mr. Morgan stated that there were no areas for ARAC consideration at this time.

Ms. Rose asked for clarification on the last bullet of the ICIWG presentation, *Additional recommendations for AC 20-147A & ARAC report*, and Mr. Morgan noted that those recommendations would include any findings that may come out of a separate flight test program. Mr. Alan Strom, FAA, mentioned that the flight test program (dealing with pollution) may not happen until 2023-2024, and the group should continue working toward their current deliverable schedule.

Avionics System Harmonization Working Group (ASHWG)

Mr. Morgan provided a status update on the ASHWG. Mr. Morgan summarized the tasking and noted that the group meets on a weekly basis.

Engine Harmonization Working Group (EHWG)

Mr. Morgan noted that the EHWG is responding to FAA's questions regarding the ARAC Alternate Endurance Test Working Group Recommendation Report. He further noted that the EHWG intends to present its work at the June 2021 meeting.

Recommendation Report for Low Energy Alerting Requirements Final Report

ASHWG

Mr. Clark Badie, ASHWG Chair, presented the recommendations. He thanked the team and Mr. Brian Lee for their help. He noted that Mr. Jacobsen retired from the FAA. Mr. Badie reviewed details of the task and discussed how the team developed the recommendations.

Mr. Paul Hudson asked a question regarding the applicability of the recommendations to future designs. Mr. Badie confirmed that the recommendations are for future designs only. Mr. Hudson asked if the group found anything that could have prevented the accidents that initiated the tasking. Mr. Badie said that he believed the accidents could have been prevented by several contributing factors, including an unstable approach.

Ms. Rose made some clarifications about the group's report, including final language edits and use of the word must. She asked if any members had additional questions, and no one did. Ms. Rose asked for a motion to accept the report. Mr. Oord motioned, and Mr. Derosier seconded the motion. ARAC voted to accept the report with no objections.

New Taskings

Ms. Rose announced two new taskings:

Airman Certification System Working Group – "Call to Action" Safety Review of Pilot Certification Standards (Aircraft Certification, Safety, and Accountability Act, December 27, 2020) Tasking

Ms. Rose asked Ms. Karen Lucke, FAA, to present the first tasking. Ms. Lucke announced the tasking was mandated from Congress. Ms. Rose asked if there were any questions from ARAC members. Mr. Oord noted that, if the tasking is accepted, the ACS working group is prepared to take on the work (on an extended timeframe), and he supports the tasking. Ms. Rose clarified that the current ACSWG report is expected in December 2021, and if this new tasking is approved, the working group would need an extension until at least June 2022. Mr. Hudson asked for clarity on the work that the tasking is requesting. Mr. Oord stated that he could not speak on the Congressional intent, but he believed the new FAA task coincides with the ACSWG's work.

Ms. MacLeod asked FAA staff about the process of tasking and ARAC recommendations through the FAA, suggesting it used to be more succinct. Mr. Roberts agreed that the process is normally more streamlined, but in this case, with the "Call to Action" from Congress, he does not have more information. He stated that if ARAC and the working group believe the work has already been done, they could reply to the call of action stating such.

Ms. Dunham asked a question about membership of the working group for this tasking. Ms. Rose clarified that the FAA is not soliciting members for this tasking, as the task would be assigned to the ACSWG.

Mr. Peri suggested it would be helpful to know the intent of the tasking, which could help the working group produce better results. Mr. Oord agreed that clarifying the Congressional intent would be helpful. Mr. Paul McGraw asked if the ACSWG included part 121 operators. Mr. Oord confirmed that the ACSWG includes part 121 operators, and the membership list is included in the meeting packet.

Mr. Barkowski asked about the process once ARAC submits recommendations to the FAA. Ms. Rose noted that this has been requested of the agency by many members. Mr. Barkowski suggested that accountability from the FAA would be helpful for ARAC members to understand, and Mr. Roberts noted that it is a work in progress.

Ms. Rose asked for a motion to accept the tasking. Ms. MacLeod motioned to accept the tasking, and Mr. Morgan seconded the motion. ARAC voted to accept the tasking with no objections.

Section 65.101 Repairman Certificate Portability Working Group (FAA Reauthorization Act of 2018, October 5, 2018)

Ms. Rose asked Mr. Brian Davis, FAA, to present the second tasking. Mr. Davis noted that this tasking was mandated by Congress to discuss the feasibility of a repairman certificate issued under § 65.101 to be more portable from one employing certificate holder to another.

Ms. MacLeod suggested changing "being more portable" to "having enhanced portability" and "would" to "could". She stated that the current language of the tasking is too aggressive, and she asked for clarification on the 'adequate number of repairmen.'

Ms. Rose asked for a motion to accept the tasking so that members could further discuss changes. Ms. MacLeod made a motion to accept the tasking, and Mr. Peri seconded the motion.

Mr. Justin Madden expressed concern that making paragraph 2(b) the primary recommendation driver may not fit the FAA's intent. Ms. MacLeod suggested having the 'adequate number' in the main section could be a driver for better career path availability within mechanics or higher positions. Mr. Madden confirmed he understood, and he emphasized that he believed all subtopics should have equal footing as written.

Ms. Rose made a motion to amend paragraph 2 and Ms. MacLeod seconded. ARAC voted to delete paragraph 2(b) and change "could" to "would". ARAC agreed to the following language:

(2) Develop recommendations:
(a) That could increase the portability of repairmen certification issued under § 65.101 across employing certificate holders.

(b) That maintain, or improve, the current level of safety with regard to repairmen training and certification under § 65.101.

(c) That will clearly identify the need and the benefits of a portable repairman certificate while taking into consideration the costs and ramifications if any.

In response to Ms. Dunham's question about membership, Ms. Rose stated that the FAA would solicit members for the working group. She noted that The FAA will post the tasking and solicitation notice on the FAA committee website.

Other Business and FAA Updates

Ms. Rose asked Mr. Roberts for FAA updates. Mr. Roberts discussed Executive Order (EO) 13992 and the freeze memo issued on January 20, 2021. He noted that President Biden issued Executive Order 13992: Revocation of Certain Executive Orders Concerning Federal Regulation, which revokes the following executive actions.

- EO 13771 "Reducing Regulation and Controlling Regulatory Costs" –often referred to as the "2-for-1".
- EO 13777 "Enforcing the Regulatory Reform Agenda" –birthplace of RRTFs.
- EO 13875 "Evaluating and Improving the Utility of Federal Advisory Committees" –resulted in update to DOT Order 1120.3C.
- EO 13891 "Promoting the Rule of Law Through Improved Agency Guidance Documents" – often referred to as "guidance on guidance."
- EO 13892 "Promoting the Rule of Law Through Transparency and Fairness in Civil Administrative Enforcement and Adjudication".
- EO 13898 "Increasing Government Accountability for Administrative actions by Reinvigorating Administrative PAYGO".

Mr. Roberts also noted that the freeze memo affected the following rules.

- Streamlined Launch and Reentry Requirements
- Remote Identification of Unmanned Aircraft
- Operation of Small Unmanned Aircraft Systems Over People
- Special Flight Authorizations for Supersonic Aircraft Final Rule

Mr. Roberts asked if anyone had questions. Mr. Charpentier asked for an update on the flight training restriction changes in the Removal of the Date Restriction for Flight Training in Experimental Light Sport Aircraft (E-LSA) rule. Mr. Roberts noted that the Fall Unified Agenda reflects the status of the rulemaking. He also noted that the Spring Unified Agenda should publish in May.

Ms. Dunham requested a copy of Mr. Roberts' presentation as well as an updated list of the current 26 members. She also inquired about the status of alternates, and Ms. Rose noted she would note that as a point of consideration for ARAC.

Mr. Hudson asked about the status of the 'Rule on Rules'. Mr. Roberts replied that the Department of Transportation issued the 'Rule on Rules' under the previous administration and that he expects the current department will review it to make any necessary rulemaking changes, and in the meantime, it is still applicable.

Mr. Madden asked if any Airmen Certification Standards (ACS) would be held up in the meantime. Mr. Roberts noted that the agency shares the frustration of getting certifications and standards related to safety concerns out in a timely manner and that everyone is working toward common goals and interests. Mr. Kenagy asked for any insight on why the ACS have not published in the Federal Register. Mr. Roberts replied that the process of rulemaking takes time.

Mr. Peri asked if the new administration issued any executive orders that directly affect how the ARAC operates. Mr. Roberts noted that the revocation of EO 13777, which abolishes regulatory reform task forces, has affected FAA's rulemaking process.

Mr. Hudson asked if any Federal or departmental changes were made in relation to the Freedom of Information Act (FOIA). Mr. Roberts stated that he is not aware of any changes or directives that effect compliance with FOIA.

Ms. Leslie Riegle asked for clarification on the supersonic noise climate rule.
Mr. Barkowski asked about next steps for rulemaking. Mr. Roberts noted that the steps for rulemaking have not changed, but the prioritization of resources and projects may. He noted that the Spring Unified Agenda should be a good indication of the priorities of the new administration.

Mr. Roberts noted that the following rules have published since the December ARAC meeting. In response to the freeze memo, Mr. Roberts stated that the FAA issued notices delaying the effective dates for each rule.

- Special Flight Authorizations for Supersonic Aircraft Final Rule.
- Remote Identification of Unmanned Aircraft Systems Final Rule.
- Operation of Small Unmanned Aircraft Systems Over People Final Rule.

Mr. Roberts noted that the FAA is currently working on the Secondary Flightdeck Barriers rulemaking. He further noted that the Pilot Records Database (PRD) rulemaking is currently with the Office of Information and Regulatory Affairs. In response to Mr. Hudson's question, Mr. Roberts noted that the Fall Unified Agenda projected publication is January 2022.

Mr. Hudson asked for an update on emergency evacuation testing tasked in 2018, completed in 2019. Mr. Roberts stated that he did not have any information.
Mr. Barkowski asked about the status of the SMS final rule. Mr. Roberts noted that airport SMS is currently an active project within the FAA.

