[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Aviation Rulemaking Advisory Committee Meeting on

Transport Airplane and Engine Issues

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of public meeting.

SUMMARY: This notice announces a public meeting of the FAA's Aviation Rulemaking Advisory Committee (ARAC) to discuss transport airplane and engine (TAE) issues.

DATES: The meeting is scheduled for Thursday, October 14, 2004, starting at 8:30 am. Arrange for oral presentations by October 12, 2004.

ADDRESS: Aerospace Industries Association, 1000 Wilson Boulevard, Suite 1700, Arlington, VA.

FOR FURTHER INFORMATION CONTACT: John Linsenmeyer, Office of Rulemaking, ARM-207, FAA, 800 Independence Avenue, SW., Washington, DC 20591, Telephone (202) 267-5174, FAX (202) 267-5075, or e-mail at john.linsenmeyer@faa.gov.

SUPPLEMENTARY INFORMATION: Pursuant to section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92-463; 5 U.S.C. app. III), notice is given of an ARAC meeting to be held October 14, 2004 at the Aerospace Industries Association in Arlington, Virginia.

The agenda will include:

- Opening Remarks
- FAA Report
- European Aviation Safety Agency/Joint Aviation Authorities Report
- Transport Canada Report

Aviation Rulemaking Advisory Committee (ARAC)
Transport Airplane and Engine (TAE) Issues Area

Meeting Minutes

DATE: October 14, 2004
TIME: 8:30 a.m. – 4:00 p.m.
LOCATION: Aerospace Industries Association
1000 Wilson Boulevard
Conference Room 234
Arlington, VA 22209

Call to Order/Administrative Reporting

Craig Bolt, Assistant Chair of the TAE, called the meeting to order. All the attendees introduced themselves (see attached sign-in sheet), as well as persons who were attending via teleconference. Mike Kaszycki, Assistant Executive Director, read the Federal Advisory Committee Act statement for conducting the meeting.

Mr. Bolt commented on several of the agenda items **[handout #1 - PDF]**. He reported that Thaddee Sulocki has a new job with the European Aviation Safety Agency (EASA), and he will no longer be a member of TAE. Mr. Bolt said that he didn't know what EASA's plans were for supporting TAE. He said he had inquired how EASA intended to support TAE, but as of today he had not yet received a response. Mr. Bolt said that there would be no EASA report, but all of the remaining items on the agenda should proceed as planned.

Mr. Bolt then addressed action items from previous TAE meetings **[handout #2 - PDF]**. At the June 2004 meeting, regarding the Human Factors Harmonization Working Group (HWG), Mr. Bolt said that Curt Graeber reported to him that the working group will provide a "best effort" assessment of the cost/benefit analysis associated with the rule. Edmond Boullay had obtained Joint Airworthiness Authority (JAA) concurrence to remove certain pictures from the JAA position paper in the General Structures HWG report on Pressurized Compartment Loads (§ 25.365(d)). Mr. Boullay was also tasked with contacting EASA to inquire about the Agency's naming of a representative to the Airworthiness Assurance HWG. Mr. Bolt commented that he, Mr. Boullay and Dionne Krebs had all sent a note to Yves Morrier at EASA asking for an EASA representative. To date, no EASA representative has been identified. The final action item was that the Airworthiness Assurance Working Group was to send a proposal for a "non-advocate group" member list to himself and Mr. Kaszycki, which has been accomplished.

Mr. Bolt then briefly reviewed a list of tasks that are active within working groups as of today's meeting **[handout #3 - PDF]**. Keith Barnett (via telecon) asked if the list from the last meeting was still valid, and Mr. Kaszycki said that there were some changes but otherwise the list was current.

Mr. Bolt reviewed the Items of Interest Since June 2004 TAE Meeting **[handout #4 - PDF]**. He completed his comments by informing the TAE that he was anticipating receipt of the meeting minutes from the May and June TAE meetings. Once they're received from the FAA, Mr. Bolt would distribute them via email and coordinate comments and corrections on those minutes.

FAA Report (Mike Kaszycki)
Ms. Krebs started the FAA report **[handout #5 - PDF]** by providing a summary of current rulemaking actions at FAA. With respect to the Aging Airplane Program Update published in the Federal Register on 7/30/04, Walter Desrosier said that the FAA had received many comments on how the FAA is going to change the regulatory structure for part 25. He said most people support the general concept, but they're concerned about how it's going to work out. Mr. Desrosier asked about opportunities for continuing discussion on the issue. Ms. Krebs said there were many comments to go through, and a lot to be understood about the positions. She said that additional details regarding the specifics of the FAA's approach on the Aging Airplane program would be forthcoming in the individual Notice of Proposed Rulemakings (NPRMs). While industry provided good general comments, they could not comment on the specifics of the plan because they are not yet available to industry. Mr. Desrosier said that he presumed that that's why there were many comments. Ms. Krebs agreed that most commenters support the plan, and FAA will dispose of the comments using a method that hasn't yet been decided. Ms. Krebs said there might be a separate comment disposition document that would be published in the Federal Register.
Mr. Kaszycki said that commenters may want to debate particulars, but that doesn't change the scope of the notice. He said that they are addressing the comments specifically, and it's hard to do that and still maintain the schedule. Ms. Krebs said that the FAA has made progress with the coordination of the individual rulemaking initiatives.

Ms. Krebs said that the presentations that were sent out indicated the status of the individual rulemaking projects. Keith Barnett said he had trouble getting Transport Canada (TCCA) to consider the SFAR for Private Use Jets. He asked if FAA is going ahead with it. Mr. Kaszycki said that the FAA is planning to go ahead with it.
Ms. Krebs indicated that the JAA and TCCA declined to add this project to the Joint Prioritization List of Rulemaking Projects. He commented on the differences between FAA and EASA on implementation for certain new rules. Mr. Kaszycki told the TAE that domestic aircraft manufacturers should be careful not to be surprised by this.

Mr. Kaszycki then commented on FAA Rulemaking Prioritization. He said there needs to be a discussion of alternate rulemaking processes, and how the FAA can accomplish the ARAC recommendations "by other means." He reported that each FAA directorate is trying to identify items on that list that can be handled by other means. He said that there is a letter being coordinated at FAA that will respond to Mr. Bolt's email on that subject from November 2003. Mr. Desrosier asked the FAA to comment on what the "other means" are. He asked if one recommendation would be

voluntary compliance. Mr. Kaszycki said that voluntary compliance was one idea that may be forthcoming. Mr. Romanowski asked if the proposed voluntary compliance action would necessarily follow the ARAC recommendations, and Mr. Kaszycki said yes, that is the intent, with the exception of the minority opinions on those recommendations. Mr. Kaszycki said they're trying to stay locked on the harmonization issues.

With respect to the ARAC moratorium, Sarah Knife (via telecon) asked if the FAA is waiting for industry input on the issue. Mr. Kaszycki said that he did not know of any effort at the FAA for soliciting industry input on this issue. Dr. Knife asked if he would indicate to the group who, if any, the FAA may be receiving input from. Mr. Kaszycki said he isn't keeping track sufficiently to report to Dr. Knife on that issue.

