AVIATION RULEMAKING ADVISORY COMMITTEE (ARAC)

FEDERAL AVIATION ADMINISTRATION

June 21, 2018

ARAC MEETING 2:00 p.m.

- Welcome and Introductions
- Federal Advisory Committee Act (FACA) Statement
- Ratification of Minutes
- Status Reports:
    - ARAC
        - Rotorcraft Occupant Protection Working Group- Mr. Dennis Shanahan (Tasked: 11/5/15; Recommendations Due: Task 6 - 8/5/18; ARAC Meeting: 9/20/18)
        - Airman Certification Systems Working Group – Ms. Jackie Spanitz (PVT, COM, ATP, Instructor, and AMT certificates and Instrument Ratings Interim Recommendations Due: 6/2018; ARAC Meeting: 6/21/2018) (Covering expanded tasks and proposed timelines Interim Recommendations Due: 12/2019; ARAC Meeting: 9/2019)
    - Transport Airplane and Engine (TAE) Subcommittee - Mr. Keith Morgan
        - Flight Test Harmonization Working Group - Transport Airplane Performance and Handling Characteristics, Phase 3 Tasking (Tasked: 11/1/17; Recommendations Due: 5/1/20; ARAC Meeting: 3/2020)
        - Transport Airplane Metallic and Composite Structures Working Group - Transport Airplane Damage-Tolerance and Fatigue Evaluation (Tasked: 1/26/15; Recommendations Due: 7/21/18; ARAC Meeting: 9/20/18)
        - Transport Airplane Crashworthiness and Ditching Evaluation Working Group (Tasked: 6/4/15; Recommendations Due: 3/4/18 ARAC Meeting: TBD)
- Recommendation Reports:
    - ARAC
        - Loadmaster Certification Working Group - Mr. Mark Phaneuf (Tasked: 5/12/16; Recommendations Due: 5/12/18)
    - Transport Airplane and Engine (TAE) Subcommittee – Mr. Keith Morgan
        - Flight Test Harmonization Working Group - Transport Airplane Performance and Handling Characteristics, Phase 2: Wet Runway Stopping Performance (Tasked 4/11/2014; Recommendations due: 3/11/2018)
- Any Other Business
    - Status of New Working Groups

AVIATION RULEMAKING ADVISORY COMMITTEE
RECORD OF MEETING

MEETING DATE: March 15, 2018

MEETING TIME: 1:00 PM

LOCATION: Federal Aviation Administration
800 Independence Avenue, SW
2nd Floor, Bessie Coleman Conference Room
Washington, DC 20591

PUBLIC ANNOUNCEMENT: The Federal Aviation Administration provided notice to the public of this Aviation Rulemaking Advisory Committee meeting in a *Federal Register* notice published on February 9, 2018 (83 FR 5823).

ATTENDEES: **Committee Members and Alternates**

Yvette A. Rose	Cargo Airline Association (CAA) *ARAC Chair*
David Oord	Aircraft Owners and Pilots Association (AOPA) *ARAC Vice Chair*
Dale Bouffiou	Federal Aviation Administration (FAA) Office of Rulemaking *Acting Designated Federal Officer (DFO)*
Andrew Applebaum	FlyersRights.org
Michelle Betcher	Airline Dispatchers Federation (ADF)
Doug Carr	National Business Aviation Association, Inc. (NBAA)
Ambrose Clay	National Organization to Insure a Sound Controlled Environment (NOISE)
Walter Desrosier	General Aviation Manufacturers Association (GAMA)
Gail Dunham	National Air Disaster Foundation (NADF)

Stephane Flori*	AeroSpace and Defense Industries Association of Europe (ASD)
Chris Martino	Helicopters Association International (HAI)
Robert Ireland	Airlines for America (A4A)
Dinkar Mokadam	Association of Flight Attendants (AFA)
Keith Morgan	Pratt & Whitney
George Novak	Aerospace Industries Association of America (AIA)
Ric Peri*	Aircraft Electronics Association (AEA)
Phillip Poynor	National Association of Flight Instructors (NAFI)
David Supplee*	International Association of Machinists and Aerospace Workers (IAMAW)
Melissa Sabatine	American Association of Airport Executives (AAAE)

Attendees

Julie Brightwell	The Boeing Company (Boeing)
Maryanne DeMarco	Coalition of Airline Pilots Association
Daniel Friedenzohn	Embry-Riddle Aeronautical University
Rikki Gardonio*	Air Line Pilots Association (ALPA)
Mike Gruber*	Boeing
Elan Head*	Vertical Magazine
Mark Larson	National Business Aviation Association (NBAA)

Brian Lee*	Boeing Flight Test Harmonization Working Group Chair
Christopher Lombard	FlyersRights.org
Karen Maheny*	
George McElwee	Commonwealth Strategic Partners (CSP), representing Aircraft Maintenance Fraternal Association
Martin McKinney*	United Parcel Service (UPS) Loadmaster Certification Working Group Vice Chair
Dennis Shanahan*	Injury Analysis, LLC Rotorcraft Occupant Protection Working Group Chair
Michael Smith*	Rotorcraft Bird Strike Working Group Chair
Peter Thompson*	Engine Endurance Testing Requirements Working Group Chair
Sara Mikolop	FAA
Lakisha Pearson	FAA
Kerri Smith	FAA
Brent Hart	FAA
Thuy Cooper	FAA
Jim Crotty	FAA
Peter Ivory	FAA
Les Dorr	FAA
Ross Rutledge	FAA
Victor Wicklund*	FAA
Martin Crane*	FAA
Brian Zane	FAA

LaTasha Tucker	FAA
Mary Schooley*	FAA
Alan Strom*	FAA
Walter Sippel*	FAA
Paul Cloutier*	FAA
Judith Watson*	FAA
Larry West*	FAA
Stephen Grota*	FAA

*Attended via teleconference.

Welcome and Introduction

Dale Bouffiou, Acting Designated Federal Official (DFO), opened the meeting at 1:00 p.m. Mr. Bouffiou noted the resignation of the Aviation Rulemaking Advisory Committee's (ARAC) member and outgoing Chair, Dr. Tim Brady, and introduced Yvette A. Rose and David Oord as the new ARAC Chair and Vice Chair, respectively.

Ms. Rose thanked the FAA for the opportunity to serve as ARAC Chair, and thanked David Oord for agreeing to serve as ARAC Vice Chair. Ms. Rose also thanked the outgoing Chair for his years of service, and wished him luck in future endeavors. Ms. Rose commented on the role of the ARAC and on the important work it has done so far. Ms. Rose invited the attendees to introduce themselves, and welcomed the members of the public in attendance at the meeting.

Mr. Bouffiou read the required Federal Advisory Committee Act (FACA), Title 5, United States Code (5 U.S.C.); Appendix 2 (2007) statement. Mr. Bouffiou confirmed that it is a public meeting, and that members of the public may address the ARAC with the permission of the Chair.

Ratification of Minutes

Ms. Rose turned the ARAC's attention to the minutes from the ARAC's meeting on December 14, 2017. Mr. Robert Ireland made a motion to accept the minutes, and Mr. Chris Martino seconded the motion. Sara Mikolop, FAA Office of Chief Counsel, requested that the last sentence in the minute's discussion on "Guidance on Sharing of Confidential Information" be replaced with the following sentences:

> Ms. Mikolop explained that such labeling would allow the FAA to easily identify those documents the submitter would want the agency to protect from release if sought under FOIA. If the information in those documents is sought pursuant to a FOIA request, the agency would then engage in the process to consult the submitter, as described in the relevant FOIA regulations.

There was no objection to the proposed change. The ARAC voted to approve the minutes with the noted change.

Status Reports

Rotorcraft Occupant Protection Working Group (ROPWG)

Dr. Dennis Shanahan, ROPWG chair, provided a status report (https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information/documentID/3543) that included an overview of membership, a summary of tasking, an overview of the ROPWG's schedule, the status of the ROPWG's work on Task 6, and areas for ARAC consideration.

Dr. Shanahan stated that the ROPWG has begun work on Task 6, and that it is currently on track to submit its Task 6 recommendation report by August 5, 2018, for the ARAC to consider at its September 2018 meeting. Dr. Shanahan noted, however, that the ROPWG's ability to remain on schedule with Task 6 will depend in part on the outcome of the Task 5 recommendation report.

Ms. Rose asked whether the data the ROPWG will analyze for Task 6 includes fatal crashes only. Dr. Shanahan answered that the data will not only be related to fatal crashes, and that the ROPWG will use a previously-compiled database that include 10 and 20 years of crashes. Dr. Shanahan stated that the ROPWG will likely be making recommendations based on groupings of models of helicopters.

Ms. Rose asked Dr. Shanahan to clarify that the ROPWG intends for the Task 6 recommendation report to be presented for consideration at the ARAC's September 2018 meeting. Ms. Rose noted that the ARAC originally had this report scheduled for the ARAC's June 2018 meeting. Dr. Shanahan confirmed that the ROPWG plans to present Task 6 recommendation report at the ARAC's September 2018 meeting, and Ms. Rose stated that the ARAC will adjust the schedule to reflect that plan.