Mr. Peri asked if FAA can provide a clarification briefing on MOSAIC. Mr. Roberts stated that it might not be possible to brief ARAC on MOSAIC because it is an active rulemaking project. He said he would check on the status of that under DOT guidelines.

Mr. Chris Cooper asked about the status of DOT leadership under the new administration. Mr. Roberts stated that Secretary Buttigieg is in place and that the Secretary's immediate staff is rapidly assembling.

Mr. Roberts shared that the Office of Rulemaking has restructured. He introduced Ms. Angela Anderson as the Director of the new Regulatory Support Division. He noted that the division has two branches. The Regulatory Planning Branch's portfolio includes committee and pre-rulemaking activities. The Part 11 Petitions Branch will address petitions for exemptions and rulemakings.

Mr. Roberts reviewed the Fiscal Year 2021 ARAC schedule. The remaining meeting dates are as follows --

- Thursday, June 17, 2021
- Thursday, September 16, 2021

Adjournment

Mr. Oord adjourned the meeting at 4:03 p.m.

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

David Oord
Working Group Chair

June 1, 2021

MEMBERS of ACSWG - INDUSTRY

- David Oord, Lilium
- Paul Alp, Boeing
- 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 “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, 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
- Robert Burke
- Dennis Byrne
- Bryan Davis
- Joel Dickinson
- Mike Duffy
- Troy Fields
- Ramona Fillmore
- Adam Giraldes
- 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
- Stephanie Williams
- Bill Witzig
- Daron Malmorg

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.
- Added Call to Action tasking, as mandated by the Aircraft Certification, Safety, and Accountability Act.

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 December 1, 2021
  - Extension request to June 2022 to align with Call-to-Action tasking
    - Will continue to utilize and submit interim reports when new draft standards or guidance is ready

SCHEDULE

- 2020 Meetings –
  - March 17 & 18 (cancelled)
  - June 23 (virtual meeting)
  - September 22 (virtual meeting)
  - December 8 (virtual meeting)
- 2021 Meetings –
  - March 16 (virtual meeting)
  - June 15 (virtual meeting)
  - September 21-22 (TBD)
  - December 14-15 (TBD)

STATUS OF TASKING

- Continued progress on Standards, Guidance, and Test Management
  - Refinement and improvement of existing Standards
    - Change management process
    - ACS code consistency and refinement
      - Update practice exams to reflect live test questions and codes
  - New test management service implemented
    - ACS Exam Boards (AEBs)

STATUS OF TASKING

- Continued progress on Standards, Guidance, and Test Management
  - List of ACS in development and pending publication –

FAA-S-ACS-1	Aviation Mechanic ACS
FAA-S-ACS-2	Commercial Pilot – Powered-Lift ACS
FAA-S-ACS-3	Instrument Rating – Powered-Lift ACS
FAA-S-ACS-4	Commercial Pilot - Gyroplane ACS
FAA-S-ACS-5	ATP Helicopter ACS
FAA-S-ACS-9	Flight Instructor Powered Lift ACS
FAA-S-ACS-13	Private Pilot – Powered-lift ACS
FAA-S-ACS-14	Instrument Rating – Helicopter ACS
FAA-S-ACS-15	Private Pilot – Helicopter ACS
FAA-S-ACS-16	Commercial Pilot – Helicopter ACS
FAA-S-ACS-17	Airline Transport Pilot – Powered-Lift ACS
FAA-S-ACS-18	Private Lighter-Than-Air, Section 1, Free Balloon, ACS
FAA-S-ACS-18	Private Lighter-Than-Air, Section 2, Airship ACS
FAA-S-ACS-19	Commercial Lighter-Than-Air Free Balloon ACS
FAA-S-ACS-20	Sport Pilot – Model-Specific ACS
FAA-S-ACS-21	Sport Pilot – Airplane, Gyroplane, Glider, and Flight Instructor ACS
FAA-S-ACS-22	Sport Pilot – Airship, Balloon, and Flight Instructor ACS
FAA-S-ACS-23	Sport Pilot – Weight-Shift Control, Powered-Parachute, and Flight Instructor ACS
FAA-S-ACS-24	Remote Pilot – Unmanned Aircraft Systems (UAS) ACS
FAA-S-TS-25	Inspection Authorization Testing Standard

STATUS OF TASKING

- Continued progress on Standards, Guidance, and Test Management
  - List of ACS in development and pending publication –

FAA-S-ACS-1	Aviation Mechanic ACS
FAA-S-ACS-2	Commercial Pilot – Powered-Lift ACS
FAA-S-ACS-3	Instrument Rating – Powered-Lift ACS
FAA-S-ACS-4	Commercial Pilot - Gyroplane ACS
FAA-S-ACS-5	ATP Helicopter ACS
FAA-S-ACS-9	Flight Instructor Powered Lift ACS
FAA-S-ACS-13	Private Pilot – Powered-lift ACS
FAA-S-ACS-14	Instrument Rating – Helicopter ACS
FAA-S-ACS-15	Private Pilot – Helicopter ACS
FAA-S-ACS-16	Commercial Pilot – Helicopter ACS
FAA-S-ACS-17	Airline Transport Pilot – Powered-Lift ACS
FAA-S-ACS-18	Private Lighter-Than-Air, Section 1, Free Balloon, ACS
FAA-S-ACS-18	Private Lighter-Than-Air, Section 2, Airship ACS
FAA-S-ACS-19	Commercial Lighter-Than-Air Free Balloon ACS
FAA-S-ACS-20	Sport Pilot – Model-Specific ACS
FAA-S-ACS-21	Sport Pilot – Airplane, Gyroplane, Glider, and Flight Instructor ACS
FAA-S-ACS-22	Sport Pilot – Airship, Balloon, and Flight Instructor ACS
FAA-S-ACS-23	Sport Pilot – Weight-Shift Control, Powered-Parachute, and Flight Instructor ACS
FAA-S-ACS-24	Remote Pilot – Unmanned Aircraft Systems (UAS) ACS
FAA-S-TS-25	Inspection Authorization Testing Standard

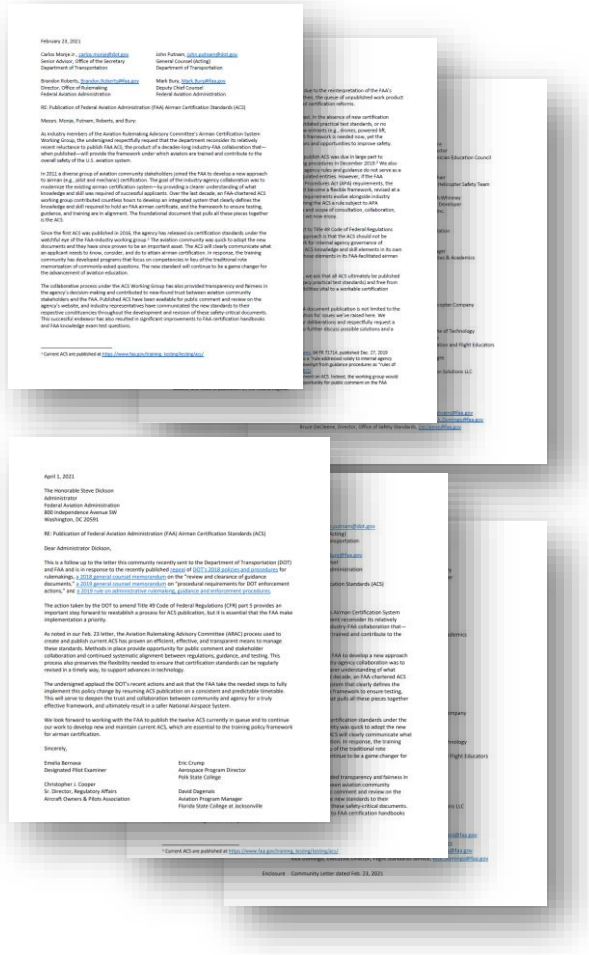
ARAC approved and sent to FAA

STATUS OF TASKING

- Call to Action
  - New subgroup established and tasked with reviewing pilot certification standards, as mandated by the Aircraft Certification, Safety, and Accountability Act
    - Tasking assigned to ACSWG at last meeting
    - Workplan outline – June 2021
    - Call to Action recommendation report – June 2022

AREAS of ARAC CONSIDERATION

- **December 2019**
  - Outlined working group members concerns about delay in publishing new Airman Certification Standards – due in large part to promulgation of DOT's administrative rulemaking procedures
- **Letters sent, reiterating those concerns**
  - February 2021
    - Queue of ARAC approved unpublished work product has grown to twelve ACS
      - Training and testing providers relying on outdated practical test standards
      - No means to prepare for new entrants (powered-lift, drones, eVTOL, etc.)
  - April 2021
    - Response to DOT's repeal of associated policies, memorandums, and rule on administrative rulemaking, guidance, and enforcement procedures



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

Sarah MacLeod and Ric Peri

Working Group Chairs

June 2020 Meeting

Members of the Part 145 Working Group

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 Sambiase, 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

Richard Macklosky, Manager, Regulatory Management Civil Aviation	United Technologies Corporation
Jeff Eagle, Senior Regulatory Compliance Specialist	United Technologies Corporation/Pratt & Whitney
Eric M. Monte., Principal Quality Assurance Engineer	Rockwell Collins
David Stapes, Manager, Regulatory Compliance	Delta TechOps
Richard (Ric) Peri, Vice President Government & Industry Affairs	Aircraft Electronics Association
Sam Porter, Senior Quality Manager	Sikorsky—A Lockheed Martin Company
Stephanie Branscomb, Director of Operations Quality Manager	Wysong Enterprise
Stephen R. Wysong, President	Wysong Enterprise
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
Paul Hawthorne, Director Global Support Quality	Moog
Gary Daniels, FAA DAR-T DMS Designee	

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—
  - ✓ Annotate the applicable regulations, laws or executive orders—included in AMC.
  - ✓ Are numbered to establish a relationship between the guidance and the underlying regulation—included in AMC
  - ✓ 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—in AMC
  - ✓ Account for oversight of repair stations vis-à-vis amount, type, scope and complexity of the certificate holders' work and its size—recommendation for applying the appropriate "weight" to DCT elements
  - ✓ Align with regulations, laws and executive orders—laws, regulations, executive orders, legal interpretations included in AMC.
- Develop a preliminary and final report containing the recommendations—in progress.