Mr. Kaszycki said there was a Certification Management Team meeting at FAA, and at that meeting there was considerable discussion of EASA's rulemaking plans. He said that one outcome of the meeting was that Tony Fazio (the Director of the FAA Office of Rulemaking) was going to work with EASA to continue with the plan to maintain harmonization efforts for the future. Mr. Kaszycki commented that it was important to maintain all of the hard work that has been done in the last 10 years of harmonization efforts. He suggested that industry representatives should look at the EASA rulemaking plan for 2006-2008 and make an effort to comment on it. Mr. Desrosier offered to forward the rulemaking plan to Mr. Romanowski once it is listed on the EASA website. Mr. Kaszycki reported that Mr. Fazio was to meet with Claude Probst (Mr. Fazio's EASA equivalent) in December to discuss how the two organizations can work together on the rulemaking goals.

EASA/JAA Report

Mr. Bolt advised the group that Thaddee Sulocki was unable to attend the TAE meeting, and therefore would not be able to deliver his report. Mr. Bolt then commented on an informal meeting he had with Mr. Fazio and Ron Priddy (the Chairperson of ARAC). He said he had commented to Mr. Fazio on the fact that there hasn't been an ARAC Executive Committee meeting all year, and he asked Mr. Fazio for his input on the future of the ARAC. He said that Mr. Fazio reported that the FAA is using other forms of advisory groups to focus on specific aviation safety issues. Mr. Bolt said they talked about how the FAA will use Aviation Rulemaking Committees (ARCs) in the future. Mr. Kaszycki said that one function of the ARC is that they cross boundaries within the FAA, where TAE ARAC has been solely limited to Part 25. He said that groups like the Aviation Transport Systems Rulemaking Advisory Committee (ATSRAC) facilitate this type of integration better than the ARAC committees. Mr. Bolt said that Mr. Fazio agreed that there is a place for ARAC in the future, but they may transition to some other form.

Mr. Bolt asked the TAE that with only two with active working groups, should TAE move to abolish the remaining ones. Mr. Bolt said that he also talked about EASA and their work plan with Mr. Fazio. He said that Mr. Probst has no intention of having EASA become a member of ARAC, and so the work plan needs to be clear about how

EASA will participate in the ARAC meetings. He said that they decided that there will be a November 17, 2004 Executive Committee meeting, and Mr. Fazio will give his best assessment as to the future of rulemaking from advisory committees at that time.

Dr. Knife commented that EASA would have input in working groups, without a mandate to implement the changes. Mr. Romanowski said that with the proliferation of ARCs, and considering the public's ability to participate on issues for ARAC, he finds that that there is merit to having opportunity for public to comment. Keith Barnett (via telecon) asked the group about the protocol for getting the public involved in ARCs. Mr. Kaszycki said that ARCs have always asked for public input, by means of notices in the *Federal Register*. Dave Lotterer (Regional Airlines Association) commented that there is no notice to the public on the selection of members to an ARC. Mr. Desrosier agreed that, ultimately, membership of an ARC is at the discretion of the FAA. Dr. Knife said that using the *Federal Register* isn't the best means of notifying the public because sometimes it excludes key constituents. Mr. Barnett agreed with Dr. Knife. Mr. Romanowski commented that ARCs are championed as a disciplined approach to rulemaking, but there are some out there that tend to "self-perpetuate." Mr. Desrosier commented that the duration of the ARC depends on the issue being addressed and the management of the working group. He said that the development of the fractional ownership rule was relatively fast, and that particular success can be attributed to the ARC.

Mr. Kaszycki said that when the ARACs are well run, they work. He suggested that there be an annual or semiannual review of the status of the ARACs and ARCs. Mr. Lotterer said there is an international composition on an ARAC working group, but there isn't such participation at an ARC. Mr. Kaszycki said that there was international participation in a couple, such as ATSRAC. Rolf Greiner suggested that whatever happens for ARCs and ARACs, European industry should be involved. He admitted to Mr. Kaszycki that he was not happy with the progress of EASA. Mr. Greiner said it's a new system, and it may take some getting used to. Mr. Desrosier said that he agreed that the ARACs and ARCs definitely benefit from input from all entities, including European entities within the industry. Mr. Desrosier suggested that Mr. Bolt accept an action item to pass along comments from the TAE issues area about the future of the ARAC to Mr. Fazio before the Executive Committee meeting in November.

Ice Protection HWG Report (Jim Hoppins)
Jim Hoppins (via telecon) reviewed the Ice Protection HWG taskings individually **[handout #6 - PDF]**. He said they're trying to wrap up the task 2 issues. Mr. Romanowski asked about the non-consensus issues. Mr. Hoppins said that the non-consensus items were primarily between the Authorities and industry; the group does have consensus from the industry representatives in the working group, although there are split issues.

Bob Mazzawy followed Mr. Hoppin's summary of the Ice Protection HWG taskings with a discussion of the Engine HWG, related to the Ice Protection issues. Mr. Kaszycki asked about the new Appendix C for Part 33. Mr. Mazzawy described the reason why

the working group needed to add Appendix C. Mr. Kaszycki asked if the intent of the appendix was to cover the new mixed phase area. Mr. Mazzawy said that it was only intended to cover the new mixed phase area. Mr. Romanowski said that if you move it to part 33 from part 25, you would change the intent to cover all aircraft. Mr. Desrosier asked if the regulation could include an applicability statement, and Mr. Mazzawy replied that his group would clarify this. Mr. Romanowski said that you must consider the effect on other parts of the industry, and that the group should be aware of compliance issues. He cautioned Mr. Mazzawy about recommending a requirement that is impossible to comply with. Mr. Mazzawy said that he is aware of the issue. Mr. Kaszycki said that the working group is required to draft the exact language for the part 33 rulemaking. Mr. Mazzawy commented that his working group will produce a defensible product for discussion at the meeting in Phoenix, AZ next month.

Bob Park provided a summary of the Flight Test HWG report **[handout #7 - PDF]**. He reported that his working group appreciates the work of FAA and NASA for working on the tools for LEWICE-3 shapes. Mr. Park said they had spent a lot of time on the "detect and exit" scenario, and the group now believes that criteria more like those for the basic Appendix C certification should apply for this case. This is because the airplane is not required to immediately land, and could continue to a distant destination while maintaining a "detect and exit" ice shape. He also noted that the group is developing a proposed modification to Appendix X to add ice shape definitions as a function of flight phase. Mr. Kaszycki asked about Mr. Park's comment that Appendix X ice shapes are not as bad as he anticipated. He asked if that was true across the board, or if it's a generalization. Mr. Park said that in many but not all cases the Appendix X ice shapes computed using Lewice 3 are closer to the shapes that they find in appendix C than were Appendix X ice shapes computed using Lewice 2. This appears to be largely due to better accountability for droplet scattering in Lewice 3.

Airworthiness Assurance Working Group (AAWG) (Amos Hoggard)
Mr. Hoggard (via telecon) read his report on the new AAHWG task **[handout #8-PDF]**. He reported on the membership of the group, and reported that ATA are without representatives. Mr. Bolt said that he had communicated with EASA, along with Mr. Kaszycki and Ms. Krebs, about identifying an EASA representative.
Mr. Kaszycki said that the TAE agrees that there needs to be a representative from those organizations. Mr. Lotterer suggested that Mr. Hoggard talk to Ric Anderson about participating with the working group.