Mr. Andrew Applebaum asked whether the ROPWG has an estimate on how long the period would be to retrofit the requirements for Task 6. Dr. Shanahan answered that the ROPWG does not yet have an estimate. Dr. Shanahan noted that the group's preference would be as soon as possible, but what really sets the pace on timing is the rulemaking process.

Loadmaster Certification Working Group (LCWG)

Mr. Martin McKinney, LCWG vice chair, provided a status report (https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information?documentID=3544) that included an overview of membership, a summary of the tasking, an overview of the LCWG's schedule, and the status of tasking. Mr. McKinney noted that the LCWG is on schedule to present its recommendation report during the ARAC's June 2018 meeting.

Ms. Gail Dunham asked for a definition of "special cargo." Mr. McKinney responded that the LCWG is using the "special cargo" definition found in Operations Specification (OpSpec) A002, Definitions and Abbreviations. Mr. McKinney noted that there is some difference between the definition that appears in the relevant Advisory Circular and the definition that appears in OpSpec A002. Ms. Dunham then asked for an abbreviated version of the definition as it appears in OpSpec A002. Mr. McKinney stated that, fundamentally, special cargo is anything that has to be secured to the airplane in compliance with the weight-balance manual, not contained in a secured ULD (unit load device). Mr. Stephen Grota of the FAA read the definition in OpSpec A002 in full, and noted that this is the latest definition as agreed to by FAA and industry and that it reflects a lot of input from industry. Ms. Dunham noted that this definition is broader than, and an improvement on, the narrow definition that was originally discussed.

Airman Certification Systems Working Group (ACSWG)

Mr. David Oord, ACSWG chair, thanked Ms. Rose for the opportunity to serve as ARAC Vice Chair, and then provided a status report (https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information/documentID/3546) for the ACSWG. The status report included an overview of membership, a summary of tasking, an overview of the ACSWG's schedule, the status of tasking, and areas of ARAC consideration.

Noting the ACSWG's expanded and new tasking, Mr. Oord stated that the FAA is reviewing 39 applications it received in response to a solicitation for new members.

Mr. Oord discussed the ACSWG's recommendation (https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information?documentID=3545) to the ARAC (in a letter dated February 14, 2018) to make certain changes to the Aviation Maintenance Technician Handbook – Airframe (FAA-H-8083-31A) and to the Aviation Maintenance Technical Airframe (AMA) sample exam. Mr. Oord noted it is not a formal recommendation report, but that it needs to be addressed by the ARAC in order for the ACSWG to move forward on the changes. Ms. Rose stated that while the ACSWG's request is not a formal recommendation, the proposed changes to the handbook are something that the working group feels will provide an immediate benefit to enhance safety. Ms. Rose noted that the plan is for the ACSWG to present their recommendations to ARAC for its approval, instead of waiting to include the recommendations in the ACSWG's final

recommendation report. Mr. Oord noted that handbook is scheduled for revision, and to meet the deadline for that revision, it is necessary for the ARAC to approve the changes before the ACSWG submits it final recommendation report. Mr. Walter Desrosier asked whether there is something the ARAC needs to do to support the ACSWG's recommendation, and Ms. Rose responded that it is incumbent upon the ARAC to have a transparent discussion and then to move that the recommendations be accepted. Mr. Phillip Poyner moved to accept the ACSWG's interim report. Mr. Doug Carr seconded the motion. The ARAC voted to accept the interim report.

Transport Aircraft and Engine Subcommittee (TAE Subcommittee)

Mr. Keith Morgan, TAE Subcommittee Chair, provided a status report (https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information/documentID/3547) that included an overview of the TAE Subcommittee's membership and schedule. Mr. Morgan noted that the TAE Subcommittee's next meeting is scheduled for May 10, 2018, in Washington, DC.

150 Hour Endurance Test Working Group

Mr. Peter Thompson, Engine Endurance Testing Requirements Working Group chair, provided a status report that included a summary and the status of the working group's tasking.

Mr. Morgan noted that this working group is finished, and he requested that the working group be closed out since the FAA has accepted its recommendation report. Ms. Rose noted that it is a standing working group. Mr. Morgan stated that the members are looking for guidance on what they should do going forward. Mr. Thompson noted that report was accepted by the FAA, but stated his understanding that it had not reached the relevant program office. Ms. Thuy Cooper, FAA Office of Rulemaking, stated that all reports accepted at the ARAC's December 2017 meeting have been forwarded to respective program offices in the FAA, and that there should be an update as to the status of the FAA's review of those reports at the ARAC's June 2018 meeting.

Ms. Rose asked whether it the ARAC needs to declare this working group dormant, and Mr. Morgan said that would be his recommendation. Mr. Bouffiou stated that it is not necessary to formally declare the working group dormant. Mr. Morgan stated that going forward he will not report out on this working group until it is given a new tasking.

Flight Test Harmonization Working Group (FTHWG)

Mr. Brian Lee, FTHWG co-chair, provided a status report that included an overview of membership, a summary of tasking, an overview of the schedule for Phase 3, the status of tasking, and areas of ARAC consideration.

Mr. Lee stated that the FTHWG is currently in Phase 3 of its tasking. Mr. Lee noted that Phase 2 was completed in November 2017, except for the FTHWG's Wet Runway Stopping Performance recommendation report, which is due next week to the TAE Subcommittee for consideration at its May 2018 meeting.

Mr. Lee expressed continued concern about inconsistent participation from the European Aviation Safety Agency (EASA), and asked the ARAC for help addressing that concern. Mr. Morgan noted that at the ARAC's December 2017 meeting, Ms. Lirio Liu, the FAA DFO, agreed to reach out to EASA regarding its participation in the FTHWG's meetings. Mr. Bouffiou stated that he was not sure of the status of that action, but that the FAA take this as an action-item again. Another recommendation was made for the ASD ARAC members to apply pressure on EASA.

Ms. Rose asked whether the FTHWG will submit its Wet Runway Stopping Performance recommendation report to the ARAC for approval at its June 2018 meeting. Mr. Lee responded that the TAE Subcommittee will consider the report at its May 2018 meeting and then the ARAC will consider it at its June 2018 meeting. Mr. Desrosier asked whether May 12, 2018, is still the date by which working groups must submit reports for the ARAC to consider at its June 2018 meeting. Ms. Rose noted that the reports need to be submitted to the FAA 30 days before the ARAC meeting (which is June 21, 2018). Mr. Desrosier stated that the May 12th deadline was given to the working groups so that the ARAC would receive the reports in advance of when they have to be submitted to FAA.

As to the Wet Runway Stopping Performance recommendation, Mr. Carr asked whether the FTHWG considers it necessary to coordinate its recommendations with the work and recommendations of the Take-off and Landing Performance Assessment Aviation Rulemaking Committee (TALPA ARC). Mr. Lee stated that the FTHWG has taken the TALPA ARC's work into consideration. Mr. Lee noted that the TALPA ARC was an operational consideration, not an airplane certification consideration, but that the FTHWG still made an effort to ensure that it was consistent with and did not undue TALPA ARC's work.

Metallic and Composite Structures Working Group

Mr. Mike Gruber, Metallic and Composite Structures Working Group chair, provided a status report that included an overview of membership, a summary of the tasking, an overview of the working group's schedule, the status of the tasking, and areas of ARAC consideration.

Mr. Gruber stated that the working group is still targeting April 10, 2018, as the date for submitting its report to the TAE Subcommittee for its consideration at its May 2018 meeting. Mr. Gruber noted, however, that the cost-benefit aspect has languished, so there is a risk that the working group will need to piecemeal the report, submitting the body of recommendation first (in April) and then submitting the cost-benefit analysis (possibly in May). Mr. Gruber stated that the plan is to submit the report to the FAA in July 2018.

Mr. Morgan pointed out that during the ARAC's December 2017 meeting, the committee talked about a final presentation of the report to the ARAC at its September 2018 meeting. Mr. Gruber stated that with the September 2018 meeting as a deadline, the working group may be able to present a single report that includes both the recommendations and the cost-benefit analysis.

Mr. Ambrose Clay asked whether, when looking at current practices across the industry, the working group has found a high degree of consistency in how manufacturers that are working with composites are addressing the metallic and composite interface. Mr. Gruber answered, yes, absolutely.

Transport Aircraft Crashworthiness and Ditching Evaluation Working Group (TACDWG)

Mr. Keith Morgan provided a status report on behalf of the TACDWG's chair, Kevin Davis. The status report included an overview of membership, a summary of tasking, an overview of the TACDWG's schedule, and the status of tasking.

Mr. Morgan stated that the TACDWG submitted its recommendation report to the TAE Subcommittee in late December, but the TAE Subcommittee has not yet reviewed the report. Mr. Morgan noted that the TAE Subcommittee plans to review the report at its May 2018 meeting, which means the schedule for the report will be delayed by a quarter. Mr. Morgan proposed submitting the report to the ARAC at its June 2018 meeting. Ms. Rose agreed, noting that the ARAC will then have three reports to consider at its June 2018 meeting and three reports to consider at its September 2018 meeting.