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) = Complete
- 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) = In work.
- FAA representative, Chair and Co-Chair have regular meetings to—
  - ✓ Draft preliminary report, and
  - ✓ Work on AMC

STATUS OF TASKING

- Developing document that puts regulatory compliance information in one place so interrelationships can be shown and taught
  - Numbering is 145-1-A-X-X followed by the regulation copied verbatim from 14 CFR
  - Scope—the legal authority 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 which will not repeat what is available in the Acceptable Means of Compliance
  - Related Regulations—regulations related directly and indirectly to the Acceptable Means of Compliance with no more than a sentence explaining why the section or paragraph is being referenced.
  - Additional Information—legal opinions or interpretations and other legal references for the verbiage in Scope or Acceptable Means of Compliance

AREAS of ARAC CONSIDERATION

Questions for ARM—

If the Working Group needs to discuss issues with the Chief Counsel's Office—how is that request processed? How much lead time would be needed?

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

Keith R. Morgan
Subcommittee Chair

17 June 2021

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

- 2021 Meetings
  - January 26, 2021
  - February 11, 2021 (Ad hoc)
  - April 27, 2021
  - July 27, 2021
  - October 26, 2021

Active Working Groups

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

Look Ahead Report Submittal Schedule to ARAC

- June 2021
  - EHWG Endurance Test Clarification Report
- September 2021
  - TAMCSWG Structural bonding
- December 2021
  - TAMCSWG Crack Interaction

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

27 April 2021

MEMBERS of Flight Test Harmonization Working Group Phase 4

Authorities

FAA
Joe Jacobsen
Bob Stoney
Paul Giesman

EASA
Matthias Schmidt

Transport Canada
Lee Fasken

ANAC (Brazil)
Pedro Donato

OEM's

Airbus
Philippe Genissel
+ SME's

Boeing
Matt Muehlhausen
+ SME's

Bombardier
Tony Spinelli
+SME's

Dassault
Philippe Eichel
+SME's

Embraer
Murilo Ribeiro
Tiago Costa
+ SME's

Gulfstream
Mike Watson
+SME's

Textron
Kurt Laurie
+SME's

ATR
Matthieu Ollivier
Jean-Pierre Marre
+SME's

Airbus Canada
Scott Black
Joel Boudreault
+SME's

DeHavilland Canada
Eric Herrmann
+SME's

Observers

JCAB (Japan)
Shinsuke Yamauchi
Teruke Koike

CAAI (Israel)
Yshmael Bettoun

Norwegian Airlines
John Lande

Operations SME
David Anvid

Centre d'Essais en Vol
Francois MEIGNIEN

Operators

ALPA
John Cinnamon

STATUS OF TASKING

- Tasking for Phase 4 Received in December
- Planning for the 6 tasks is complete
- Work is under way

- 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

FTHWG Phase 4 under way

- Initial deliberation have begun (and are well along) on:
  - TALPA (Key participants to retire)
  - Dry Runway Braking
  - Narrow Runway Certification
- Initial conversations (following extensive planning by leadership
  - team) have begun on Topic 16 (FAME)
  - Kickoff in January
  - Monthly telecons
  - First F2F meeting scheduled for June September to include other discipline SMEs

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.)
- June, 2021 meeting (Seattle) is now planned to be virtual
- Next face-to-face now planned for Cologne, September
  - Have reserved large room to accommodate distancing
  - Will depend on:
    - International travel restrictions
    - Corporate travel restrictions
    - Personal travel restrictions
  - Decision gate in July

FTHWG Phase 4 Meeting Plan

(Accommodating Coronovirus)

	Dassault Bordeaux	~~Boeing Seattle~~ Virtual	~~Easa Cologne~~ Virtual	~~FAA Seattle~~ Virtual	~~Airbus Toulouse~~ Virtual	Boeing Seattle	EASA Cologne	Embraer Melbourne	Easa Cologne	TCCA Ottawa (tbc)	Airbus Toulouse	Textron Wichita	Dassault Paris	US	Europe	US
	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	March 2023	June 2023	Sept. 2023	Dec.2023
Topic #16 ~~HQRM~~ FAME															★	
Topic # 32 TALPA (time of arrival performance)									★							
Topic # 33 Landing Distance on Dry Runway (dispatch)									★							Buffer & Finalisation of Phase V preparation
Topic # 21 Narrow runway operations											★					
Topic # 22 Derate thrust procedures															★	
Topic # 26 Landing in abnormal configurations															★	
ASHWG fallout (25.176)													★			

Started work ahead of tasking

Formal Tasking Period

+ Single-topic telecom each week

★ Recommendation Report to TAE to meet tasking requirements to ARAC

Mostly HQ Specialists

Mostly Performance Specialists

STATUS OF TASKING ACTIVITIES

- Continuing to progress three of the Phase 4 topics virtually
  - Weekly telecons
  - Planned concentrated quarterly meetings – face-to-face when we can return to that format
- Status of progress is getting perilous with loss of productivity due Covid
- Consider progress to be on-track

2021: Anticipated

TAE : 26 January, 27 April, 27 July, 26 October

ARAC: 18 March, 17 June, 16 September, 9 December

AREAS for ARAC CONSIDERATION

- FAME is a very important, multi-disciplinary topic which has caused confusion and has been dis-harmonized for a very long time. We want very much to "get it right" this time.
- Working Group leadership has worked hard to:
  - Allow appropriate time for deliberation
  - Schedule meetings and meeting venues which will maximize multi-disciplinary participation (both from FAA and from EASA; also TCCA, and ANAC and the industry participants)
  - With COVID forcing virtual (less productive) meetings, we considered many options
    - Change of venues, swapping meeting venues, addition of "extra" meetings to accommodate FAME SME's
- The best approach is a face-to-face kick-off in Europe, following up with the December face-to-face in the US, but we need the systems safety and other specialists at these meetings
  - By "kick-off" we mean with the expanded SME participation; FTHWG has been meeting on this topic virtually since January.
- We are aware of an FAA/DOT policy limiting participation to 2 FAA employees at international meetings
  - We are seeking relief from this policy for this topic (in particular for the September meeting in Cologne).

Transport Airplane Metallic and Composite Structures Working Group

Recommendation Report, Extension Topics, Briefing to the TAE – April 2021 meeting

Doug Jury (Delta Air Lines)
Working Group Chair

April 27, 2021

Members of the Working Group

- Industry WG voting members:
  1. Kevin Davis (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. 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); 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

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.

SUMMARY OF TASKING – extended topics (continued)

Working Group continues to work through the remaining two items through smaller tasking groups, consisting of 4-8 WG member teams (aka subteam)

Final report delivery scheme will be two separate reports

- As with SDC/SLP report, no rule change expected for any of the tasks. Guidance change only.
- Structural bonds guidance development is progressing.
- Evident there is wider variety of engineering positions on guidance for crack interaction – some generally favorable direction on development of general guidance recommendations.

COVID-19 pandemic created challenges for the Aviation Industry to continue full-time efforts on remaining topics.

- A negative economic impact experienced by most companies
- Resources (finances and personnel) are diminished, which has resulted in higher work-load , furloughs, or shorter work hours for working group members
- Working Group focused efforts mostly on one report at a time

SUMMARY OF TASKING – extended topics (continued)

Item 2: Structural bonds & Weak Bonds

- FAA requests further clarification from the working group on how to address disbands and weak bonds as a manufacturing defect
  - "Weak bonds listed under manufacturing defects is somewhat confusing because, although it is clearly a manufacturing defect, it is unlike any of the other manufacturing defects that are typically listed (i.e., all others are relatively small and either starter flaws for metal fatigue or allowable defects for composites)."
  - "Bonding may be acceptable to use if stringent/reliable manufacturing in-process quality control practices are in place to ensure that a weak bond is: 1) extremely rare (justifying the size constrained by 2.) and 2) localized to a size at or within arresting design features."

  - No rule change proposed.
  - Guidance changes under consideration:
    - AC 20-107B: additional modification – proposed change recommendations for WG review: Parag. 6, 8, 10
    - AC 25.571-1D: under the original report (section 3.1.2 wrt metal-to-metal bonding)
    - AC 21-26: reviewed but no changes proposed because of no mention of structural bonding
    - BRSL – proposed edits to para. 10 in AC 20-107B; objective: alignment with BRSL
  - Other proposals include continuation of regulatory & industry activities to promote knowledge transfer and best practices (manufacturing, design and engineering) that can provide benefit supplemental to regulatory materials updates (guidance)
  - Rationale for quality control document content

SUMMARY OF TASKING – extended topics (continued)

Item 2: Structural bonds & Weak Bonds (Continued)

- Much of work prepared and under review by subteam
  - Initial draft shared with full WG team and responses, mostly favorable, received.
  - Two WG members sharing dissenting position on classification of large disbond (between arresting features) being Category 2 damage (damage that hasn't lowered strength below limit load capability and detectable at next maintenance visit).
    - One expressed concern about whether disbond will be reliably detectable by visual alone (i.e., without specialized NDT)
  - Updated discussions on SDC vs new term Damage Tolerance Design Considerations (DTDC).
  - Other addition of corrosion having been seen as precursor to bond degradation in metal bond applications
  - Updated cost & benefit

- Discussed with ARAC to present report at the June 2021 meeting. Should be prepared for presentation at next TAE meeting.
  - Need ad hoc TAE meeting to support

SUMMARY OF TASKING – extended topics (continued)

Item 3: Crack interaction

- Team direction:
  - Rule change:
    - No – general consensus position as of now
    - Currently ~~one~~ 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.
    - Will likely be two sets of recommendations – each supported by rationale by subset of WG team
    - Based on observed roadblocks, FAA has provided feedback to sub-team as to what items they would like to see addressed in report.
  - Latest attempt to draft report to capture the above has been prepared by WG member submitted to smaller team for initial review. Work has progressed in development of a draft report in review and editing process, but nothing otherwise new to report at this time.
  - ARAC agreeable to presenting this report at September 2021 meeting.