Mr. Hoggard commented that the most recent meeting was June 30, 2004. The CAA representative was not present, but there was good representation from the sitting members, along with some guest representatives. The next scheduled meeting is February 1, 2005, at the Airbus facility in Miami, FL. Mr. Hoggard commented that the February date was chosen because the task group will be handing off material for the AAWG to approve at that point.

Current tasks are associated with the Aging Aircraft Safety Interim Final Rule.
Mr. Hoggard commented that it was “in work and on schedule” at this point. He

anticipates being finished with Phase I before December 2005. Phase II is scheduled for completion in December 2008. Mr. Hoggard commented that the US Airways participating member had transitioned to a corresponding member.

Mr. Hoggard commented on Task 1, "Repairs to Baseline Primary Structure and Repairs to Alterations and Modifications." He said that there are two different paths of compliance; one is Structural Task Group (STG) activities, and the other is if an operator wants to develop his own means of compliance. Mr. Hoggard said that he does expect there to be a 3-year extension for the operational rule compliance date once the Aging Airplane Safety final rule is published. Mr. Hoggard said that for Phase II, the airplanes will have all the data necessary, which should support compliance by December 2010.

Mr. Hoggard solicited questions from the TAE. Mr. Lotterer asked Mr. Hoggard to comment on what kind of rulemaking he could anticipate evolving from the working group's activity. Mr. Hoggard commented that the group isn't authorized to write any rules, and he couldn't predict what the recommendations were going to be, but he did expect the FAA to take the recommendations from the working group and modify the rules that they've already submitted. Mr. Kaszycki commented that the Aging Airplane Safety Interim Final Rule was already published, and the FAA would be looking for recommendations on how to comply with the rule. Mr. Kaszycki said that they are not seeking new rulemaking for Widespread Fatigue Damage (WFD). The FAA is developing a WFD proposal based on the previous ARAC recommendation.
Mr. Bolt asked the TAIEG if there were any questions about accepting the AAWG work plan. Mr. Desrosier asked if the work plan meets the time line, and Mr. Kaszycki said that he was okay with it, but there isn't any room for flexibility. Mr. Barnette asked if there was a reason why the group isn't on the open taskings list. Mr. Bolt said that it should be on the open taskings list, and if it isn't, there may be a typographical error on the list. Mr. Bolt concluded the AAWG report by stating that the working group's work plan is accepted.

Written or Verbal Reports on Various HWGs (Craig Bolt)
Mr. Bolt said that he would accept comments on the statuses of the various HWGs:
Mr. Kaszycki then commented on the status of the Mechanical Systems HWG. In regard to the proposed recommendation for high altitude pressurization, Mr. Kaszycki said that the group is working with the Civil Aeromedical Institute (CAMI) to review the ARAC recommendation, and that this may involve additional R&D activities.

Mr. Priddy said that there was a task in mechanical systems (831a) that wasn't mentioned in the earlier report. Mr. Desrosier asked if there any plans to task the disposition of the comments received from the Flight Guidance NRPM to ARAC?
Mr. Kaszycki responded that the FAA hasn't gotten that far yet, and that they would decide soon on what method the FAA was going to use to disposition the comments from that NRPM.

Avionics Systems HWG (AVSHWG) (Clark Badie)

Clark Badie provided a summary **[handout #9 – PDF]** of the HWG's latest updates to draft Advisory Circular (AC) 25.11. The working group has used subteams to accomplish some of the work to improve efficiency, which Mr. Badie has found works very well. Regarding the outline of the draft AC, the group has been spending the most time on items 7-13, and finding it challenging, but is working through it.
Mr. Badie said that the working group was trying to find ways of reducing the size of the document. He commented on the issues in the AVSHWG, and reported that some persons were finding time to devote to the tasks, but using subgroups has helped. He commented that changing the membership (e.g. if new Foreign Civil Aviation Authority (FCAA) members were identified) at this point would be detrimental for the working group. He said that all three FCAA participants in the working group are excellent participants.

Mr. Badie reported that for the next meeting in January (in Savannah, GA), the HWG will try to close out issues like definitions and edits, and will specifically focus on the EVS issues. They hope to have a full version of the AC/AMJ at the end of the next meeting, and will have made progress with the appendices. Mr. Kaszycki asked about the date that the report will be submitted to the TAE. Mr. Badie said that ideally, the document will be submitted to the TAE for approval at the February 2006 TAE meeting. Mr. Badie suggested that perhaps the working group could issue a draft of the AC and without the appendices to the TAE for review before the February meeting. Mr. Desrosier said that he thought it would be important to provide a draft of the AC to the TAE and suggested that it be incorporated into the timeline. Mr. Badie agreed to do that, planning to provide a draft AC without appendices to TAE in the middle of 2005.

§ 25.1309 Specific Risk Activities (Mike Kaszycki)
Mr. Kaszycki began the summary **[handout #10 – PDF]** by discussing how different authorities were using the phrase "specific risk" and where specific risk was being applied. He said that they are facing a standardization issue, and they need to discover what the manufacturers are doing with regard to specific risk. He said that specific risk methods are used for showing compliance to part 25 and to develop Master Minimum Equipment Lists (MMELs). Dr. Knife (via telephone) said that she has found that the industry doesn't use specific risk. Mr. Kaszycki said he disagreed, and he's found that industry does use specific risk. He said that he had examples of how the industry is using specific risk, but he can't share those because he feels that the information is proprietary.

Mr. Romanowski said that one issue that confuses people is the difference in how industry defines specific risk. Mr. Kaszycki said that, in his presentation, he was going to discuss how industry defines specific risk and how the Authorities define specific risk. Mr. Doug Kihm asked if they were certifying to § 25.1309 in an MMEL configuration, and Linh Le (via telephone) said they were using a specific risk type of § 25.1309 analysis in the development of the MMEL, to justify an MMEL configuration.

Mr. Kaszycki showed a chart indicating specific risk, relative to time and configuration. He said that during an FAA telecon with the Boeing and the Systems Design and Analysis (SDA) HWG chair, they decided the CAST review was not the best way to proceed, based on concerns that CAST would not be independent from the SDAHWG members. Mr. Romanowski suggested that the reason that CAST was rejected was because there wasn't a standing definition of specific risk. Dr. Knife said that that's not how she thought the issue was resolved, and she was concerned about the breakdown in communication. Dr. Knife said that they'd recommended the CAST review in the Phase 1 recommendation, and now the FAA is going to choose not to do a CAST, or equivalent, review.

Mr. Kaszycki said that the SDAHWG reviewed the definition of specific risk from the Authorities, and provided feedback. The FAA is trying to coordinate the feedback between the FAA and the other Authorities. He listed the definition offered by the Authorities and one from SDAHWG. Mr. Kaszycki asked for some suggestions on where to go from this point. He said that they had recommendations from several HWGs, all using a slightly different definition of specific risk. Mr. Kaszycki said there's at least a standardization issue that needs to be address for part 25 (this is not a powerplant issue). He said it is ideal to have one type of specific risk methodology that can be used in part 25, as well is in other applications, and cited a number of part 25 rules which included use of specific risk.