Mr. Dinkar Mokadam pointed out that Candace Kolander needs to be removed from the list of working group voting members because she is no longer with Association of Flight Attendants. Mr. Mokadam stated that either he or Chris Witkowski can be named as Ms. Kolander's replacement. Mr. Bouffiou stated that membership lists are now closely coordinated with the Department of Transportation (DOT), so it will be necessary to get DOT approval for changes before they can be officially noted. Mr. Morgan stated that he would inform Mr. Davis that Ms. Kolander needs to be removed from the list of working group voting members.

Mr. Mokadam stated that he never received a clean copy of the TACDWG's recommendation report from Mr. Davis, TACDWG chair, and Mr. Morgan responded that he would take that care of it.

Avionics Systems Harmonization Working Group (ASHWG)

Mr. Keith Morgan provided a status report on behalf of the ASHWG's working group chair, Clark Badie. Mr. Morgan noted that the ASHWG is in the process of selecting working group members. Mr. Morgan also noted that he has several slides from Mr. Badie that he will send to Ms. Cooper to be included in the final meeting minutes.

Mr. Carr asked if the tasking for the ASHWG includes new airplane design (part 23 and part 25). Mr. Desrosier stated that the tasking is specifically for part 25 aircraft, but noted that many of the technical issues are common across aircraft types. Noting that a lot of the output of the ASHWG could potentially benefit other areas of the non-part 25 world, Mr. Carr stated that he wants to make sure that the working group does not leave those out. Ms. Rose noted that that is something for working group to consider as it moves forward.

Ice Crystal Icing Working Group (ICIWG)

Mr. Keith Morgan provided a status report. Mr. Morgan noted that co-chairs have been selected for the ICIWG, and that they are currently in the member selection process.

Recommendation Reports

Rotorcraft Occupant Protection Working Group (ROPWG)

Dr. Dennis Shanahan, ROPWG chair, briefed the ARAC on the ROPWG's Recommendation Report for Task 5. Dr. Shanahan noted that the ROPWG broke its recommendations into two separate reports – the Crash Resistant Fuel Systems Recommendation Report and the Crash Resistant Seats and Structure Recommendation Report. Dr. Shanahan provided a brief overview of each report. Ms. Rose noted that the full reports were sent to the committee by email on February 9, 2018.

Crash Resistant Fuel Systems (CRFS) Recommendation Report

In his overview of the CRFS Recommendation Report (https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information?documentID=3503), Dr. Shanahan summarized the ROPWG's major findings, addressed several caveats related to the ROPWG's recommendations, discussed the recommendations themselves, and discussed the dissents to those recommendations.

The ROPWG recommended that the FAA apply the following regulations to newly manufactured legacy helicopters:

- § 27.952(a)(1), (a)(2), (a)(3), (a)(5), & (a)(6) and § 29.952(a)(1), (a)(2), (a)(3), (a)(5), & (a)(6).
- §§ 27.952(c) and 29.952(c), with changes to guidance (i.e., remove AC27-1B and AC29-2C guidance requiring 20-30% slack in flexible fuel lines).
- §§ 27.952(f) and 29.952(f).
- §§ 27.952(g) and 29.952(g), with changes to guidance (i.e., clarify that the requirement applies only to rigid or semi-rigid fuel tanks, not flexible tanks).

- §§ 27.963(g) and 29.963(b) with changes (i.e., minimum of 250- pound fuel tank puncture resistance if passed drop test in-structure).
- §§ 27.975(a)(7) and 29.975(a)(7).

Following Dr. Shanahan's presentation, ARAC members asked the following questions and made the following comments about the CRFS Recommendation Report:

- Mr. Appelbaum asked, as a percentage of all helicopters currently in existence, whether the ROPWG has a number on what percentage are newly manufactured each year as they are introduced. Dr. Shanahan responded that he does not know, but that the ROPWG will be looking at that question in Task 6, as well, because it now has a full compilation of helicopter registrations. Mr. Applebaum stated that the latest figure is 16% as of end of 2014. Dr. Shanahan stated that the compliance for dynamic seat testing was around 10% and the compliance for fuel systems was 16%.

- Mr. Applebaum asked whether the ROPWG has a time period for partial compliance. Dr. Shanahan stated that the ROPWG did not specifically address the time period for partial compliance, and noted that the general timeline for compliance once the FAA decides to implement a recommendation is on the order of 3-5 years. Dr. Shanahan stated that as far as fuel systems go, there could be ways of reducing that timeline, given that many models already have retrofit kits available. Dr. Shanahan noted that Congress is also looking at this particular issue.

- Mr. Applebaum asked whether the ROPWG has any projections on what percentage of all helicopters will be either partially compliant or fully compliant with the full tank standards. Mr. Applebaum noted that it is currently 14% or 16% for the 1994 regulations. Mr. Applebaum questioned when, if there is a 3-5 year wait and a small number of turnover each year, we will start to see a significant number of helicopters that are partially or fully compliant. Mr. Desrosier stated that part of that will be related to Task 6, which will address retrofit recommendations to the existing fleet. Dr. Shanahan stated that the ROPWG did not have the data to make the projections that Mr. Applebaum is asking for, but he estimates that if it is 14% today, then it might double. Dr. Shanahan noted that newly manufactured legacy helicopters are a small percentage of the helicopters that are flying today.

- Mr. Clay asked for clarification as to whether the ROPWG is recommending that breakaway hoses and automatic shutoffs be retrofitted. Dr. Shanahan stated that the regulation is written so that breakaway valves are required unless an alternative method is chosen, which includes fuel lines with certain requirements. Dr. Shanahan clarified that the ROPWG is recommending accepting the regulation, § 29.952(c), and that the regulation does allow for either approach.

- Mr. Desrosier pointed out a mistake in the ROPWG's recommendation on rollover event valves. Mr. Desrosier stated that the recommendation report should have recommended accepting § 29.975(a)*(7)*, which is the rollover vent valve provision, not all of § 29.975(a), which is a long series of venting requirements. Dr. Shanahan confirmed that the intent of the ROPWG was to recommend accepting § 29.975(a)(7), not all of § 29.975(a). Mr. Desrosier also pointed out that one of the slides in Dr. Shanahan's presentation is also incorrect because it refers to § 29.975*(b)*, instead of § 29.975(a)(7).

Mr. Desrosier moved to approve the CRFS Recommendation Report with the proposed technical correction (i.e., references to § 29.975(a) be corrected to read § 29.975(a)*(7)*). Mr. Martino seconded the motion. Mr. Appelbaum moved for the report not to be accepted until it includes some timeline for a recommendation for partial compliance. Ms. Rose noted that a timeline for partial compliance was not part of the tasking from the ARAC, so it should not be part of requirement for this recommendation report. Mr. Desrosier noted that the GAMA member rotorcraft manufacturers have started to implement on a voluntarily basis. Mr. Applebaum noted in response that the report said some manufacturers do not intend to implement the requirements until compliance is mandated. Mr. Martin Crane, FAA, noted that the tasking from the FAA asked what rules should be implemented in 3 years, with expectation of full compliance within 10 years, which is why the ROPWG did not address the timeline in its recommendation report. Ms. Rose suggested that Mr. Applebaum direct his concerns about the timeline to FAA.

The ARAC voted to accept the CRFS Recommendation Report with the technical corrections proposed by Mr. Desrosier. FlyersRights.org (through its representative Mr. Andrew Appelbaum) voted against accepting the report.

Crash Resistant Seats and Structure (CRSS) Recommendation Report

In his overview of the CRSS Recommendation Report (https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information?documentID=3483), Dr. Shanahan provided relevant background for the ROPWG's CRSS recommendations, discussed the recommendations themselves, and discussed the dissents to the recommendations.

The ROPWG recommended that the FAA apply the following regulations to newly manufactured legacy helicopters:

- §§ 27.561(b)(3) and 29.561(b)(3).
- § 27.562(b)(1) with changes (i.e., 21.7 ft/s vertical component test requirement where full compliance is not practicable).
- § 29.562(b)(1).
- §§ 27.562(b)(2) and 29.562(b)(2).
- §§ 27.785 and 29.785.

There were no questions from the ARAC about the CRSS Recommendation Report.

Mr. George Novak moved to accept the recommendation report, and Mr. Martino seconded the motion. The ARAC voted to accept the CRSS Recommendation Report. FlyersRights.org (through its representative Mr. Andrew Appelbaum) voted against accepting the report.

Other Business

Membership

Mr. Bouffiou informed the ARAC about the closer integration between FAA and DOT on committee memberships. Mr. Bouffiou stated that DOT will be looking at all new members proposed for the ARAC and its working groups. Mr. Bouffiou stated that, as the ARAC or working groups become aware of a need for new members, they will need to work with the FAA so that it can get the clearance process started with DOT. Mr. Bouffiou noted that this is a new level of clearance and interaction, so it is currently taking about 90 days. Mr. Desrosier clarified that this does not prevent working groups from being able to invite subject matter experts to participate their meetings as observers, which Mr. Bouffiou confirmed.

Mr. Carr asked whether organizations and individuals that are current members of the ARAC are pre-approved, or whether they, too, will need to go through review by DOT. Mr. Bouffiou stated that current organizations and individuals are grandfathered-in. Ms. Cooper clarified that the review process applies only if an organization seeks to name a new individual member. Ms. Rose asked every organization to ensure that it has named a member and an official alternate.