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

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
  - 3: Crack Interaction Late 2021

[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 to the
Aviation Rulemaking Advisory Committee

Melissa Bravin
Allan van de Wall
Working Group Co-Chairs

15 April 2020

MEMBERS of ICI WG

Member Name	Organization	Role
Alan Strom	(FAA-ANE Standards) FAA Representative	FAA Representative
Philip Haberlen	(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
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.
        a) Under Tasks 1 and 2, 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

- FAA (Haberlen) requested extension of ICI ARAC through July 2022, due to COVID-19
- Weekly teleconferences were held January-March 2021
- Biweekly teleconferences during April 2021 onwards, for foreseeable future

STATUS OF TASKING

- **Agenda items related to Appendix D atmospheric definition**
  - Definition of “cold part” (upper left-hand portion) of Appendix D envelope
    - Proposal to fair in TWC at a higher level (adiabatic vs. 0.65% adiabatic) down to current HAIC-HIWC TWC levels for cold part of envelope
  - Address uncertainty due to effect of continental vs. oceanic MCS
  - Mixed Phase (liquid + ice water) atmospheric definition discussion
    - Potential use of existing Appendix C definition (note: no change to Appendix C)
    - Probe susceptibility to mixed phase
  - Discussion on new scalar for TWC envelope (current definition is 65% of adiabatic model)
- **Actions regarding potential of elevated TWC levels in high aerosol regions**
  - ARAC ECD December 2021
  - FAA/ U of Nagoya high aerosol flight campaign scheduled for 2023
- **Sub-Team:** Probability analysis for ICI encounters, ARAC members tasked to develop Probability of MCS Encounter
- **Analysis of in-service events vs. currently defined App D envelopes**
- **Economic impact analysis**
- **Additional recommendations for AC 20-147A & ARAC report**

AREAS of ARAC CONSIDERATION

- None

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

Clark Badie
Working Group Chair

27 May 2021

MEMBERS of ASHWG

Dave Leopold	Boeing	David.D.Leopold@boeing.com
Chris Heck	ALPA	Chris.heck@alpa.org
Marshall Ekstrand	ALPA	Marshall.Ekstrand@alpa.org
Remy Dayre	Airbus	remy.dayre@airbus.com
Janiece Lorey	Gulfstream	janiece.lorey@gulfstream.com
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Alex Rummel	Gulfstream	Alex.Rummel@gulfstream.com
Benoit Berthe	ATR	BENOIT.BERTHE@atr-aircraft.com
Damien Roujas	ATR	DAMIEN.ROUJAS@atr-aircraft.com
Jean Baron	EASA	jean.baron@easa.europa.eu

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.

SCHEDULE

- Initial meeting held February, 2021
- Monthly meetings will be needed to facilitate the discussion needed to complete this task. Telecons and electronic correspondence will be used to the maximum extent possible.
- Planned completion: Q3 2022

STATUS OF TASKING

- Initial meetings conducted, work plan issued and reviewed with TAEIG.
- The ASHWG will need to collect additional in-service data to help characterize the relationship between runway overruns and aircraft equipped with ground spoilers, and whether ground spoilers were armed prior to landing.
  - Collection of data is essential to validate whether any changes are required.
  - For awareness, the group is reaching out though group connections for data sources including data from IATA, CAST, and ASIAS
- The ASHWG will also collect other information about ground spoiler operation where alerting may provide improved awareness.
- To help establish a baseline, the working group will identify and aggregate any existing regulations, advisory materials, operational standards, or other industry information related to the airworthiness and operation of ground spoilers for transport category aircraft.

AREAS of ARAC CONSIDERATION

None at the moment

Training Standardization Working Group Recommendation Report Briefing to the Aviation Rulemaking Advisory Committee

Brian Koester

Working Group Chair

June 03, 2021

Training Standardization Working Group MEMBERS

First Name	Last Name	Company Name
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.
Annmarie	Stasi	Talon Air, LLC
Daniel	Von Bargen	Jet Aviation Flight Services, Inc.
Mike	Walton	Textron

FAA SMEs
Rob Burke
Mary Thompson
Paul Preidecker
Tim Vander Ploeg
Russ Megargle
Mariellen Couppee
Shannon Salinsky
Josh Tarkington

** 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:

1. Recommend a detailed master schedule for the development of part 135 standardized curricula for each aircraft or series of aircraft;

2. 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.
- If unable to meet the abovementioned deadlines, the TSWG Chair will recommend that ARAC request an extension from the FAA.
- 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.

RECOMMENDATION(S)

1. Aircraft Master Schedule / Priority List.
   - Recommend the master schedule for aircraft-specific standardized curriculum development as submitted, determined through research and data analysis, the priority in which each aircraft or series of aircraft curriculum will be developed.
2. Flagship Aircraft Identified.
   - Recommend the aircraft-specific standardized curricula to be developed for the GV series as the flagship aircraft, including the GV, G450, and G550 variants, incorporating the maneuvers, procedures, and functions to be performed during training and checking.
3. Instructor and Check Pilot Qualification Curriculum.
   - Recommend the submitted standardized curriculum to qualify part 142 training center instructors and evaluators (check pilots) to provide part 135 training, testing, and checking. This curriculum comprises the requirements and subjects necessary for initial qualification, recurrent training, requalification, differences and bridging training, new aircraft types, new simulator operating systems, and non-aircraft subjects.

Type Certificate Holder	Civil Model Designation	Current Type Rating Designation
Gulfstream Aerospace Corporation	GIV-X, GIV-X (G350), GIV-X (G450), GV, GV-SP, GV-SP (G500), GV-SP (550)	G-V
Textron Aviation Inc.	DH.125 Series BH.125 Series HS.125 Series BAe.125 Series 800 Hawker 750, Hawker 800 Hawker 800XP Hawker 850XP Hawker 900XP	HS-125
Textron Aviation Inc.	560XL, 560XLS, 560XLS+	CE-560XL
Gulfstream Aerospace Corporation	G-IV, G-IV (G300), G-IV (G400)	G-IV
Textron Aviation Inc.	300, 300LW, B300, B300C, (BE-300F)	BE-300
Embraer S.A.	EMB-505 (Single Pilot) EMB-505 (SIC Required; SIC limitation is required)	EMB-505
Learjet Inc.	23, 24, 24A, 24B, 24D, 24E, 24F, 25, 25B, 25C, 25D, 25F, 28, 29, 31, 31A, 35, 35A, 36, 36A 55, 55B, 55C	LR-JET
Textron Aviation Inc.	525, 525A, 525B, 525C (SIC Required) 525, 525A, 525B, 525C (Single Pilot)	CE-525 & CE-525S
Bombardier Inc.	BD-100-1A10 (Challenger 300)	CL-30
Textron Aviation Inc.	MU-300, MU-300-10, 400, 400A, 400T	MU-300, BE-400
Textron Aviation Inc.	750	CE-750
Learjet Inc.	45	LR-45

Type Certificate Holder	Civil Model Designation	Current Type Rating Designation
Textron Aviation Inc.	90, 200, 250, (non-typed) & 200T, 200CT, A200CT, B200C, B200T, B200CT, B200 Model 200 series with Commuter Category STC applied (typed),	BE-200
Yaborã Indústria Aeronáutica S.A.	EMB-135ER, EMB-135LR, EMB-135KE, EMB-135KL, EMB-135BJ, EMB-145, EMB-145ER, EMB-145MR, EMB-145LR, EMB-145XR, EMB-145MP, EMB-145EP	EMB-145
Textron Aviation Inc.	500, 501, 550, S550, 551, 552, 560	CE-500
Bombardier Inc.	CL-600-2B16 (CL-604 variant)	CL-604
Learjet Inc.	60	LR-60
Pilatus Aircraft Ltd.	PC-12-47/E	PC-12-47/E
Dassault Aviation	Mystère Falcon 50 Mystère Falcon 900 Falcon 900EX	DA-50
Textron Aviation Inc.	680, 680A	CE-680
Dassault Aviation	Falcon 2000 Falcon 2000EX	DA-2000
Gulfstream Aerospace LP	Galaxy, Gulfstream 200	G-200
Textron Aviation	Cessna 208 Caravan CE-208	
Dassault Aviation	DA-2000DX, DA-2000LX DA-2000EX EASy	DA-2EASY

Type Certificate Holder	Civil Model Designation	Current Type Rating Designation
Gulfstream Aerospace Corporation	GVI (G650)	GVI
Embraer S.A.	EMB-500 (Single Pilot) EMB-500 (SIC Required; SIC limitation is required)	EMB-500
Embraer S.A.	EMB-545, EMB-550	EMB-550
Eurocopter (Airbus)	EC135	EC135
Dassault Aviation	Falcon 7X	DA-7X
Dassault Aviation	DA-900DX, DA-900LX DA-900EX EASy	DA-EASY
Textron Aviation Inc.	4000	RA-4000
Textron Aviation Inc.	650	CE-650
Bombardier Inc.	CL-600-1A11 CL-600-2A12 CL-600-2B16 (CL-601-3A and CL-601-3R variants)	CL-600
Gulfstream Aerospace LP	Gulfstream G280	G-280
Sikorsky Aircraft Division of United Aircraft Corporation, USA	SK-76	SK-76
Yaborã Indústria Aeronáutica S.A.	EMB-120, EMB-120RT, EMB-120ER, EMB-120FC, EMB-120QC	EMB-120
Gulfstream Aerospace Corporation	G-1159, G-1159A, G-1159B,	G-1159
Honda Aircraft Company LLC	HA-420	HA-420
Gulfstream Aerospace LP	Gulfstream G150	G150