Mr Kaszycki said that the 25.901 ARAC recommendation was concurred with by the FAA contingent upon specific risk being required in 25.1309. Dr. Knife said that the powerplant harmonization working group deliberately did not make a recommendation about specific risk in § 25.901 recommendation, and that she could not find any documentation of the FAA concurrence being qualified as above. She asked Mr. Bolt if he knew of such a qualification on acceptance of the 25.901(c0 package, he stated that he could not recall one; Mr. Kaszycki said the FAA is seeking an integrated set of recommendations from ARAC for the purpose of standardization. Mr. Kaszycki said that it is very difficult to form an independent body on the issue. He said they might be able to work the issue within the TAE framework.

Mr. Kaszycki said the third option (proposed next step) is the only viable way to go, and sought advice from the members of the TAE on how to proceed. He said that to go forward with three different ways of defining the issue is not appropriate.
Mr. Romanowski asked when you look at the applications, how do you know which are certification versus company design practices, or other applications? Mr. Kaszycki said that the specific risk analyses are being turned in for compliance to part 25 standards. He said that the Authorities do not consistently mandate them.
Mr. Lotterer said that the MMEL process is independent from certification, and the requirements are "whatever is acceptable to the Administator." He said it sounds like the group is trying to address inconsistencies among MMELs that are used throughout the world. Mr. Lotterer said that you want to have a consistent way of determining the level of specific risk to develop MMELs. He said that the group to do this work should be a group that works on MMEL components.

Dr. Knife suggested that there was a conflict in philosophies, and said that there was resistance to using a common specific risk analysis approach. Mr. Kaszycki said that it's an opportunity to be consistent, and it is best for the FAA not to publish rules using inconsistent criteria. Dr. Knife asked why we wouldn't want a separate body to decide on this issue, and Mr. Kaszycki said that it was because they decided that using CAST wasn't the appropriate body to use at this time. Mr. Romanowski commented that the reason why they decided not to use CAST was because no one agreed on the definition. He said the group needs to have a common understanding on what CAST is going to assess. He said that if CAST issued a definition, it wouldn't match the FAA's and other definitions used by industry, and, as a result, no one would agree to use it. Dr. Knife told Mr. Kaszycki that that was why a clear, easily-used definition was important, and the industry part of the SDHWG were going to try to accomplish this by closely defining specific risk. She said that she thought it was worthwhile having a discussion about it.

Mr. Lotterer said that he perceives this issue is not as important as the FAA has made it. He said that the FAA has a lot of discretion, and that the agency could let the airlines develop a common methodology for MMEL development. He said that if industry developed the methodology, you would have greater acceptance.
Mr. Romanowski said that the issue is significant, and how you apply the concept must be defined. Mr. Kaszycki said that this is the opportunity to define how it is applied.

Doug Lane (via telecon) said that that there has been concern in industry as to whether the method they're using is appropriate. George McEachen (via telecon) said the MMEL Procedures Manual **[handout #11 – PDF]** issued in June 2004 by the Airworthiness Evaluation Group formally describes the policy for developing the MELs. Mr. Lotterer said there are lots of policy statements, but do they sufficiently address the issue of risk. Dr. Knife said the task will not be easy, considering the part 25 certification issues. Mr. Romanowski said that any reluctance on the part of the group to undertake the task is because the expectation is rulemaking as an outcome, and in the process, they may invalidate a lot of current practices. He suggested that if the issue were limited to § 25.1309 and to MMELs, there might be more interest in participating. Tom Peters said the sides need to agree on the need to go forward with this activity. He said that without a data review, there won't be any progress on developing a specific risk definition.

Mr. Barnett asked if the group had discussed the issue 2 years ago, and maybe they could look at the data to decide on why they didn't define the issue then. Dr. Knife said they had looked at it and decided it wasn't necessary, and Mr. Kaszycki said that the FAA has determined that it was necessary, and that a CAST assessment wasn't appropriate. Mr. Kaszycki said that they could task the HWG, with an outlined approach at solving the issue, and Mr. Barnette suggested that solving the definition issue may not be an achievable goal. Mr. Kaszycki said that the FAA could draft a tasking which would indicate the scope and magnitude of what they want the working group to assess, and provide a check-and-balance mechanism. He suggested that

the FAA would try to get the EASA buy in on the draft tasking before sending it to TAE. Dr. Knife suggested that the group needs a commitment from the EASA to abide by the findings, or else EASA shouldn't be involved in the process. Mr. Kaszycki said that the EASA opinion on specific risk is stricter than the FAA's. Mr. Romanowski suggested that it is important to make sure that there isn't a "de facto" decision on the issue by the FAA before the issue is returned to the TAE. Dr. Knife suggested that it might be helpful to have an industry representative write the tasking.

Action Items

Mr. Bolt reviewed the Action Items, and indicated that the list would be sent to members electronically.

Item	Action	Status
October 2004 Meeting		
1.	TAE members to provide input to Mike Kaszycki on the EASA 2006-2008 work plan posted on the EASA Website (due 11/30/04).	Open
2.	Mike Romanowski to provide Mike Kaszycki with AIA comments on the initial EASA draft plan.	Open
3.	Craig Bolt to email comments from TAE members on the future of ARAC (prior to ex com) to Tony Fazio.	Open
4.	FAA shall draft a proposal for specific risk tasking, including cross-functional team, checks and balances, which would address standardization of specific risk compliance methodologies. FAA shall provide to TAE for comment by November 30, 2004. FAA will coordinate the tasking with EASA.	Open

Future Meetings:

February 9, 2005 in Washington, DC (Boeing)
June 15, 2005 in Washington, DC (via telecon)
October 19, 2005 in Seattle, Washington (FAA)

Public Notification **[handout #12 – PDF]**

The *Federal Register* published an announcement notice of this meeting on September 30, 2004.

Approval

I certify the minutes are accurate.

#1

Transport Airplane and Engine Issues Group Meeting
Aerospace Industries Association
1000 Wilson Blvd., Suite 1700
Arlington, VA

DRESS: BUSINESS CASUAL

Thursday, October 14, 2004 – ***(Call in number:202-366-3920 Passcode 4087)***

8:30	Call to Order, Reading of the Procedures Statement, Review of Agenda, Meeting Logistics, Review of Action Items, Items of Interest, Review of Minutes from previous meeting	C. Bolt/M. Kaszycki
9:00	FAA Report	M. Kaszycki
9:30	EASA / JAA Report	T. Sulocki
10:00	***-- BREAK --***	
10:15	Transport Canada Report	M. Khouzam
	Excom Report	No Meeting / No Report
	Harmonization Management Team Report	No Meeting / No Report
10:30	Ice Protection HWG Report • Include discussion of EHWG / FTHWG / PPIHWG support as appropriate	J. Hoppins (J. McRoberts, Bob Park, A. Lewis-Smith)
11:30	***-- LUNCH --***	
12:30	Airworthiness Assurance HWG • Presentation of Work Plan	A. Hoggard
1:30	Avionics HWG Report	C. Badie
2:00	***-- BREAK --***	
2:15	25.1309 Summary of Any Recent Activity on Specific Risk	FAA / TAEIG
3:15	• General Structures • Engine HWG • Electromagnetic Effects HWG • Flight Test HWG • Seat Test HWG • Flight Control HWG • Flight Guidance HWG • System Design and Analysis • Electrical Systems HWG • Design for Security HWG • Powerplant Installation HWG • Mechanical Systems HWG • Human Factors	Written or verbal reports as required
3:45	Review Action Items / Meeting Schedule	C. Bolt
4:00	Adjourn	