Ms. Rose noted that the ARAC's charter expires in September 2018. Mr. Bouffiou stated that a new charter is currently under consideration and may be in place before September. He noted, however, that the charter does not include the names ARAC members (only the number of members).

FAA's Update to Recommendation Report to ARAC Input to Support Regulatory Reform of Aviation Regulations

Mr. Bouffiou addressed the ARAC's recommendation report that listed potential de-regulatory actions, as well as a DOT solicitation in the *Federal Register* (docket number DOT-OST-2017-0069), asking the public to recommend potential deregulatory actions to the Department. Mr. Bouffiou stated that the FAA combined the aviation-related deregulatory actions proposed in response to the DOT solicitation with the list of potential deregulatory actions identified by the ARAC, and sent a final list of potential deregulatory actions to DOT for its consideration. Mr. Martino asked if there is a copy of the collated list, and Mr. Bouffiou responded that list is currently internal, pending DOT approval.

Mr. Bouffiou noted that FAA had already considered some of the recommended deregulatory actions, and that some of them are part of ongoing rulemaking actions. Mr. Bouffiou estimated that other recommended deregulatory actions will be included in rulemakings in fiscal year 2019. Mr. Bouffiou also noted that some of the proposed deregulatory actions may result in additional tasking to the ARAC.

Mr. Applebaum asked whether the FAA plans to task the ARAC with addressing the issue of sexual assault on commercial airplanes. Ms. Cooper noted that the FAA has not received an official request from the ARAC or any member of the ARAC to consider that as an ARAC tasking.

For record-keeping purposes, Mr. Bouffiou asked that people who call in for ARAC meetings in the future state their names when prompted by the system to do so.

ADJOURNMENT

Ms. Rose adjourned the meeting at 3:08 p.m.

Approved by:

Dated: _____

Ratified on: _____

Rotorcraft Occupant Protection Working Group
Task 6: Status Report to the Aviation Rulemaking Advisory Committee

Dennis F. Shanahan, M.D., M.P.H.
Working Group Chair

June 21, 2018

ROPWG MEMBERS

- Dennis F. Shanahan (Chairman) - Injury Analysis, LLC
- Robert J. Rendzio - Safety Research Corporation of America (SRCA)
- Harold (Hal) L. Summers - Helicopter Association International
- Jonathan Archer - General Aviation Manufacturers Association (GAMA)
- Daniel B. Schwarzbach, SPO - Airborne Law Enforcement Association's (ALEA)
- Krista Haugen - Survivors Network for the Air Medical Community
- Joan Gregoire - MD Helicopters
- Rohn Olson- Bell Helicopter Textron, Inc.
- Matthew Pallatto – Sikorsky
- William Taylor - Enstrom Helicopter Corporation
- Pierre Prudhomme-Lacroix - Airbus Helicopters
- David Shear - Robinson Helicopter Company
- Chris Meinhardt – Air Methods
- John Heffernan - Air Evac Lifeteam
- John Becker - Papillon Airways Inc
- Christopher Hall - PHI Air Medical, LLC
- Bill York - Robertson Fuel Systems
- Randall D. Fotinakes - Meggitt Polymers & Composites
- Marv Richards – BAE Systems
- Flavio Iurato – Leonardo Helicopters
- Laurent Pinsard - EASA Structures Engineer
- Rémi Deletain - EASA Powerplant & Fuel Engineer

FAA Advisor

- Martin Crane

SUMMARY OF TASKING

- **Task 1 and 2** – Develop a cost-benefit analysis report for incorporating the existing occupant protection standards 14 CFR 27.561, 27.562, 27.785, 27.952, 29.561, 29.562,29.785, and 29.952 via §§ 27.2 and 29.2 for newly manufactured rotorcraft.
- **Task 3** – Either make specific written recommendations on how all or part of 14 CFR 27/29.561, 27/29.562, 27/29.785, 27/29.952, should be made effective via §§ 27.2 and 29.2 for newly manufactured rotorcraft or propose new alternative performance-based occupant protection safety regulations for newly manufactured rotorcraft that will be effective via §§ 27.2 and 29.2.
- **Task 4 and 5** - Develop an initial report containing recommendations on the findings and results of the cost-benefit analysis if a new alternative performance based occupant protection safety regulations effective via §§ 27.2 and 29.2 are proposed.
- **Task 6** – Advise and make written recommendations on **incorporating rotorcraft occupant protection improvements and standards into the existing rotorcraft fleet and/or new alternative proposed performance-based regulations.** Occupant protection standards include either all or part of 14 CFR 27.561, 27.562, 27.785, 27.952, 29.561, 29.562, 29.785, and 29.952.

SCHEDULE

- Federal Register Announcement of ROPWG – November 5, 2015
- Meeting 1 – January 21 - 22, 2016
- Meeting 2 – March 1-2, 2016
- **Task 2 Interim Analysis Report** – submitted March 13, 2016
- Meeting 3 – July 26 -27, 2016
- **Task 2 Analysis Report** – submitted November 10, 2016
- Meeting 4 – February 8-9, 2017
- **Task 5 Interim CRFS Report** – May 11, 2017
- Meeting 5 – June 28-29, 2017
- Meeting 6 – September 12-13, 2017
- Meeting 7 – December 14-15, 2017
- **Task 5 Recommendation Report (CRFS)** – January 23, 2018
- **Task 5 Recommendation Report (CRSS)** – January 29, 2018
- Meeting 8 – February 14-15, 2018
- Meeting 9 – March 27-28, 2018
- Meeting 10 – May 10-11, 2018
- Meeting 11 – June 13-14, 2018
- Task 6 **Recommendation Report deadline** – August 5, 2018

STATUS OF TASKING

- Intervention strategies (IS's) have been developed and scored based on a modification of the FAA AVP developed CAST System.
- Based on the scoring of the IS's and other factors, the number of IS's will be pared down, categorized and prioritized within each category.
- The seven intervention categories are shown below:

ROPWG Task 6 Intervention Categories

1. Near-Term Implementation of Current Occupant Protection Regulations to the Existing Rotorcraft Fleet
2. Educational/Incentive Programs (Government and Private Sector)
3. Industry Standards
4. Personal Protective Equipment Use for Certain Missions
5. Changes to Enhance/Improve Occupant Protection Regulations
6. Research to Improve the Crash Safety of Rotorcraft (FAA, NASA, Private Sector)
7. Public Use Rotorcraft

STATUS OF TASKING (Cont.)

- Cost data for implementing regulatory changes has been acquired from OEMs and cost-benefit analysis begun.
- Final recommendations will be agreed upon at the June meeting.
- Recommendation Report writing has begun.
- Currently on track for Task 6 Report completion by August 5, 2018.

AREAS For ARAC CONSIDERATION

- ROPWG has no outstanding issues for ARAC consideration.

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

Jackie Spanitz
Working Group Chair

June 1, 2018

MEMBERS of ACSWG - INDUSTRY

- David Oord, AOPA
- Paul Alp, Jenner & Block
- Justin Barkowski, AOPA
- Paul Cairns, ERAU
- Kevin Comstock, ALPA
- Mariellen Couppee, Honeywell
- Eric Crump, Polk State College
- David Dagenais, FSCJ
- Maryanne DeMarco, CAPA
- Megan Eisenstein, NATA
- David Earl, Flight Safety
- 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
- John McGraw, NATA
- John “Mac” McWhinney, King Schools
- Crystal Maguire, ATEC
- Phillip Poynor, NAFI
- Jimmy Rollison, FedEx
- JR Russell, NBAA
- Mary Schu, Mary Schu Aviation
- Roger Sharp, Independent
- Jackie Spanitz, ASA
- Burt Stevens, Oxford Flying Club, Inc.
- Robert Stewart, Independent
- Robert Wright, NBAA
- Donna Wilt, SAFE

MEMBERS of ACSWG – FAA SMEs

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

SUMMARY OF TASKING

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

SCHEDULE

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

SCHEDULE

- Future Meetings –
  - September 18-19, 2018
  - December 11-12, 2018
  - 2019 TBD

STATUS OF TASKING

- Overall, with the expanded and new tasks, working group is on track to meet its schedule.
  - Awaiting approval and onboarding of new members
  - Needed expertise and input on Glider, Balloon, Sport, Rotorcraft, & Powered Lift