Type Certificate Holder	Civil Model Designation	Current Type Rating Designation
Textron Aviation Inc.	390 (SIC Required) & 390 (Single Pilot)	RA-390 & RA-390S
Leonardo S.p.a.	AB139, AW139	AB-139, AW-139
Bombardier Inc.	BD-700-1A10 BD-700-1A11	BBD-700
The Boeing Company	737-100, 737-200, 737-200C, 737-300, 737-400, 737-500, 737-600, 737-700, 737-700C, 737-800, 737-900, 737-900ER, 737-8, 737-9	B-737
Gulfstream Aerospace LP	1125 Westwind Astra, Astra SPX Gulfstream 100	IA-1125, G-100
Pilatus Aircraft Ltd.	PC-24	PC-24
MHI RJ Aviation ULC	CL-600-2B19 CL-600-2C10 CL-600-2C11 CL-600-2D24 CL-600-2D15	CL-65
Textron Aviation Inc.	1900, 1900C, 1900D	BE-1900
Viking Air Limited	SD3-30, SD3-60, SD3-SHERPA, SD3-60 SHERPA	SD-3
M7 Aerospace LLC (*) when operating in the restricted category and complying with applicable Notes from TCDS A5SW (**) Type rating not required when operating in compliance with Notes 11 and 14 from TCDS A5SW.	SA226-AT (*) SA226-T(B) (*) SA226-TC, SA227-AC, SA227-BC, SA227-AT SA227-CC, SA227-DC, SA227-PC SA227-TT (**)	SA-227

Type Certificate Holder	Civil Model Designation	Current Type Rating Designation
Bell Helicopter	Bell-430	Bell-430
Textron Aviation Inc.	510 (SIC Required) 510 (Single Pilot)	CE-510 & CE-510S
Gulfstream Aerospace Corporation	GVII-G500 GVII-G600	GVII
Eurocopter (Airbus)	EC145	EC145
Dassault Aviation	Fan Jet Falcon Fan Jet Falcon Series C Fan Jet Falcon Series D Fan Jet Falcon Series E Fan Jet Falcon Series F Fan Jet Falcon Series G Mystère Falcon 20-C5 Mystère Falcon 20-D5 Mystère Falcon 20-E5 Mystère Falcon 20-F5	DA-20
Sikorsky Aircraft Corporation	S-92A	SK-92
Piaggio Aircraft Ltd.	P-180	P-180
Bombardier Inc.	DHC-8-100 Series DHC-8-200 Series DHC-8-300 Series DHC-8-400 Series	DHC-8
Saab AB, Support and Services	340A (SAAB/SF340A) SAAB 340B	SF-340
Bell Helicopter	Bell-412	Bell-412
Dassault Aviation	Falcon 10	DA-10
Learjet Inc.	75	LR-75
Israel Aircraft Industries Ltd.	1121, 1121A, 1121B, 1123, 1124, 1124A	IA-JET
Bell Helicopter	Bell-429	Bell-429

Instructor/Check Pilot Standardized Curriculum Qualification Course

1. Objective
2. Modules
    a. An approved Part 142 training program
    b. Additional 135 training
        i. Review of guidance documents
        ii. Operations Specifications, Regulations, Policies, and Procedures
3. Instructional Delivery Methods
4. Completion Standards

DISSENT(S)

- None at this time.

DPE Reform Working Group Recommendation Report Briefing to the Aviation Rulemaking Advisory Committee

Sean Elliott, EAA Vice President

Working Group Chair

June 17th, 2021

MEMBERS/OBSERVERS of DPE Reform Working Group

Jason	Blair	Independent	WG Member
Paul	Cairns	Embry Riddle Aeronautical University	WG Member
Lisa	Campbell	Air-Mods Flight Training Center	WG Member
Chris	Cooper	Aircraft Owners and Pilots Association	WG Member
MaryAnne	DeMarco	Coalition of Airline Pilots Association	WG Observer
Mark	Dilullo	Threshold Technologies, Inc.	WG Member
Jon	Dodd	Coalition of Airline Pilots Association	WG Member
Mark	Ducorsky	Independent	WG Member
Sean	Elliott	Experimental Aircraft Association	WG Chair
Dan	Fluke	Air Line Pilots Association	WG Member
Jonathan	Freye	National Air Transportation Association	WG Member – low attendance
Stephen	Gatlin	Pan Am International Flight Academy	Withdrew from WG 02-11-21
Lauren	Haertlein	General Aviation Manufacturers Association	WG Observer
Thom	Holden	Federal Aviation Administration	WG Member
John	Kovar	Federal Aviation Administration	WG Member
Zachary	Noble	Helicopter Association International	WG Member
Randy	Rowles	Helicopter Institute / HAI	WG Member
David	Sullivan	Independent	WG Member
Tim	Tucker	Robinson Helicopter Company	WG Member

Thom	Holden	Federal Aviation Administration	WG Support
Jay	Kitchens	Federal Aviation Administration	WG Support
John	Kovar	Federal Aviation Administration	WG Support
Trey	McClure	Federal Aviation Administration	FAA Lead Support
Susan	Parson	Federal Aviation Administration	WG Support
Robert	Reckert	Federal Aviation Administration	WG Support
Bruce	Rengstorf	Federal Aviation Administration	WG Support
Mallory	Woodcock	Federal Aviation Administration	WG Support
Shawn	Knickerbocker	Independent DPE – **late add	WG Observer

SUMMARY OF TASKING

The DPE Reforms WG will:

- Provide advice and recommendations to the ARAC on the most effective ways to identify areas of needed reform with respect to regulatory and policy changes necessary to ensure an adequate number of designated pilot examiners are deployed and available to perform their duties to meet the growing public need.
- The Group should review any relevant materials to assist in achieving their objective.
- Review all regulatory and policies related to designated pilot examiners appointed under 14 CFR 183.23. Specific areas include, but are not limited to, 14 CFR part 183, 14 CFR part 61, FAA Order 8900.1, FAA Order 8900.2, and FAA Order 8000.95.

SUMMARY OF TASKING (con't)

- Will make recommendations with respect to the regulatory and policy changes if necessary to allow a designated pilot examiner perform a daily limit of 3 new check rides with no limit for partial check rides and to serve as a designed pilot examiner without regard to any individual managing office.
- If the task could result in recommendations with substantive changes to policies and rulemaking, then the working group will consider the role of potential qualitative and quantitative costs and benefits, including impacts to resources, of these recommendations compared to their alternatives.
  - If available, the working group should provide preliminary cost and benefit information in the report.
- Develop a report containing recommendations on the findings and results of the tasks explained above.
  - The recommendation report should document both majority and dissenting positions on the findings and the rationale for each position.
  - Any disagreements should be documented, including the rationale for each position and the reasons for the disagreement.
- The working group may be reinstated to assist the ARAC by responding to the FAA's questions or concerns after the recommendation report has been submitted.

SCHEDULE

- Full WG #1 meeting held October 29, 30, 31st in Washington, D.C.
- Three Subgroups Launched during the WG 1st meeting. Subgroups electronically meeting bi-weekly until tasks complete and ready for update and review during in person WG mtg #2
- COVID 19 impacts require termination of in person meetings – shifted to virtual format for a timeframe TBD.
- Full WG #2 meeting held virtually on March 19th via a Go2Meeting platform. Reviewed progress of all 3 subgroups.
- Full WG #3 meeting held virtually on May 21st via a Zoom platform. Briefings from senior FAA leadership, AFS status on Airman Certification ODA policy, and progress review for all 3 subgroups.
- Full WG #4 meeting held virtually on June 24th via a Zoom platform. AFB 720 reviewed IACRA capabilities current state, full group review of progress and emphasis of the process of merging appropriate recommendation concepts across the 3 sub groups, briefing of ARAC's approval of timeline extension of 6 months if needed, and progress review for all 3 subgroups.

SCHEDULE

- Full WG #5 meeting held virtually on August 11th via a Zoom platform. AFS briefing on recent situation with fraudulent examiner activity, AFS briefing on ODA draft policy status, review of a proposed DPE Code of Conduct developed within the aviation community and discussion of COC elements that might be applicable for inclusion into recommendations, review of merging of concepts status and cross pollination of recommendation concepts, and progress review for all 3 subgroups.
- Full WG #6 meeting held virtually on October 1st via a Zoom platform. AFS updated the group on 737 Max effects on delegation management and ODA policy timeline, Kevin Clover of the FAAST team presented information on new/existing apps that could be useful for DPE work, the group discussed Code of Conduct vs Code of Ethics and it potential use as a tool, Continued to review merging of concepts and cross pollination of recommendations, Introduced a new Strawman document for the consolidation of a three subgroup recommendations into a final document, and progress review for all 3 subgroups.
- Full WG #7 meeting held virtually on November 19th via a Zoom platform. Karen Lucke, AFS-600 Acting Division Manager, was introduced to the group and addressed the importance of the work being done, an update on the Code of Conduct was provided, additions and modifications to the Strawman document were reviewed, a new form for recommendation documentation for the3 subgroups was introduced, full WG review of the recommendations from each of the 3 sub groups were discussed and debated, the selection Matrix was discussed and debated, A status color coding system was agreed upon for inclusion with the recommendation submissions documentation.
- Full WG #8 meeting held virtually on December 17th, 2020 via a Zoom platform. Karen Lucke, AFS-600 Acting Division Manager, addressed the group and recognized the work that is ongoing. Support Tools needed and Job Aids were discussed with the full group, a review of Misc items was completed and close outs were determined. A review of the various aspects of virtual surveillance, both positive and negative was taken. A dynamic discussion on termination appeal policy and opportunities for increasing transparency was had. Focus on the Selection Matrix was postponed until the January meeting.
- Full WG #9 meeting held virtually on January 21, 2021 via a Zoom platform. Final progress reports from each of the 3 subgroups were made, Rob Burke made a presentation on Gov models for improved transparency focusing on ASAP parallel efforts. The final schedule for completion of the recommendations was reviewed and agreed upon.