TAEIG – June 15/16, 2004 Action Items

1. Human Factors HWG to provide "best effort" assessment of proposed new Human Factors rule cost-benefit analysis.

2. Edmond Boullay to obtain JAA concurrence to remove pictures from the JAA position paper in the GSHWG report on 25.365(d).- Done

3. Edmond Boullay to contact EASA regarding naming an EASA representative for the AAWG.

4. AAWG to send "non-advocate group" proposed member list to C. Bolt/ M. Kaszycki for approval.

#3

Tasks That Are Active Within WG's as of 10/14/04

A task is considered active if:

- There has not been a formal ARAC recommendation

or

- There has not been a submittal of a proposed NPRM or AC for formal economic or legal review.

- Airworthiness Assurance – New Task – Develop Compliance to Aging Airplane Safety Rule Requirements

  Avionics – AC25-11
  Braking Systems – None
  Continued Airworthiness Assessment Methodology – None
  Cargo Compartment – None
  Design for Security - None
  Direct View – None
  Electromagnetic Effects - None
  Electrical Systems - None
  Engine - None
  Flight Control - None
  Flight Guidance - None
  Flight Test – None

Tasks That Are Active Within WG's as of 10/14/04 (continued)

General Structures -	None
Human Factors -	None
Hydraulic –	None
Ice Protection -	Tasks 2 through 7
Loads and Dynamics -	None
Mechanical Systems -	None
Powerplant Installation -	1) 25.903(d) Rotor Burst – Moratorium planned 2) 25.975 Fuel Tank Vent Fire Protector – Moratorium planned
Systems Design & Analysis-	Phase II Pending
Seat Test -	None

#4

Items of Interest Since June 2004 Meeting

1. ARAC recommendation to FAA, Human Factors, June 22, 2004

2. ARAC submittal to FAA, Pressurized Compartment Loads, October 4, 2004

3. Flight Guidance System (25.1329) NPRM and AC published for comment, August 13, 2004

4. Final Rule; Misc Flight Requirements, Powerplant Installation Requirements, Public Address System, Trim Systems and Protective Breathing Equipment and Powerplant Controls, July 2, 2004

FAA Report

Mike Kaszycki
Manager, Transport Standards Staff

October 14, 2004

October 2004 TAEIG Meeting

Topics:

- Rulemaking Project Status
- Non-Rulemaking Project Status
- Update on Rulemaking Prioritization
- Update on HWG Moratorium
- Certification Management Team Actions

October 2004 TAEIG Meeting

Rulemaking Project Status: (since June 2004)

- Part 25 Final Rules (FR) issued:
  - Revisions to Powerplant Installation Requirements* (§§ 25.945(b)(5), 25.973(d), 25.1181(b), 25.1305(a)(7)(d)(2))
    - Amdt. 25-115, issued 6/24/04
  - Public Address System* (§ 25.1423)
    - Amdt. 25-115, issued 6/24/04
  - Powerplant Controls* (§ 25.1141)
    - Amdt. 25-115, issued 6/24/04
  - Miscellaneous Flight Requirements* (§§ 25.111(c)(4), 25.147(c)(2), 25.161(c)(2),(e), 25.175(d))
    - Amdt. 25-115, issued 6/24/04
  - Trim Systems* (§ 25.677)
    - Amdt. 25-115, issued 6/24/04
  - Protective Breathing Equipment* (§ 25.1439)
    - Amdt. 25-115, issued 6/24/04

** Fast Track ARAC Category 1 (enveloping) projects*

October 2004 TAEIG Meeting

Rulemaking Project Status: (since June 2004) *continued*

- Part 25 related FR issued:
  - Fuel Tank Safety Compliance Extension*
    - Issued 7/21/04, Amdts. 91-283, 121-305, 125-46, and 129-39
- Part 25 Notice of Proposed Rulemaking (NPRM) issued:
  - Flight Guidance Systems (§ 25.1329)
    - Issued 7/28/04, comment period closed 10/12/04
- Part 25 related notices issued:
  - Withdrawal of task related to fuel-vent system fire protection (§ 25.975) from ARAC
    - Issued 6/15/04
  - Aging Airplane Program Update*
    - Issued 7/21/04, comment period closed 9/29/04

** These were contained in the same document*

October 2004 TAEIG Meeting

Rulemaking Project Status: (since June 2004) *continued*

- FRs in Headquarters (HQ), OST or OMB Coordination:
  - 2 Part 25 projects
- NPRMs in HQ, OST or OMB Coordination:
  - 3 Part 25 project
  - 2 Part 33 projects
- NPRMs in Directorate Coordination:
  - 2 Part 25 projects
- NPRMs in HQ for regulatory evaluation development:
  - 2 Part 25 projects
  - 2 Part 33 projects
- 1 New Tasking under development

Note: Low Fuel Level Warning and Wheel Well Fire Protection/Tire Burst taskings are on hold awaiting action by the JAA/EASA.

October 2004 TAEIG Meeting

Non-Rulemaking Project Status: (since June 2004)

- Final Policy Memos were issued:
  - § 33.87, Endurance Testing (Transients)*
    - Issued 8/24/04
  - Policy Statement on Evaluating a Seat Armrest Cavity for a Potential Fire Hazard (§ 25.601)
    - Issued 7/14/04
- Draft Advisory Circulars (AC) were issued for comment:
  - AC 25-1329-1A, Automatic Pilot Systems Approval
    - Issued 7/28/04, comment period closed 10/12/04
  - AC 33.75, Safety Analyses
    - Issued 7/13/04, comment period closes 10/30/04

October 2004 TAEIG Meeting

Non-Rulemaking Project Status: (since June 2004)

Continued

- Part 33 ACs in-work (non-ARAC projects)
  - AC 33.Repair, Repairs
  - AC 33.27-1, Rotor Integrity Overspeed*
  - AC 33.4-3, HIRF/Lightning FADEC Maintenance*
  - AC 33.83, Vibration Test
  - AC 33.87, Endurance Test

* Comment period closed

Update on FAA Rulemaking Prioritization

- The AVR organization is beginning to review and revise the AVR Rulemaking Priorities List.
  - This activity will not likely affect the TAEIG related projects.
- The FAA will send a follow-up letter to ARAC regarding those ARAC recommendations which will be handled by alternative means, rather than rulemaking.
  - The FAA is identifying appropriate ways to use the results of the ARAC recommendations:
    - Policy, Equivalent Safety Finding/Exemptions, Special Conditions, acceptable means of compliance, etc.

October 2004 TAEIG Meeting

Update on HWG Moratorium:

- The FAA plans to remove the moratorium once the FAA and industry finalize their positions on the PPIHWG 25.903(d) Rotorburst task.