AIRMAN CERTIFICATION SYSTEM

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

49 USC 44703

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

49 USC 44702

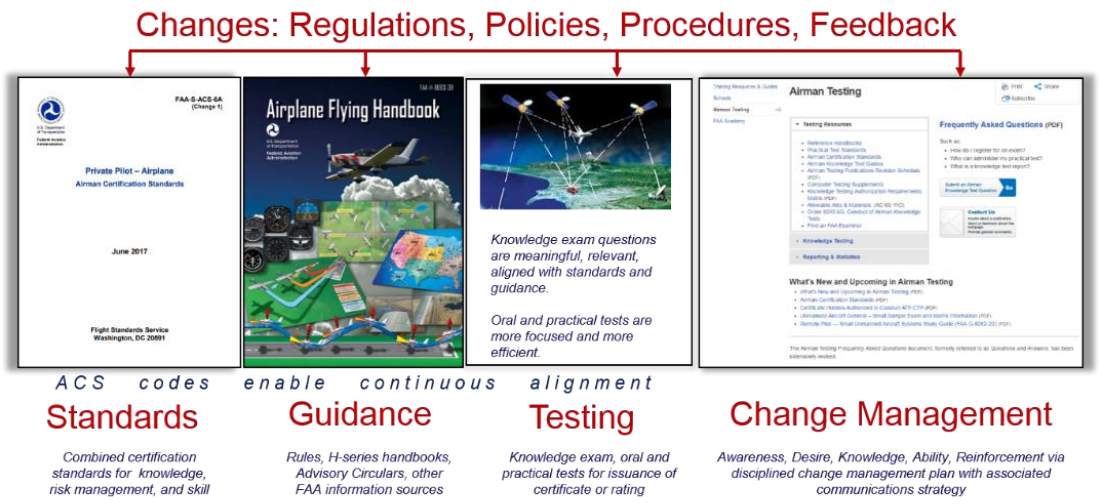
(d) DELEGATION The Administrator may delegate to a qualified private person …a matter related to—(A) the examination, testing, and inspection necessary to issue a certificate under this chapter; and (B) issuing the certificate

14 CFR part 61: ***FAA regulations set forth the requirements and conditions for issuance of pilot/instructor certificates & rating in terms of aeronautical experience and broad subject areas for aeronautical knowledge and flight proficiency (skill).***

Implementing Guidance

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

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



AREAS of ARAC CONSIDERATION

- **Interim Recommendation Report – Dated May 21, 2018**
  - Airline Transport Pilot (ATP)
    - Airman Certification Standards
    - Compiled feedback
  - Commercial Pilot
    - Military Competence Airman Certification Standards
    - Compiled feedback
  - Instructor
    - Airman Certification Standards
    - Recommendations
  - Recommendation
    - Align AMT training regulations and guidance to AMT ACS

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

Keith R. Morgan
Working Group Chair

21 June 2018

MEMBERS of the Transport Aircraft and Engines Working Group

Pratt & Whitney

ALPA

A4A

ASD

Airbus

Boeing

GAMA

AIA

Bombardier

NADA/F

Embraer

SCHEDULE

- Last Meeting – May 10, 2018 Rosslyn, VA
- Next meetings:
  - Telecom July 25, 2018
  - November 15, 2018 Seattle

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

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

10 May, 2018

MEMBERS of Flight Test Harmonization Working Group

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

SUMMARY OF TASKING

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

PHASE 3 SCHEDULE

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

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

P = Aircraft Performance
H = Handling Qualities

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

STATUS OF TASKING

- Topic from Phase 2: Wet Runway Stopping Performance
  - Scheduled Completion: March, 2018
  - Report approved by TAE May 10, 2018

- Phase 3: FTHWG considers activity on-track / on-schedule
  - Go-Around Performance (Topic 18)
    - OEI Requirements and Guidance complete by March Meeting
    - Desire to address EASA RMT 0647 activity (AEO, somatogravic illusion, etc.)
      - Anticipating NPA and CRD “early in 2018”, but have not seen indication of publication
    - Based on “early 2018” promise of NPA and CRD, we target 1 September, 2018 report date (subject to revision based on actual publication of NPA and CRD).
  - OEI directional control on slippery surfaces (Topic 30)
    - Requirements and Guidance for OEI conditions complete by March meeting

STATUS OF TASKING

- →FTHWG-44 : 4-8 December 2017 Meeting Seattle (Boeing)
  - 12 December (WET)
  - 19 December (WET)
  - 9 January, 2018 (WET)
  - 16 January (Topic 30 - OEI Directional Control on Slippery Runways)
  - 23 January (WET)
  - 30 January (Go-Around)
  - 6 February (WET)
  - 13 February (Topic 30)
  - 20 February (Go Around)
  - 26 February (WET)
  - 27 February (Topic 30)
- →FTHWG-45 : 5-9 March 2018 Meeting Paris (Dassault)
  - 13 March (OEI Directional Control on Slippery Runways)
  - 20 March (Go Around OEI)
  - 29 March (OEI Directional Control on Slippery Runways)
  - 3 April (Vdf/Mdf)
  - 24 April (Go Around AEO)
  - 15 May (Vdf/Mdf)
  - 5 June (Go Around AEO)
- →FTHWG-46 : 11-15 June 2018 Meeting Montreal (Bombardier)
  - …plan weekly telecons (Tuesdays, 09:00 Eastern Time)
- →FTHWG-47 : 17-21 September 2018 Meeting Toulouse (Airbus)
  - …plan weekly telecons (Tuesdays, 09:00 Eastern Time)
- →FTHWG-48 : 3-7 December 2018 Meeting Melbourne (Embraer)

Activity since December, 2017

AREAS for ARAC CONSIDERATION

- No additional guidance needed from FAA or ARAC
- Continued concern about inconsistent participation from EASA

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

Mike Gruber (Boeing)
Working Group Chair

May 10, 2018

SUMMARY OF TASKING

With the increased use of composite and hybrid structures provide recommendations regarding revision of the fatigue and damage-tolerance requirements & associated guidance material

Tasking was divided up into the following 12 focus areas:

1. Threat Assessment
2. Emerging material technology
3. Inspection Thresholds
4. Large damage capability (SDC, Structural Damage Capability) - **AAWG**
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 – **AAWG**
11. Disposition of cracking during full-scale fatigue testing
12. Accidental damage inspections included in the ALS conflicts w/ MSG-3 program

2 year tasking

MEMBERS of Metallic and Composite Structures WG

1.	Michael Gruber	(Boeing) – Chairperson
2.	Chantal Fualdes	(Airbus)
3.	Salamon Haravan	(Bombardier)
4.	Benoit Morlet	(Dassault Aviation)
5.	Antonio Fernando Barbosa	(Embraer)
6.	Kevin Jones	(Gulfstream)
7.	Toshiyasu Fukuoka	(Mitsubishi Aircraft)
8.	David Nelson	(Textron Aviation)
9.	Phil Ashwell	(British Airways)
10.	Doug Jury	(Delta Air Lines)
11.	Mark Boudreau	(FedEx)
12.	Eric Chesmar	(United Airlines)

SCHEDULE

#	Major Tasks/Deliverables	Date	Status	Comments
1	ARAC Tasking Published in Federal Register	1/26/15	Complete	
2	ARAC Working Group (WG) Chair and member selected & notified	5/5/15	Complete	
3	WG Plan accepted by TAE	11/4/15	Complete	
4	Face to Face WG Meetings	6/16/15 9/14/15 3/16/16 12/6/16 6/27/17	Complete Complete Complete Complete Complete	Kick-off meeting Everett, Wa . Montreal Canada Everett, Wa. (leverage AAWG mtg) Melbourne, Florida Everett, Wa.
5	Planned Date to submit Final Report to TAE	5/16/2018		Additional time required to ensure a comprehensive report
6	Final Report provided to FAA	10/2018		

Recommendation Summary

- The rule recommendations are consistent with current industry practice and the associated guidance and policy material recommendations are intended to ensure a common understanding consistent with industry practice.
  - Generalize the environmental damage threat to address when evaluating the structure (e.g., replace corrosion with environmental deterioration).
  - Require applicants to address all modes of damage in the damage-tolerance evaluation (DTE) [e.g., add manufacturing defects to paragraph (b)].
  - Generalize the DTE to require applicants to establish inspections or other procedures for structure that exhibits growth or no growth behavior.
    - For metals, generalize the assumptions to be used in threshold determination.
    - For materials that exhibit growth, continue to allow the repeat interval to be different from the threshold.
    - For materials that exhibit no growth, continue to allow the repeat interval to be equal to the threshold.
  - Require applicants to establish a limit of validity (LOV) based on the aging space (expected environmental exposure and repeated loading environment) for all structure, regardless of the materials used in construction of that structure.
  - Include analysis for certain loads in order for an applicant to supplement the full-scale fatigue test evidence to show freedom from aging (WFD for metals).

Transport Aircraft Crashworthiness and Ditching Working Group Recommendation Report Briefing to the Aviation Rulemaking Advisory Committee

Kevin Davis
Working Group Chair

10 May 2018

TACDWG MEMBERS

Working group voting members

Kevin Davis	(Boeing Commercial) – Chairperson
John van Doeselaar	(Airbus)
Akif Bolukbasi	(Boeing Military Vertical Airlift)
Milenko Milekic	(Bombardier)
Clóvis Augusto Eça Ferreira	(Embraer)
Olena Zagoskina	(Cascade Aerospace)
Matthias Waimer	(German Aerospace Center (DLR))
Toru Sakagawa	(Mitsubishi Aircraft Corporation)
Vincent Jacques	(Dassault Aviation)
Candace K. Kolander	(Association of Flight Attendants)
Heidi R. Moore	(Naval Air Systems Command)
Justin Littell	(NASA)
Jack Caughron	(Gulfstream Aerospace Corporation)
Gerardo Olivares Ph.D.	(National Institute of Aviation Research)
Dan Hoverson	(Textron Aviation)

SUMMARY OF TASKING

- Provide recommendations regarding the incorporation of airframe-level crashworthiness and ditching standards into Title 14, Code of Federal Regulations (14 CFR) part 25 and development of associated advisory material.