SCHEDULE

- Trey and Sean met with Thuy Cooper on Feb 4th to review formatting and submission aspects of DPERWG recommendations. May 14th 2021 is the deadline for submission of DPERWG recommendations with a full review planned for the June ARAC meeting.
- Full WG #10 meeting held virtually on February 18th via a Zoom platform. Karen Lucke welcomed the group and thanked all for the strong efforts to date. Final submission process to ARAC was reviewed. A futher discussion on Ethics and Conduct was held and it was agreed that a component of this topic would be appropriate to include in the final recommendations. A strawman recommendation document was introduced and reviewed with appropriate format and broad buckets of topical areas. The selection matrix was distributed and reviewed with feedback from the group on its content and weighting. Members were asked to run through known individuals as a means of test driving the matrix and validation of the scoring measures. A follow up discussion on a Random Test Generator concept was held. A review of video and communication technology privacy protections was conducted. Sub groups leads were asked to meet virtually on March 9th to discuss prioritizations of topics and recommendations moving forward.
- Full WG #11 meeting was held on March 24th via a Zoom platform. Draft final document was refined and gaps identified.
- Full WG #12 meeting was held on April 22nd via a Zoom platform. Refined draft final document reviewed and format needs were addressed.
- Full WG #13 meeting was held on May 6th via a Zoom platform. Refinements and edits made to ensure accuracy and inclusion of all needed supporting concepts.
- Final full WG meeting was held on May 18th via a Zoom platform. Last review and check of final document. Completed report was deemed ready for submission.
- Final report was submitted to ARAC on May 26th

RECOMMENDATION(S)

- Recommendation #1: Establishment of a Standardized and Structured Flow for DPE Selection
- Recommendation #2: Implementation of an Updated and Enhanced Base Criteria Set
- Recommendation #3: Development of FAA-Issued, Standardized tooling to promote efficiency and accuracy in the DPE process
- Recommendation #4: Deploy an automated survey system to more quickly and accurately track DPE performance and merit
- Recommendation #5: Reduce Inconsistencies in Designee Guidance
- Recommendation #6: Allow DPEs with Medical Disqualifications to Perform Non Flight Practical Tests

RECOMMENDATION(S)

- Recommendation #7: Apply ATP Segmented Examination Concept to Differentiate Between Ground and Flight Testing for All Practical Test Scheduling
- Recommendation #8: Develop a Formal Mentorship Program
- Recommendation #9: Develop and implement a national level oversight structure that focuses on the selection, training, deployment, and oversight of DPEs
- Recommendation #10: Improve, Enhance, and Promote the FAA Designee Locator
- Recommendation #11: Allow Equivalent Pilot-In-Command Medical Requirements for DPEs
- Recommendation #12: Categorize and Limit Examinations to Six Testing Events Per Day

DISSENT(S)

The development of Recommendation #7 did yield some lively debate and discussion. In the end of the process, there was no actual dissent from within the DPERWG on any of these recommendations.

One item, while not a recommendation, was documented as an "Emphasis Item". That is the consideration of an industry based Code of Conduct. Again, the full DPERWG supported this concept without dissent as well.

- Emphasis Item #1: Industry Based Code of Conduct

ARAC Working Group
150 Hour Alternate Endurance Test
14 CFR 33.87

Summary of Revised Final Report Addressing FAA Requests for Clarification

Prepared for TAE – 27 April 2021

Peter Turyk (P&WC) – Working Group Chair

Alternate Endurance test – CAPP Action Item

At CAPP meeting #16, Regulator concerns were presented

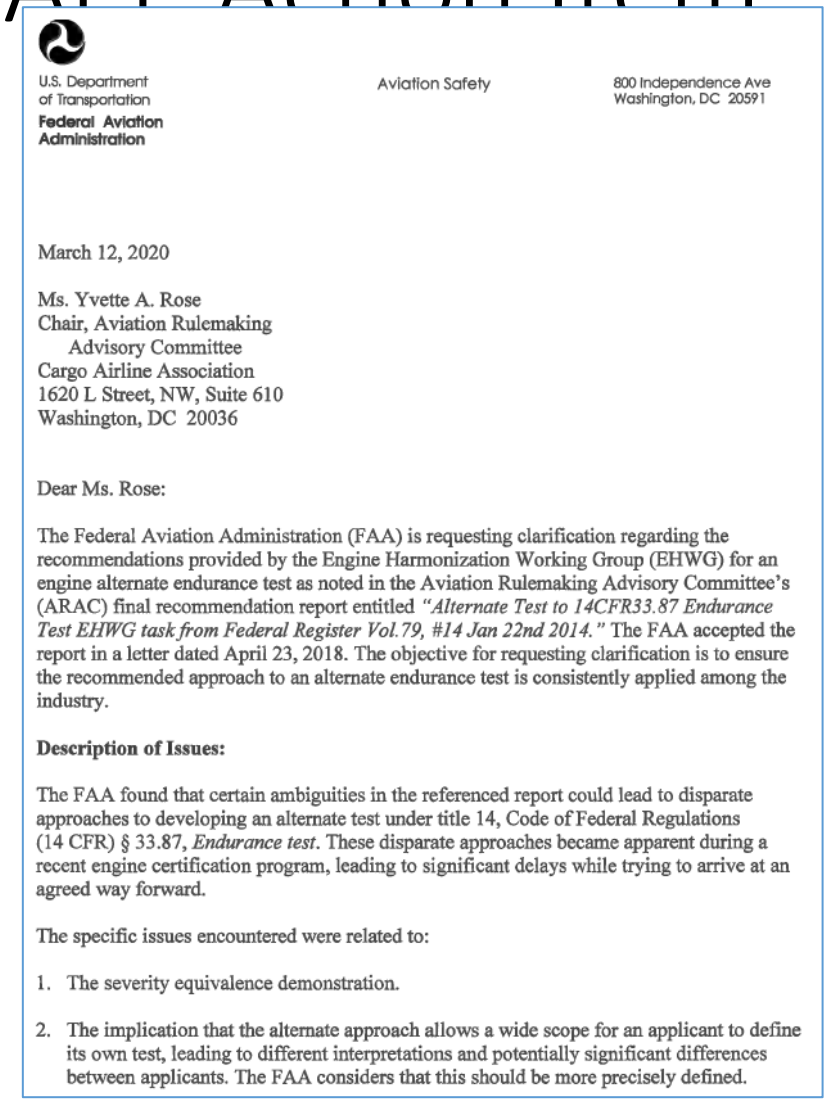
- Industry was asked for clearer detail on specific items leading to reopening of ARAC WG (ACTION 16-09I).

Specific items were identified as follows:

- Severity equivalence demonstration clarification
- "Hybrid test", clarification of prescriptive elements (including CPA purpose)
- Use of "T_{metal}" approach, re-assessment

Letter itemizing concerns & requesting reconvening of Alternate Endurance Test WG delivered by FAA to the ARAC (12 March 2020)

- TAE took the action to respond



U.S. Department of Transportation
Federal Aviation Administration

Aviation Safety

800 Independence Ave
Washington, DC 20591

March 12, 2020

Ms. Yvette A. Rose
Chair, Aviation Rulemaking
Advisory Committee
Cargo Airline Association
1620 L Street, NW, Suite 610
Washington, DC 20036

Dear Ms. Rose:

The Federal Aviation Administration (FAA) is requesting clarification regarding the recommendations provided by the Engine Harmonization Working Group (EHWG) for an engine alternate endurance test as noted in the Aviation Rulemaking Advisory Committee's (ARAC) final recommendation report entitled *"Alternate Test to 14CFR33.87 Endurance Test EHWG task from Federal Register Vol.79, #14 Jan 22nd 2014."* The FAA accepted the report in a letter dated April 23, 2018. The objective for requesting clarification is to ensure the recommended approach to an alternate endurance test is consistently applied among the industry.

Description of Issues:

The FAA found that certain ambiguities in the referenced report could lead to disparate approaches to developing an alternate test under title 14, Code of Federal Regulations (14 CFR) § 33.87, *Endurance test*. These disparate approaches became apparent during a recent engine certification program, leading to significant delays while trying to arrive at an agreed way forward.

The specific issues encountered were related to:

1. The severity equivalence demonstration.

2. The implication that the alternate approach allows a wide scope for an applicant to define its own test, leading to different interpretations and potentially significant differences between applicants. The FAA considers that this should be more precisely defined.

Current Team Membership

Peter Turyk* (Chair)	Pratt & Whitney Canada
Phil Haberlen	FAA-ANE Standards
Antony Boud*	EASA
Yves Cousineau*	Transport Canada
Keith Morgan	Pratt & Whitney
Ed Barry	GE Aviation
Colin French	Rolls-Royce plc
Bruce Cook	Rolls-Royce Deutschland Ltd & Co KG
Joelle Rambour	SAFRAN
Doug Hogge*	Williams International
Pat Markham*	HEICO
Pierre-Emmanuel Arnaud	Airbus
Dave Manion	Boeing

* Continuing from original Alternate Endurance Test Working Group

Other Participants/Subject Matter Experts:

Alan Strom	FAA-ANE Standards (currently on detail)
Brent Hart	Office of Rulemaking, FAA

Alternate Endurance test – WG activity summary

WG reconvened to address 6 specific feedback items/questions

- Severity equivalence process and its intended purpose.
- Severity equivalence process for other than creep failure modes, including failure modes not currently addressed by § 33.87 regulation.
- Constraints for implementing the recommended hybrid performance-based and prescriptive solutions.
- Role of the engine CPA.
- Simplify the possible approaches by removing the T_{metal} option.
- Various acceptable outcomes for an alternate endurance test.