- The FAA will send a letter to TAEIG to:
  - Remove the moratorium
  - Identify the FAA plan with respect to the PPIHWG 25.903(d) Rotorburst task.

October 2004 TAEIG Meeting

Certification Management Team (CMT) Actions:

- The FAA will work with EASA on a process for maintaining harmonization in future rulemaking initiatives.

Ice Protection HWG Status

Presentation to ARAC TAEIG
Oct - 2004

Task 1 Complete Except for Ice Detector TSO

Unchanged

IPHWG

Proposed Operational and Certification rules address Task 1, except for TSO aspect

- ⇨ "Also consider the need for a Technical Standard Order for design and/or minimum performance specifications for an ice detector and aerodynamic performance monitors. Develop the appropriate regulation and applicable standards and advisory material if a consensus on the need for such devices is reached."

Per Oct 2003 TAEIG discussion:

- ⇨ IPHWG initiating reviewing of SAE/EUROCAE Standards
  - In-flight ice detector only, component level TSO
  - Identify any additional qualification requirements
  - Identify anything not appropriate for a TSO
- ⇨ IPHWG comments to be sent to TAEIG for forwarding to AIR-120 for consideration in drafting a TSO.
- ⇨ Priority after Task 2, some comments received

June IPHWG Meeting Status - Task 2

IPHWG

- Definition of SLD environment is close (Appendix "X")
  - ⇨ Concerns about quality of some of the legacy data
    - Primarily ice crystal contamination
    - Teleconference planned to work details
- Advisory Circular near completion
  - ⇨ Incorporated FTHWG comments
  - ⇨ Need to firm up section discussing Appendix "X"
- Interim Working Group Report released to sub-groups
  - ⇨ Non-consensus items
    - Flight testing requirements in natural SLD
    - Means to determine exceedance of App. "X"
    - Limiting applicability based on certain design features
  - ⇨ Have rough cost estimates for formal FAA economic review
  - ⇨ Still needs some clean up work
  - ⇨ Place holders for sub-group reports

FTHWG Support of IPHWG Task 2

IPHWG

- FTHWG considering impact of Appendix X on 25.21(g) proposals
  - ⇨ Joint meeting planned EOM November (Ft. Lauderdale)
  - ⇨ Separate status report

- FTHWG recommending IPHWG coordinate SLD issue with other disciplines
  - ⇨ Autopilot
  - ⇨ Structures (aeroelastic stability)
  - ⇨ Human factors
- Planning teleconference to address

EHWG/PPIHWG Report

Oct 7, 2004

Status of EHWG & PPIWHG committee on SLD and Mixed Phase/Glaciated Icing 10/8/04

- Recent Meeting Aug 24-26, Seattle
  - Engine/Installation Technology Roadmap requirements session with Tom Bond/Gene Hill
  - Addition of Turboprop experience to Data Base reinforces focus on Mixed Phase/Glaciated conditions
  - Definition of extended icing envelope for Mixed Phase/Glaciated operation

Status of EHWG & PPIWHG committee on SLD and Mixed Phase/Glaciated Icing 10/8/04

- Report from Sub-Teams formed in February:
  - FAR33.77 Slab ingestion test
    - Draft of Rule Change
    - Firming up threat of 2 minute delay of inlet anti-icing with critical point assessment and addition of Appendix X to quantify effect on ice slab size
    - Relating to legacy slab ingestion testing
    - Working compliance requirements
  - FAR33.68/25.1093 Induction System Icing
    - Draft of Rule Change
    - Critical point analysis requirements
    - Ground SLD/Mixed Phase/Cold Tamb icing requirements
    - Requirements based on legacy Advisory Circular Test conditions
    - New FAR Part 33 Appendix C – Mixed Phase Icing Envelope

Status of EHWG & PPIWHG committee on SLD and Mixed Phase/Glaciated Icing 10/8/04

- Sub-team reports (cont)
  - Mixed Phase/Glaciated – AC20-147 Revision
    - Draft of Advisory Circular Revision will include:
      - Threat definition (New FAR 33 Appendix C)
      - Design considerations/experience with mixed phase accretion
      - Test techniques (Flight/Ground/Component)
      - Analysis techniques
    - Compliance Issues
      - Analysis and Testing in Mixed Phase Conditions
      - Lack of Test Facilities for Mixed Phase

Status of EHWG & PPIWHG committee on SLD and Mixed Phase/Glaciated Icing 10/8/04

- Technology Road Map Discussion
  - Joint programs with NASA to characterize convective clouds (mixed phase/glaciated)
  - Analysis of ice accretion with ice crystals
  - Ground test simulation of flight icing conditions
  - Need for propeller icing and ice detection instrumentation
- Plans for November 16-18 Meeting (Phoenix)
  - Focus on Rule and Advisory Material Revision Drafts for Jan 2005

Plan for Final Product - *Unchanged*

IPHWG

IPHWG to complete Task 2 systems aspects and environment definitions as much as possible with current information and moves on to other tasking

- ⇨ Release interim products to sub-groups to assist in tasking
- ⇨ Maintain coordination with other sub-groups as required
- ⇨ Start FAA preliminary technical writer and legal review of IPHWG products

When other working group products are received, a review & coordination period to consolidate the IPHWG/other sub-group products will likely be required