SCHEDULE

#	Major Tasks/Deliverables	Date	Status	Metric	Comments
1	ARAC Tasking Published in Federal Register	4 June ‘’15	Complete	Completed	
2	ARAC Working Group (WG) Chair and members selected & notified	October ‘15	Complete	Industry Representation	
3	WG Plan submitted to TAE	April ‘16	Complete	Plan Approved	
4	Face to Face WG Meetings	Dec. ’15 April ‘16 October ’16 March ’17 Sept ‘17	Complete Complete Complete Complete Complete		
5	Planned Date to submit Final Report to TAE	12/2017	Complete	Submitted 12/15/2017	Reflected in approved plan
6	Final Report Due to FAA	03/2018			Reflected in approved plan

RECOMMENDATIONS

- Proposed new airframe level crashworthiness rule and associated guidance
  - Ability to use similarity to previous acceptable designs as MoC option
- Proposed revised ditching rules; sections 25.563, 25.801 and associated guidance
- Proposed harmonization with some reorganization of emergency equipage and evacuation rules; sections 25.785, 25.801, 25.809, 25.810, 25.811, 25.812, 25.1411, 25.1415
  - Includes additional guidance for section 25.801for unplanned ditching incorporating means of compliance issue papers for flotation and evacuation.

DISSENT(S)

- Airline Flight Attendants (AFA)
  - Regarding use of similarity as a MoC for crashworthiness and other minor points.
- Embraer
  - Concerns related to requirement in performing drop tests specifically for mid-size or small part 25 aircraft. Significant expense and potential impact to design with improvement in safety not clear.
- German Aerospace Center (DLR)
  - Regarding use of similarity as a MoC for crashworthiness + other minor points.
- NASA
  - Regarding impact velocities proposed. NASA believes they should be greater than proposed derived from existing test data and some of the OEM data.
- Airbus, Boeing, Bombardier, Dassault, Embraer, Gulfstream, Textron
  - Not in agreement that an airframe rule is necessary.
  - Concern regarding cost impact to derivative aircraft certification with improvement in safety not clear.
  - Supported draft rule with ability to leverage similarity to previous acceptable designs as best option if a rule is deemed necessary and found financially viable for industry.

STATUS OF TASKING

- Final report submitted to TAE for consideration at May 10, 2018 meeting
- TAE returned report to WG without voting for further discussion on dissents in an attempt to gain consensus
- TAE requested WG to submit report for consideration at July 25, 2018 meeting
- If approved, submit for ARAC review at September 2018 meeting

Loadmaster Certification Working Group (LCWG) Recommendation Report Briefing to the Aviation Rulemaking Advisory Committee

Mark Phaneuf
Working Group Chair

June 21, 2018

LCWG MEMBERS

- Mark Phaneuf, LCWG Chair – Air Line Pilots Association, International (ALPA)
- Martin McKinney, LCWG Vice Chair – United Parcel Service (UPS) Airlines
- Stephen Banks – National Cargo Group, Inc. d/b/a National Airlines
- Steve Brewer – Kalitta Air
- Richard Brose – FedEx
- Lawrence Fine – Atlas Air
- Erik Kaupa – Professional Loadmaster Association
- Peter Mejia – Northern Air Cargo
- Darrin Noe – The Boeing Co.
- Jeff Olver – Alaska Airlines, Inc.
- George Paul – National Air Carrier Association (NACA)
- Yvette Rose – Cargo Airline Association (CAA)

FAA

- Stephen W. Grota, FAA Aircraft Maintenance Division (AFS–300) Cargo Focus Team (CFT)
- Julia Greenway, FAA Office of Rulemaking (ARM)
- Jose Castedo, FAA Office of Aviation Policy and Plans (APO)
- Paul Greer, FAA Office of the Chief Counsel (AGC)

ADVISORY and SUPPORT STAFF

Sandra L. Lamparello, PAI Consulting, Inc.

SUMMARY OF TASKING

- Provide advice and recommendations to the ARAC on whether safety would be enhanced if persons engaged in the loading and supervision of the loading of **special cargo**, to include the preparation and accuracy of **special cargo load plans**, be certificated. If the Working Group recommends certification of these persons, it should also provide recommendations regarding which specific operations should require the use of these certificated persons. Additionally, it should also recommend appropriate knowledge, experience, and skill requirements for the issuance of the certificates and appropriate privileges and limitations.
- Determine the effect of its recommendations on impacted parties.
- Develop a report containing recommendations based upon its analysis and findings. The report should document both majority and dissenting positions on its recommendations and findings and the rationale for each position. Any disagreements should be documented, including the rationale for each position and the reasons for the disagreement.

SCHEDULE

- Tasking Assigned – May 12, 2016
- TELCON Meetings:

- TELCON 1 – October 11, 2016
- TELCON 2 – December 13, 2016
- TELCON 3 – January 10, 2017
- TELCON 4 – March 14, 2017
- TELCON 5 – April 11, 2017
- TELCON 6 – May 1, 2017
- TELCON 7 – June 5 & 13, 2017
- TELCON 8 – July 11, 2017
- TELCON 9 – September 11, 2017
- TELCON 10 – October 10, 2017
- TELCON 11 – November 20, 2017
- TELCON 12 – December 12, 2017
- TELCON 13 – January 3, 2018
- TELCON 14 – February, 13, 2018
- TELCON 15 – March 6, 2018
- TELCON 16 – March 20, 2018

- FACE-TO-FACE Meetings:

- Meeting 1 – August 30-31, 2016
- Meeting 2 – November 9-10, 2016
- Meeting 3 – February 7-8, 2017
- Meeting 4 – May 9-10, 2017
- Meeting 5 – August 15-16, 2017
- Meeting 6 – October 24-25, 2017
- Meeting 7 – January 16-17, 2018
- Meeting 8 – April 9-10, 2018

RECOMMENDATION

- By general consensus, the LCWG recommends the FAA require air carriers conducting special cargo operations under 14 CFR part 121 to have an FAA-Approved Special Cargo Program
- Special cargo is currently defined by FAA as: “cargo that requires special handling and securing/restraining procedures within the limitations specified in the Airplane Flight Manual (AFM) or Weight and Balance Manual (WBM) approved by the Type Certificate (TC) or Supplemental Type Certificate (STC).”
- The working group strongly feels the implementation of a comprehensive and approved program provides the best framework to enhance safety and allows the flexibility necessary to accommodate various air carrier’s operations.

FAA-Approved Special Cargo Program

- Those intending to transport special cargo would submit a comprehensive Special Cargo Program to the FAA for approval

- This Program would:
  - Identify specific training required to ensure compliance with Airplane Flight Manuals (AFM) applicable to the design approval holder (DAH) limitations and Weight and Balance Manuals (WBM)
  - Set forth requirements for the knowledge, abilities, and skills required for the special cargo analysis function (SCAF) in support of a specific air carrier's special cargo operations

FAA-Approved Special Cargo Program, CONT.

- The FAA would review and approve the Special Cargo Program using both the air carrier's principal operations inspector (POI) and principal maintenance inspector (PMI), with approval by one or the other, thus providing the agency with broader oversight and knowledge of the carrier's special cargo operations
- Continuous improvement and oversight of the air carrier by the FAA could be accomplished through the air carrier's Safety Management Systems (SMS) program.

DISSENT

- The dissenting position preferred the certification of individuals be accomplished using the regulatory provisions under 14 CFR part 65, similar to the certification of Repairman, and creating a subpart G. This position states the Repairman Subpart G option ". . . creates a certification for personnel responsible for the loading, restraint, and documentation of special cargo loads on transport-category airplanes"
- The dissenting position believes a 14 CFR part 65 certification would provide for a standardized minimum level of skill, knowledge, and experience for air carrier employees and/or those contracted to the air carrier
- During face-to-face meetings, the group respectfully acknowledged and discussed the dissenting position