Weekly meetings – target completion 2021Q1

Subgroups formed to address individual questions

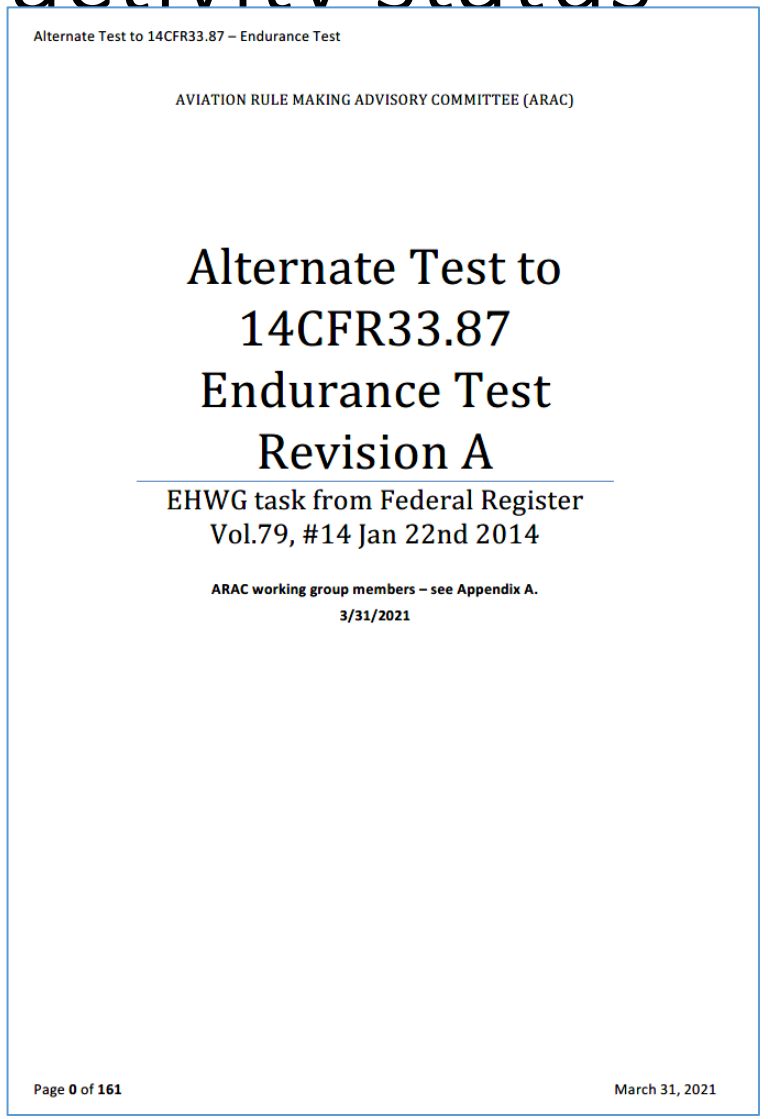
- most discussed issues were: severity equivalence & T_{metal} option

All questions addressed & consensus response reached
Revised Final Report submitted to TAE 31 March 2021

Alternate Endurance test – WG activity status

Original Final Report was revised where required to address areas of requested clarification:

- Corrections made in main body of report to distinguish & clarify roles of CPA & severity assessment
- Additional **Section 12** contains detailed responses to the six questions
- Supplementary material added as **Appendix K** (Section 13) to assist in preparation of future guidance, as deemed appropriate

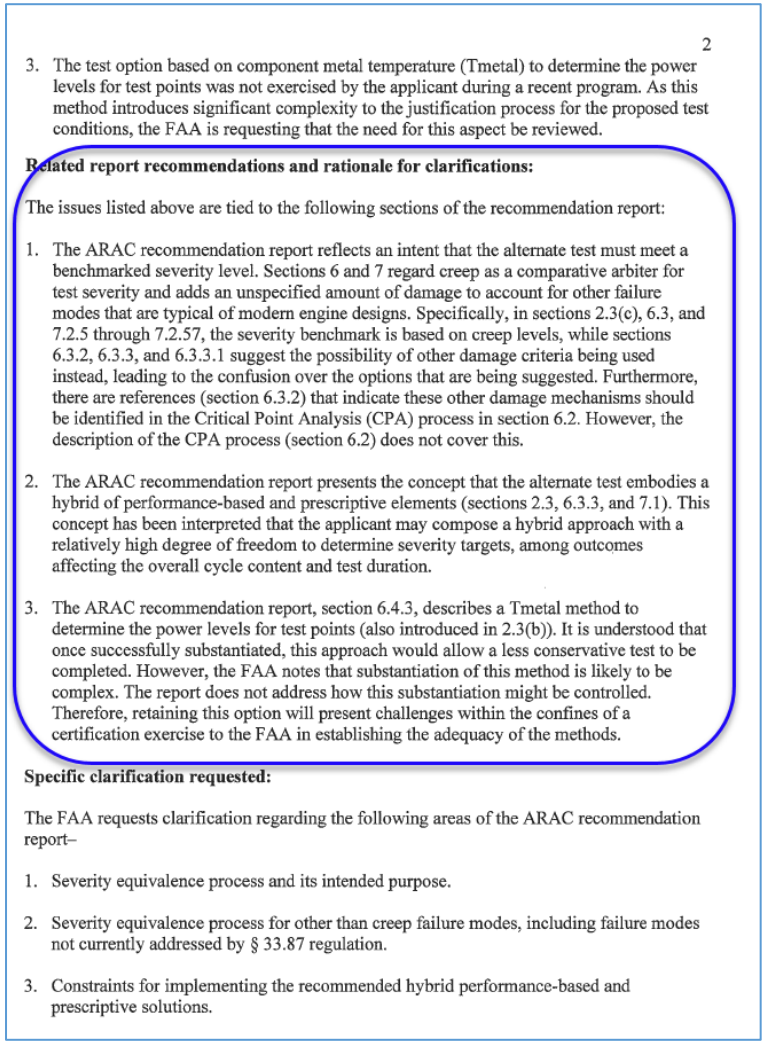


Response Format

Two sections of the response:

- Preamble observations
- Specific clarifications

“Preamble observations”



3. The test option based on component metal temperature (Tmetal) to determine the power levels for test points was not exercised by the applicant during a recent program. As this method introduces significant complexity to the justification process for the proposed test conditions, the FAA is requesting that the need for this aspect be reviewed.

Related report recommendations and rationale for clarifications:

The issues listed above are tied to the following sections of the recommendation report:

1. The ARAC recommendation report reflects an intent that the alternate test must meet a benchmarked severity level. Sections 6 and 7 regard creep as a comparative arbiter for test severity and adds an unspecified amount of damage to account for other failure modes that are typical of modern engine designs. Specifically, in sections 2.3(c), 6.3, and 7.2.5 through 7.2.57, the severity benchmark is based on creep levels, while sections 6.3.2, 6.3.3, and 6.3.3.1 suggest the possibility of other damage criteria being used instead, leading to the confusion over the options that are being suggested. Furthermore, there are references (section 6.3.2) that indicate these other damage mechanisms should be identified in the Critical Point Analysis (CPA) process in section 6.2. However, the description of the CPA process (section 6.2) does not cover this.

2. The ARAC recommendation report presents the concept that the alternate test embodies a hybrid of performance-based and prescriptive elements (sections 2.3, 6.3.3, and 7.1). This concept has been interpreted that the applicant may compose a hybrid approach with a relatively high degree of freedom to determine severity targets, among outcomes affecting the overall cycle content and test duration.

3. The ARAC recommendation report, section 6.4.3, describes a Tmetal method to determine the power levels for test points (also introduced in 2.3(b)). It is understood that once successfully substantiated, this approach would allow a less conservative test to be completed. However, the FAA notes that substantiation of this method is likely to be complex. The report does not address how this substantiation might be controlled. Therefore, retaining this option will present challenges within the confines of a certification exercise to the FAA in establishing the adequacy of the methods.

Specific clarification requested:

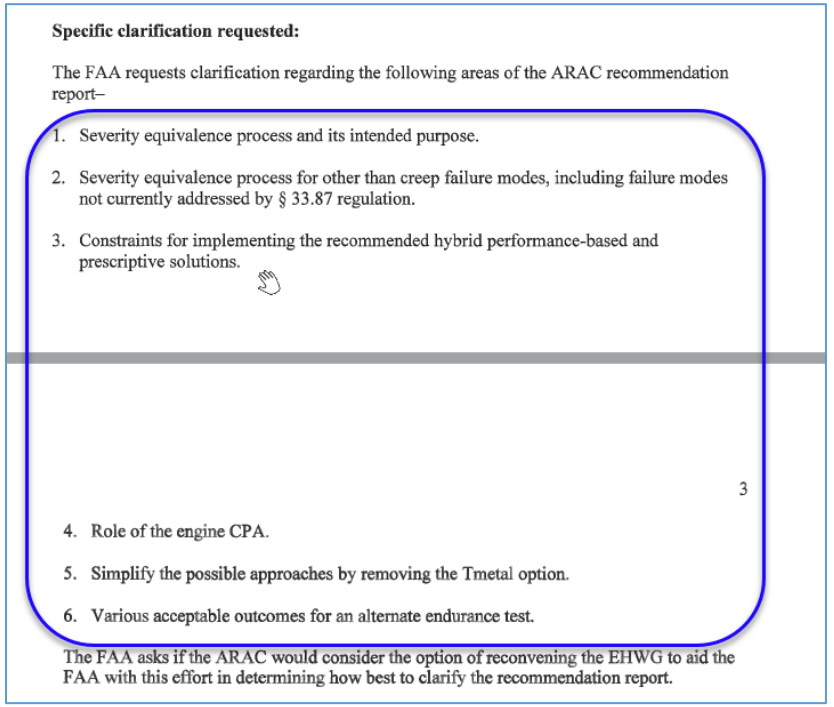
The FAA requests clarification regarding the following areas of the ARAC recommendation report–

1. Severity equivalence process and its intended purpose.

2. Severity equivalence process for other than creep failure modes, including failure modes not currently addressed by § 33.87 regulation.