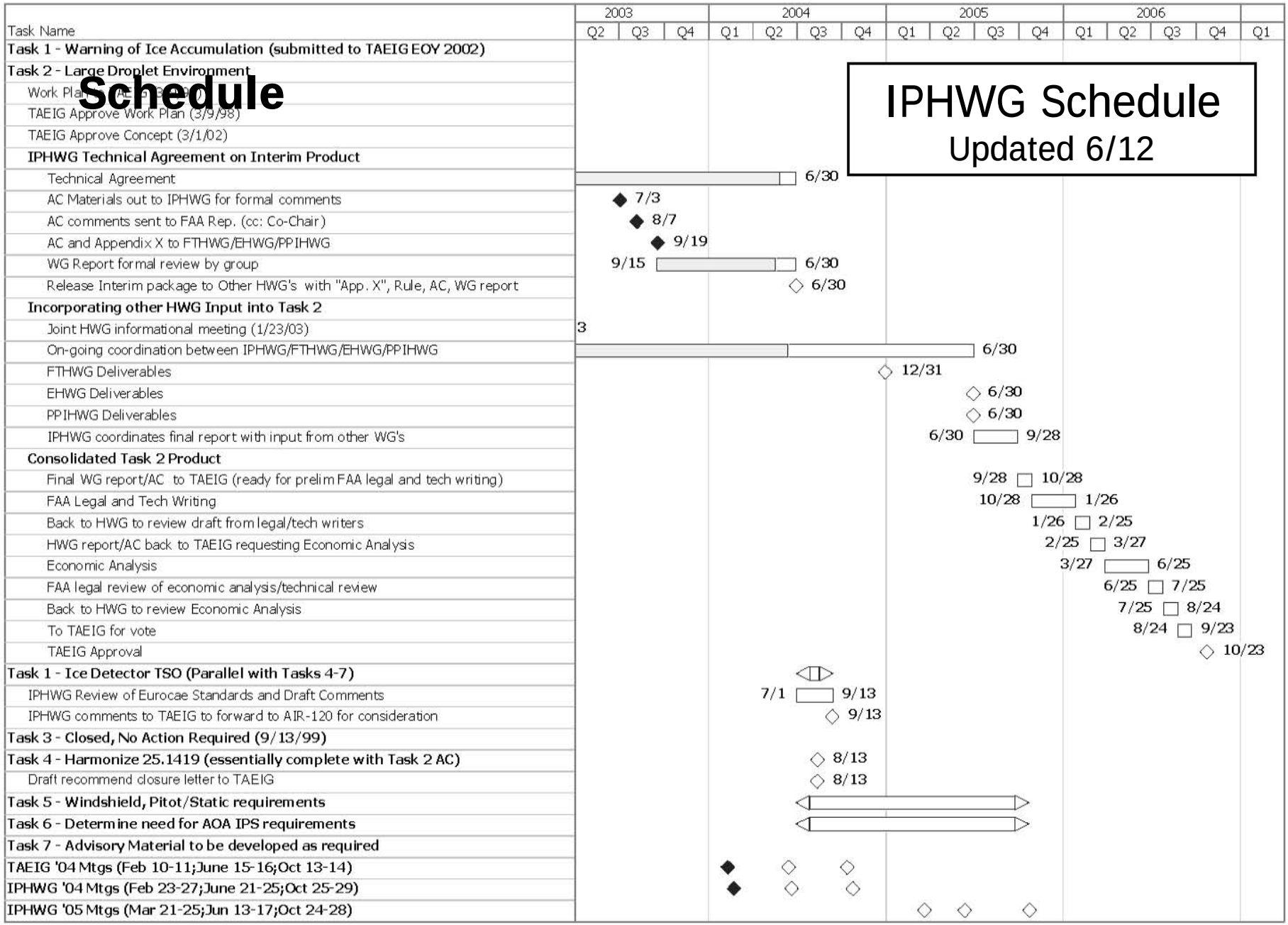
- ⇨ Telecons and/or meeting(s) as required
- ⇨ Other sub-group products are incorporated in IPHWG report as separate sections or appendices

Consolidated package submitted to TAEIG for approval and final FAA economic and legal review

Task 2 Major Issues

- Firm up positions for a "means to discriminate between conditions within and outside the certification envelope"
- Finalize positions relative to flight testing in SLD
  - ⇨ Currently have Boeing/Airbus minority position
- Resolve any issues with FTHWG at joint meeting (Nov.)
- Integrate FTHWG/PPIHWG/EHWG recommendations into final report

Schedule


IPHWG Schedule
Updated 6/12
2003
2004
2005
2006
Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1
Task Name
Task 1 - Warning of Ice Accumulation (submitted to TAEIG EOY 2002)
Task 2 - Large Droplet Environment
Work Plan (3/98)
TAEIG Approve Work Plan (3/9/98)
TAEIG Approve Concept (3/1/02)
IPHWG Technical Agreement on Interim Product
Technical Agreement
AC Materials out to IPHWG for formal comments
AC comments sent to FAA Rep. (cc: Co-Chair)
AC and Appendix X to FTHWG/EHWG/PPIHWG
WG Report formal review by group
Release Interim package to Other HWG's with "App. X", Rule, AC, WG report
Incorporating other HWG Input into Task 2
Joint HWG informational meeting (1/23/03)
On-going coordination between IPHWG/FTHWG/EHWG/PPIHWG
FTHWG Deliverables
EHWG Deliverables
PPIHWG Deliverables
IPHWG coordinates final report with input from other WG's
Consolidated Task 2 Product
Final WG report/AC to TAEIG (ready for prelim FAA legal and tech writing)
FAA Legal and Tech Writing
Back to HWG to review draft from legal/tech writers
HWG report/AC back to TAEIG requesting Economic Analysis
Economic Analysis
FAA legal review of economic analysis/technical review
Back to HWG to review Economic Analysis
To TAEIG for vote
TAEIG Approval
Task 1 - Ice Detector TSO (Parallel with Tasks 4-7)
IPHWG Review of Eurocae Standards and Draft Comments
IPHWG comments to TAEIG to forward to AIR-120 for consideration
Task 3 - Closed, No Action Required (9/13/99)
Task 4 - Harmonize 25.1419 (essentially complete with Task 2 AC)
Draft recommend closure letter to TAEIG
Task 5 - Windshield, Pitot/Static requirements
Task 6 - Determine need for AOA IPS requirements
Task 7 - Advisory Material to be developed as required
TAEIG '04 Mtgs (Feb 10-11;June 15-16;Oct 13-14)
IPHWG '04 Mtgs (Feb 23-27;June 21-25;Oct 25-29)
IPHWG '05 Mtgs (Mar 21-25;Jun 13-17;Oct 24-28)
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WG Task Priorities & Schedule

IPHWG

Priorities

- Task 2 - Firm up SLD definition (Appendix "X")
- Task 2 - Advisory Circular Draft 2 released to sub-groups incorporating FTHWG recommendations
- Beginning efforts on Task 1 - TSO and Tasks 5-7
- Task 4 to be considered complete
  - ⇨ AC 25.1419 was incorporated into a harmonized AC 25.1419/25.1420
  - ⇨ WG action to draft closure letter with submittal of Task 2

Schedule

- Mtg 29 – Nov. 30-Dec.3, '04 Ft. Lauderdale / Joint FTHWG Mtg
- Mtg 30 - Mar. 21-25, '05 Europe
- Mtg 31 - Jun. 13-17, '05 US (~NASA Ames)
- Mtg 32 - Oct. 24-28, '05 Europe

Reference Information

Task 1

IPHWG

"As a short-term project, consider the need for a regulation that requires installation of ice detectors, aerodynamic performance monitors, or another acceptable means to warn flight crews of ice accumulation on critical surfaces requiring crew action (regardless of whether the icing conditions are inside or outside of Appendix C of 14 CFR Part 25). Also consider the need for a Technical Standard Order for design and/or minimum performance specifications for an ice detector and aerodynamic performance monitors. Develop the appropriate regulation and applicable standards and advisory material if a consensus on the need for such devices is reached."

- ⇨ Proposed Part 121 rule submitted to TAEIG with FAA legal and economic analysis, September 2002
- ⇨ Proposed Part 25 certification rule "fast tracked" in Dec 2000, no further WG actions

Task 2

"Review National Transportation Safety Board recommendations A-96-54, A-96-56, and A-96-58, and advances in ice protection state-of-the-art. In light of this review, define an icing environment that includes supercooled large droplets (SLD), and devise requirements to assess the ability of aircraft to safely operate either for the period of time to exit or to operate without restriction in SLD aloft, in SLD at or near the surface, and in mixed phase conditions if such conditions are determined to be more hazardous than the liquid phase icing environment containing supercooled water droplets. Consider the effects of icing requirement changes on 14 CFR part 25 and revise the regulations if necessary. In addition, consider the need for a regulation that requires installation of a means to discriminate between conditions within and outside the certification envelope."

- ⇨ Removed reference to Part 23 per FAA letter 2/12/02
- ⇨ Revised to add Part 33 requirements?