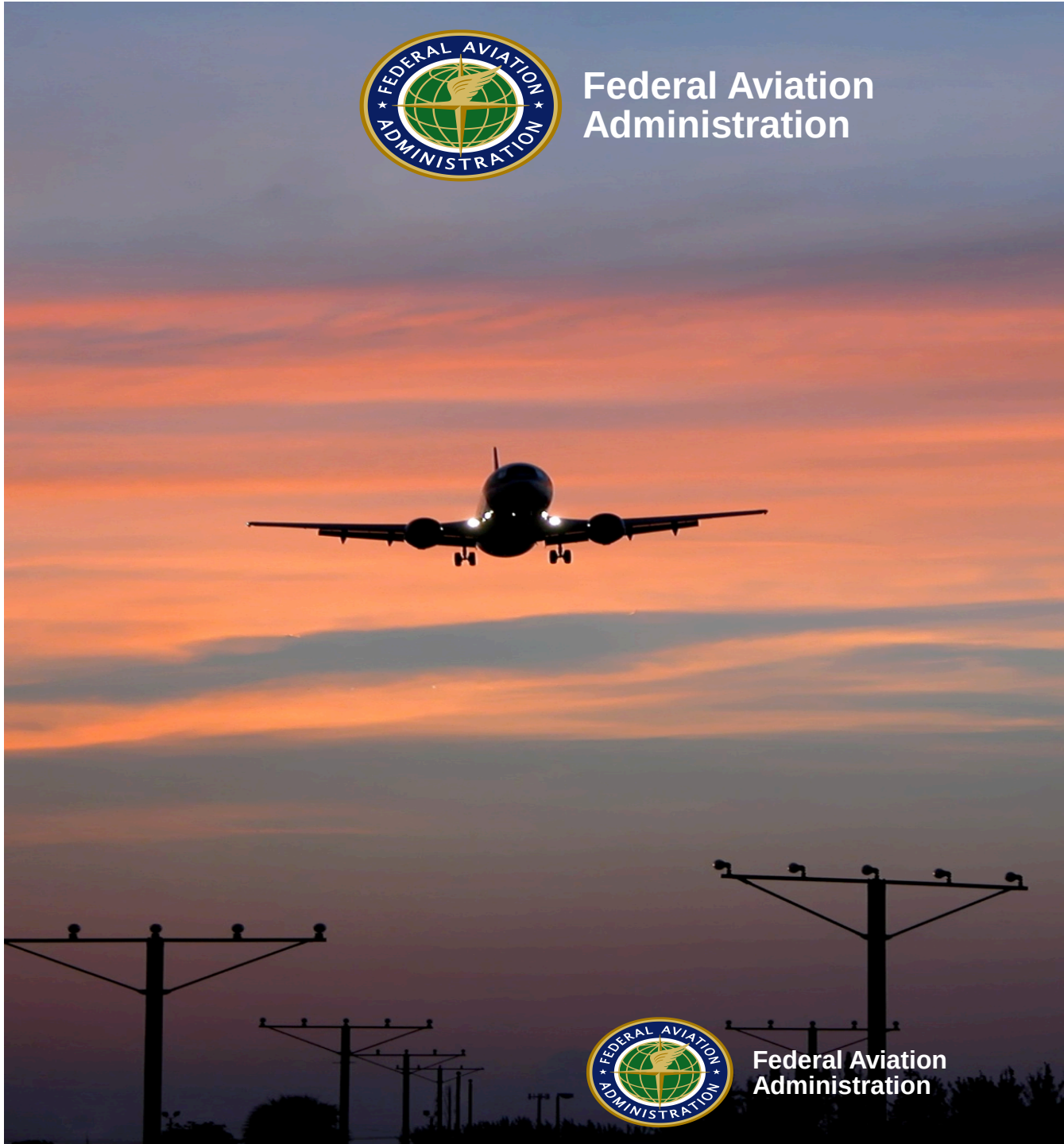
RECOMMENDATION RATIONALE

- The FAA-Approved Special Cargo Program would cover a broader scope of individuals across air carrier's operations
- The program would ensure air carriers are providing general awareness for most individuals and function-specific training for individuals who would handle special cargo
- Contractors and ground handling companies which are common in the industry would also be covered under the program
- This option is based on an existing program model used to mitigate the risks associated with the transport of dangerous goods/hazardous materials and is a familiar framework for the FAA and air carriers

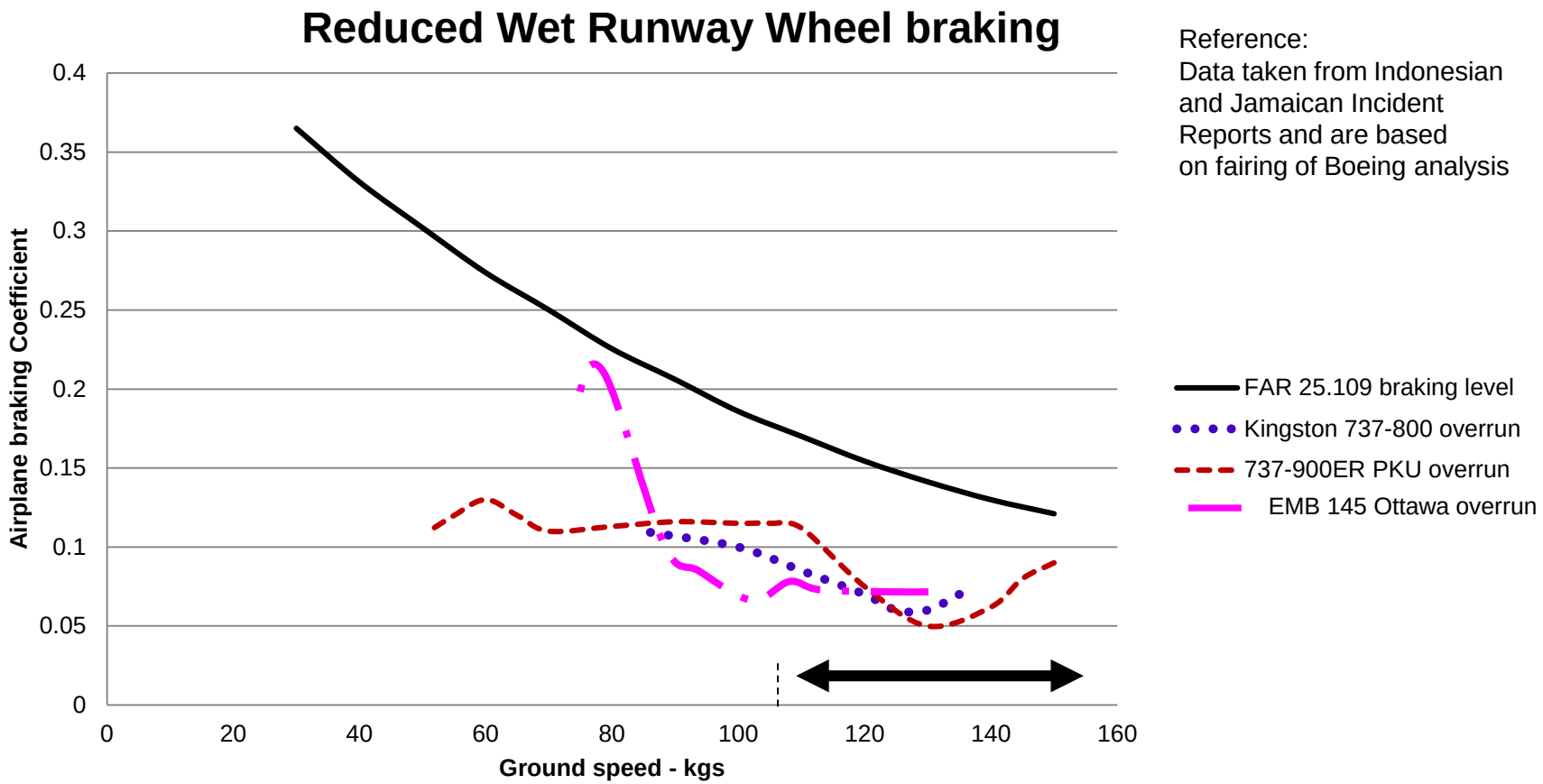
Summary

- The LCWG believes, as outlined in the report, our recommendation for adoption of the FAA-Approved Special Cargo Program will enhance safety for the persons engaged in the loading and supervision of the loading of special cargo.
- It will improve the preparation and accuracy of special cargo load plans and provide both air carriers and the FAA with the flexibility to address a wide range of operations while enabling more effective FAA oversight.
- The LCWG also believes its recommendation best incorporates the elements of the safety management system (SMS) philosophy by providing air carriers with a more effective means to use ongoing training data to continually improve their programs.

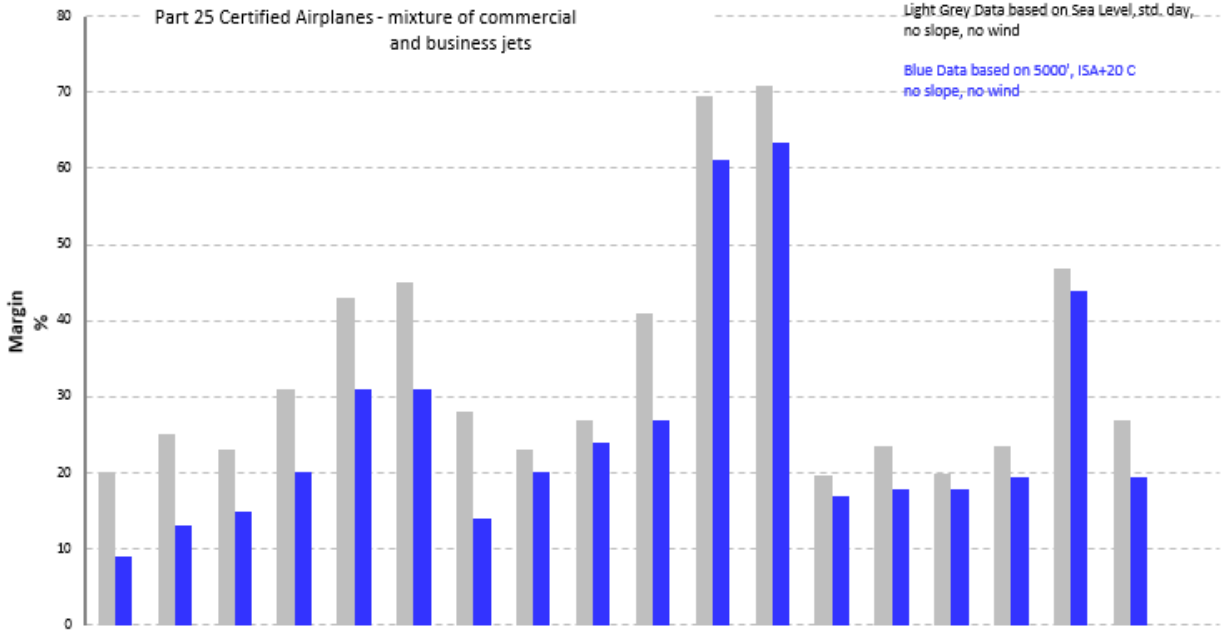
Wet Runway Proposed Regulation
Task 2 & 3 Topic 9
FTHWG