3. Constraints for implementing the recommended hybrid performance-based and prescriptive solutions.

“Specific clarifications”



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4. Role of the engine CPA.

5. Simplify the possible approaches by removing the Tmetal option.

6. Various acceptable outcomes for an alternate endurance test.

The FAA asks if the ARAC would consider the option of reconvening the EHWG to aid the FAA with this effort in determining how best to clarify the recommendation report.

FAA Letter – preamble observations 1/3

"1. The ARAC recommendation report reflects an intent that the alternate test must meet a benchmarked severity level. Sections 6 and 7 regard creep as a comparative arbiter for test severity and adds an unspecified amount of damage to account for other failure modes that are typical of modern engine designs. Specifically, in sections 2.3(c), 6.3, and 7.2.5 through 7.2.57, the severity benchmark is based on creep levels, while sections 6.3.2, 6.3.3, and 6.3.3.1 suggest the possibility of other damage criteria being used instead, leading to the ***confusion over the options that are being suggested***. Furthermore, there are references (section 6.3.2) that indicate these ***other damage mechanisms should be identified in the Critical Point Analysis*** (CPA) process in section 6.2. However, the ***description of the CPA process (section 6.2) does not cover this***."

Response:

While sections 6 and 7 do indeed regard creep as the comparative arbiter, ***other damage mechanisms*** mentioned in Sections 6.3.2, 6.3.3, and 6.3.3.1 are to be assessed ***in addition to creep*** (not "instead of"), and are ***not intended to replace creep***. The severity of creep damage in the alternate test must match at least the severity of the current test.

Sections 6.2 and 6.3.3.1 have been revised accordingly to clarify that the CPA is intended to establish the conditions for assessing severity, and that it is the severity assessment which defines creep damage to be demonstrated and identifies other relevant damage mechanisms.

FAA Letter – preamble observations 2/3

"2. The ARAC recommendation report presents the concept that the alternate test embodies a hybrid of performance-based and prescriptive elements (sections 2.3, 6.3.3, and 7.1). This concept has been interpreted that the applicant may compose a ***hybrid approach*** with a ***relatively high degree of freedom to determine severity targets***, among outcomes affecting the overall cycle content and test duration."

Response:

While the applicant may compose a hybrid approach for their proposed type design, the applicant does not have a high degree of freedom to determine severity targets. The ***severity target for any alternate test proposal must be equal to or greater than that accumulated for the current test***, as described in Section 6.1 ("preserve the intent of the current rule" and "show equivalency of the current regulation"), and Section 6.3.3.2. Section 7.2.6 further reinforces the objective of demonstrating "severity equivalent to the original intent of the current rule".

FAA Letter – preamble observations 3/3

"3. The ARAC recommendation report, section 6.4.3, describes a T_{metal} method to determine the power levels for test points (also introduced in 2.3(b)). It is understood that once successfully substantiated, this approach would allow a ***less conservative test to be completed***. However, the FAA notes that substantiation of this method is likely to be ***complex***. The ***report does not address how this substantiation might be controlled***. Therefore, retaining this option will present challenges within the confines of a certification exercise to the FAA in establishing the adequacy of the methods."

Response:

It is not the intention of the T_{metal} method to be a less conservative test. If carried out in accordance with the severity assessment principles of Section 6.3.3. et seq., ***the requirements still remain to demonstrate equivalent severity to the current rule.*** It is acknowledged that this process may be more complex, but the validation and ***substantiation will depend on the sophistication and rigour of the applicant's design system***. It will be the responsibility of the applicant to justify their methods are validated.

Appendix K outlines some considerations for how a framework for developing an alternate test could be devised and for evaluating the rigor of the validation.

Specific Clarification Questions 1, 2, & 6

1. Severity equivalence process and its intended purpose.

2. Severity equivalence process for other than creep failure modes, including failure modes not currently addressed by the §33.87 regulation.

6. Various acceptable outcomes for an alternate endurance test.

Response:

- An alternate test that demonstrated *equal or more damage accumulation* would be considered equivalent.
- Applicant to identify other relevant damage mechanisms and those mechanisms would be used, in addition to creep, to evaluate severity
- Some considerations for other mechanisms clarified in Section 6.3.2 – applicant to assess & justify based on proposed type design
- Substantiation of the applicant's proposed limitations depends on achieving actual test severity greater than or equal to reference severity for all damage mechanisms.

Specific Clarification Question 3

3. Constraints for implementing the recommended hybrid performance-based and prescriptive solutions

Response:

- Highlights areas in report where constraints for current test are mandated to apply equally to the alternate test for prescriptive elements
- For the performance-based portion of the test: compliance demonstration must show that any alternate endurance testing will subject test vehicle to equivalent damage severity assessed for the current test
- These are considered constraints on any proposed alternate test, i.e. performance based portion of proposal is constrained/tied to current rule & must be justified by applicant

Specific Clarification Question 4

4. Role of the engine CPA

Response:

- CPA technique by which the actual running *conditions* of a production engine (new and aged) in service are assessed
- These conditions are then applied in Severity Assessment for creep and other relevant damage mechanisms
- Sections 6.2, 6.3, &6.4 report main body revised to distinguish more clearly roles of CPA (establishment of conditions) & Severity Comparison/Assessment (analysis of severity under the conditions identified in the CPA).

Specific Clarification Question 5

5. Simplify the possible approaches by removing the T_{metal} option

Response:

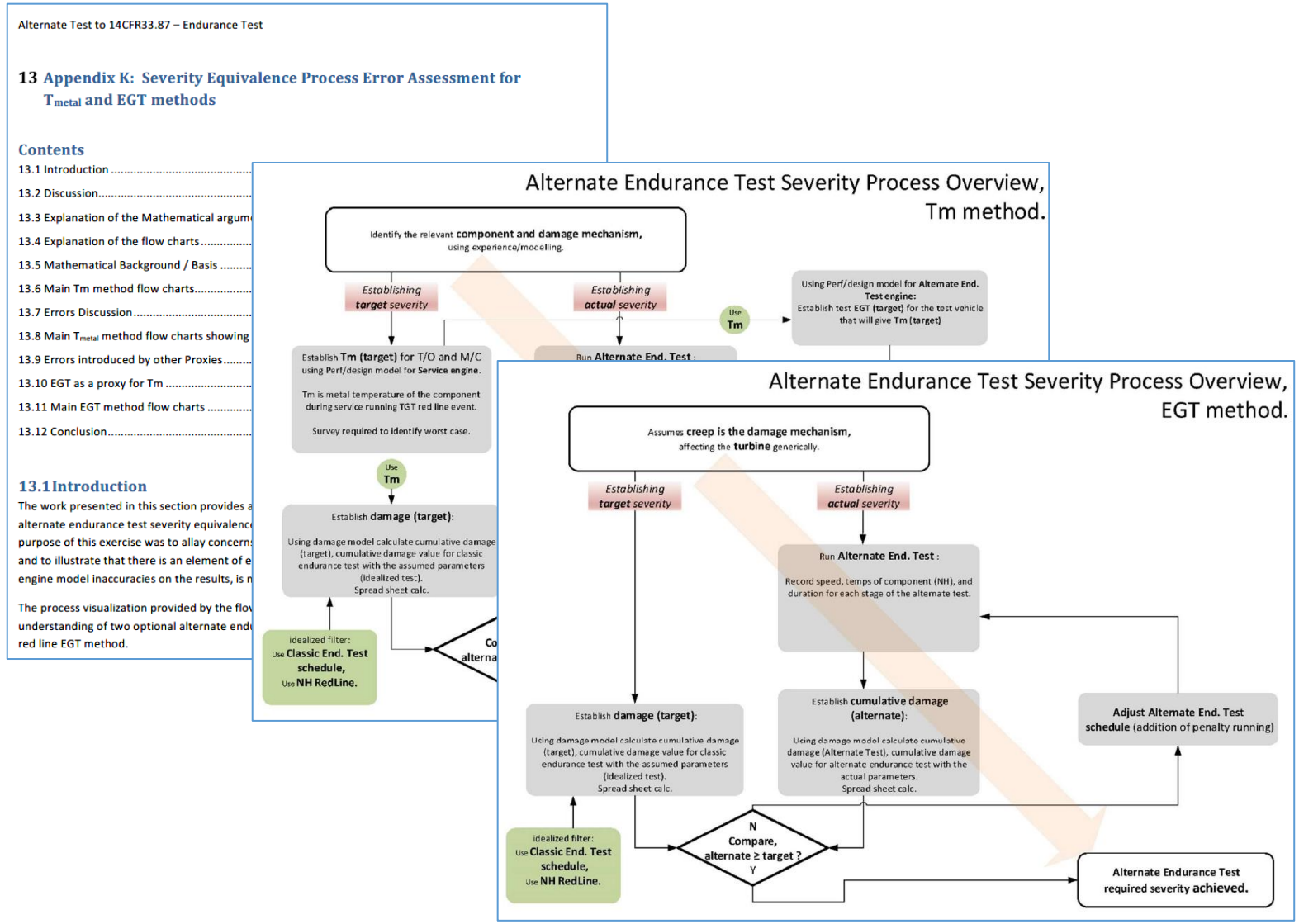
- New engine operating at redline EGT could experience significantly higher metal temperatures than deteriorated engine operating at EGT redline
- This temperature difference equates to more than a 100% increase in the creep damage per hour on the first stage / high pressure turbine blades for a new engine when compared to a fully deteriorated engine.
- Engine performance calculations demonstrating this by two applicants were reviewed separately & discreetly by regulator members of team
- Agreed to retain T_{metal} option as it is consistent with original intent & minimizes off-design effects

Error Assessment & Process Flowchart

Appendix K (Section 13) added to report to provide a potential framework for establishing T_{metal} & EGT test procedures

Analysis showed errors introduced in the severity assessment or modelling (for either method) will cancel when calculating the Actual & Reference severities

Performance and damage calculation methodology MUST be consistent between the Actual & Reference severity calculations



Request of ARAC

Acceptance of final report