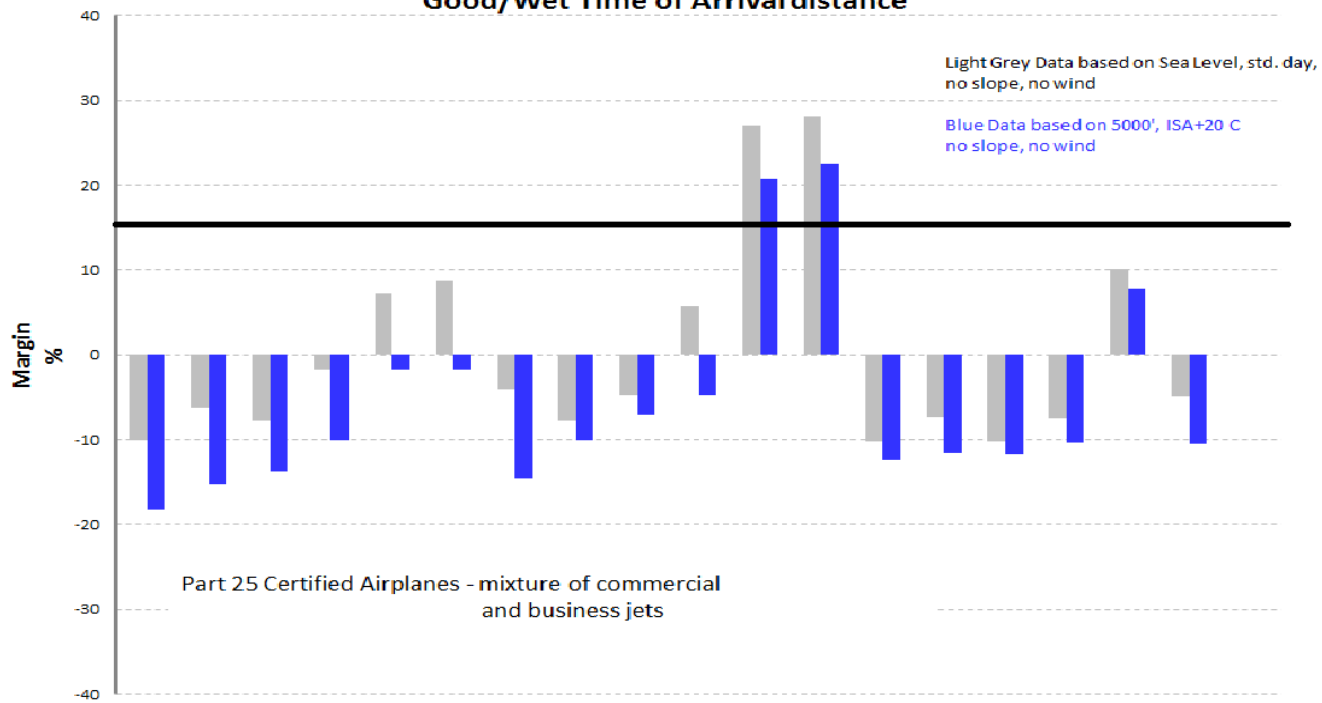
- **Impetus – Several wet runway overruns that have occurred demonstrated significant reduced wet runway wheel braking from what is expected.**



Current Regulatory Wet Margin (%) based on 1.92*CFR 25.125 dry to Good/Wet Time of Arrival distance



Current Regulatory Wet Margin (%) based on 1.44*CFR 25.125 dry to Good/Wet Time of Arrival distance



FTHWG recommendations to address Task 2

- **Define a new wet runway part 25 landing distance which accounts for the *physics* involved in stopping an airplane on a wet runway**
  - Based on realistic air distance (not currently done certified dry)
  - Based on reverse thrust credit
    - Current method results in significant margin reductions when:
      - 3 engine airplanes have 1 thrust reverser
      - 4 engine airplanes have 2 thrust reversers
      - Poor thrust reverser designs
      - No reverse thrust airplane designs
  - Full temperature accountability
  - Full engine failure accountability (at or after 50 feet)
  - 10% factor in part 25 all engine landing distance

Operational Rule Recommendations

- **Recommend operational factors for wet runway landing distance**
  - Should be the same for all operations (exception pure CFR 91)
  - Adequate to cover the reduced wet runway wheel braking observed in incidents.

- **Recommended all operating rules be based on a 15% increase on part 25 wet runway landing distance (25.126 proposed)**
  - Results in total wet runway landing distance margin at dispatch of 26.5% (1.10*1.15 = 1.265) on wet runway all engine landing distance
  - Results in total wet runway landing distance margin at dispatch of 15% if an engine fails at/after 50 feet
  - Results in landing distance necessary to account for reduced wet runway wheel braking observed in overruns (no additional margin added)

Operational Rule Recommendation 135EOD/91k

- **In recognition of reduced landing distances of 135EOD/91K Fractional Ownership**
  - Recommend the 15% factor above

Consensus

- **There is consensus that an improved wet runway rule is appropriate and needed to ensure adequate margin throughout the operating envelope. It is also agreed it is desirable to have a single method used for wet grooved/PFC or other new wet runway friction surface.**

Dissent – Embraer – size of total factor

- **Embraer dissented on the specific combination of part 25/part 121/135 operational factor total of 1.265**
  - This size of operational factor will result in some regional jets having a shorter SL, Std Day dispatch landing distance than current and some having a longer SL, Std Day dispatch landing distance.
  - This may lead to a re-certification of the airplane with the shorter “new” landing distance upsetting the competitive balance of the current operating aircraft.
- **Response**
  - Regulators desire larger total factor – 1.32 (1.1 part 25 *1.2 operating factor)
  - OEM’s and Operators desire smaller total factor – 1.21 (1.1 part 25 *1.1 operating factor)
  - This lower factor would not necessarily be acceptable to the regulators as the reduced wet runway wheel braking scenario would not be covered; the higher factor would not necessarily be acceptable to most manufacturers and operator as the increase in distance at SL, ISA conditions would be considered excessive.
  - Therefore, the 1.15 operational factor and total factor of 1.265 became an acceptable factor to most but it does not necessarily meet everyone’s needs.

Dissents – credit for reverse thrust

- **ALPA Dissent on reverse thrust credit:**
  - ALPA disagrees with including full thrust reverse credit in performance data. It is ALPA's experience application of reverse thrust may be inconsistent between pilots. Reverse thrust may not be used to its full efficiency due to variation in pilot experience or operational necessity (i.e. noise abatement).
  - Application of thrust reversers vary by aircraft operator and in some instances airline guidance is to minimize their usage due to wear and tear issues.
  - Further, thrust reversers are a deferrable item per the Master Minimum Equipment List, and during normal operations it is not unexpected to have an aircraft with one reverser inoperative. By allowing full credit for reversers, it is felt that the operational realities will not accurately mimic the flight test environment.
- **Response**
  - Current FAA dispatch requirements for wet runway are based on a dry runway calculation without consideration of reverse thrust (25.125) factored by operating requirement.
  - This results in the margin available on a wet or slippery runway by rule to be a function of the availability and usage of reverse thrust with the flight crew having no specific knowledge of what is required from them to obtain the stopping distance considered in the dispatch requirement on a wet or slippery runway.

Dissents – ALPA - credit for reverse thrust
Response continued

- Using the current data, the airplane with no thrust reversers or one thrust reverser or with an inoperative thrust reverser literally has less margin available than airplanes which have full thrust reverser availability.
- By including thrust reverser accountability and requiring data for all the combinations of thrust reverser usage (all reversers operative at recommended reverse thrust, idle reverse thrust, no reverse thrust) and taking into account the failure of an engine/reverser in the calculation of 25.126 the appropriate data will be available for consistent dispatch margins in all configurations for all airplanes.
- MMEL's will now have specific performance accountability for inoperative reverse thrust. This does add a variable to consider when dispatching
- Operators are free to assume idle reverse thrust or no reverse thrust if they feel it is appropriate because of requirements at any individual airports when computing there landing weight limits

Wet Grooved / PFC Improved Performance

- **Recommend codifying potential wet grooved/PFC improved performance in 25.126**
  - Discretion of the administrator as to airport/operational requirements
- **Considerations**
  - Manufacturer AFM coverage
  - Runway construction
  - Weather conditions
  - Runway condition
  - TOA assessment criteria
  - Operator conditions
  - Deviations from Criteria