Remaining Tasking (reference)

IPHWG

Task 3 - "Propose changes to make FAR 23.1419 and 25.1419 the same"

- ⇨ Returned to FAA for further action (ref. FAA letter Sept 13, 1999)
- ⇨ No further IPHWG actions

Task 4 - "Harmonize 14 CFR 25.1419 and JAR 25.1419"

- ⇨ Revised per FAA letter of Nov. 10, 1999
- ⇨ Rule language harmonized, but advisory materials are not
- ⇨ AC materials for 25.1420 incorporated AC 25.1419 (harmonized)
- ⇨ Task 4 essentially complete, WG to draft proposed closure letter

Task 5 - "Consider the effects icing requirement changes may have on 14 CFR 25.773(b)(1)(ii), 25.1323(e), 25.1325(b) and JAR 25.773(b)(1)(ii), 25.1323(e), 25.1325(b). Revise and harmonize the regulations if necessary."

- ⇨ Revised per FAA letter of Nov. 10, 1999

Task 6 - "Consider the need for a regulation on ice protection of angle of attack probes"

Task 7 - "Develop or update advisory material pertinent to items 2 through 6 above."

FLIGHT TEST HWG STATUS

PRESENTATION TO ARAC TAEIG

October 14, 2004

Topics

- TAEIG Request of FTHWG
- Current Status
- FTHWG/IPHWG Coordination Issues
- Meeting Schedule

TAEIG Request of FTHWG

- The IPHWG through the TAEIG has requested coordination on this tasking relative to the flight test aspects of the proposed rulemaking. The specific aspects requiring coordination are the use of the proposed rules for § 25.21(g) relative to the unrestricted flight in SLD conditions. The present concept for unrestricted flight does not require identification or differentiation of the SLD environment from the current Appendix C icing environment. As such, it would appear appropriate to use the same set of airplane performance and handling characteristic standards as proposed under § 25.21(g) relative to Appendix C.
- The second part of the proposed IPHWG rulemaking would allow the optional certification in SLD conditions to be limited to the period required to identify and exit the conditions. The proposed performance and handling characteristic standard for this exit is the “safe return and landing” criterion commonly used in association with system failure conditions. This reduced handling criterion provides a standardized, widely accepted level of safety, yet provides greater certification flexibility for small-scale 14 CFR 25 aircraft.
- The specific action requested of the FTHWG is the consideration of the above-proposed performance and handling standards and to provide concurrence and/or comments.

Current Status

The FTHWG met Sept. 21-23 in support of IPHWG Task 2. Key discussions and results included:

- SLD ice shapes based on Lewice-3 and developed by Dr. Jim Riley (FAA Tech Center) were presented by Gene Hill.
- The IPHWG draft working group report was reviewed.
- A significant amount of time was spent on developing updates to draft AC 25.21(g) to accommodate Appendix X.
- Handling qualities criteria for the “detect and exit” scenario were developed, and there was renewed consideration of adding performance criteria, due to the potential for retaining the detect and exit ice shape for the duration of the flight to the destination.
- Based on the “Detect and Exit” discussion the group concluded that airworthiness approval for flight in icing must include that appropriate for Appendix C, plus at a minimum that appropriate for detection and exit from Appendix X conditions. This impacts the wording of draft 25.21(g) and the associated AC material.

Current Status

Key discussions and results, continued:

- In response to a request from the IPHWG a proposal was drafted for addressing NTSB recommendation A-96-58, which calls for certification testing to determine the susceptibility of airplanes to aileron hinge moment reversals in the clean and iced-wing configurations.
- A proposal was developed for definitions of the critical ice shapes to be used for showing compliance with the proposed performance and handling qualities requirements for flight in Appendix X conditions. This affects Appendix X.
- A list of potential issues for coordination during the FTHWG-IPHWG joint session in December was developed.

FTHWG/IPHWG Coord. Issues

Anticipated topics of joint FTHWG/IPHWG session:

- Presentation of FTHWG rule and AC material.
- Proposed Appendix X modifications (ice shape definitions by flight phase).
- Discussion of considering Appendix X “Detect & Exit” certification as basic rather than an add-on.
- FTHWG Industry/Authorities positions on 45 minute hold / 3 inch ice shape cutoff issue.
- Residual issues (example: no response from FAA/NASA regarding takeoff flight phase Appendix X ice shapes).
- Schedule review

FTHWG Meeting Schedule

- FTHWG-27: Nov. 30 – Dec. 3, 2004 in Ft. Lauderdale.
- Combined IPHWG-FTHWG meeting on December 2nd.
- No meetings scheduled for 2005, although a significant coordination effort will be required, possibly benefiting from an additional meeting.

AAWG Report to TAEIG

October 14, 2004

Airworthiness Assurance Working Group

Airworthiness Assurance Working Group

- Membership
- Meetings
- Current Task
- Task Work Plan
- Status

AAWG Membership

Last Name	First Name	Representing	Voting	E-mail Address
Arabi	Mary	Airborne Express	Yes	mary.arabi@airborne.com
Bristow	John	JAA (CAA-UK)	Yes	john.bristow@srg.caa.co.uk
Burd	James	Lockheed Martin	Yes	james.s.burd@lmco.com
Carter	Aubrey(Co-Chair)	Delta Air Lines	Yes	aubrey.carter@delta-air.com
Coile	Mark	UPS	Yes	amx1mac@ups.com
Collier	Don	ATA	Yes	dcollier@air-transport.org
Demarest,	Harry	American Airlines	Yes	harry.demarest@aa.com
Fenwick	Linsay	ALPA	Yes	fenwickl@alpa.org
Gaillardon	Jean-Michel	Airbus	Yes	jean_michel.gaillardon@airbus.fr
Heath	David	Evergreen	Yes	david.heath@evergreenaviation.com
Knegt	Martin	Fokker Services	Yes	martin.knegt@fokkerservices.storkgroup.com
Lewis	Austin	Airbus (BAe)	Yes	austin.lewis@bae.co.uk
Lotterer	Dave	RAA	Yes	david.lotterer@dc.sba.com
Martin	Gary	America West	Yes	gary.martin@americawest.com
Moses	Joseph	Continental Airlines	Yes	jmoses@coair.com
Oberdick	Jon	USAirways	Yes	jober@usairways.com
Pattison	Gregg	Northwest Airlines	Yes	gregg.pattison@nwa.com
Petrakis	John	FAA	No	john.petrakis@faa.gov
Schneider	Greg	FAA	Yes	greg.schneider@faa.gov
Sesny	Paul	United Airlines	Yes	paul.sesny@ual.com
Sobeck	Fred	FAA	No	frederick.sobeck@faa.gov
Tedford	Gareth	British Airways	Yes	gareth.1.tedford@britiah-airways.com
Varanasi	Rao (Co-Chair)	Boeing	Yes	rao.varanasi@ boeing.com
Walder	Ray	IATA	Yes	walderr@iata.org
Yerger	Mark	FedEx	Yes	mdyerger@fedex.com

Red ĞRetired

Meetings

- The most recent meeting of the AAWG was June 30, 2004
- Member Representatives from the following organizations were in attendance.

Airborne Express	FAA
Airbus	FedEx
American	Northwest
Boeing	United
British Airways	US Airways
Continental	UPS
Delta	

Meetings Con't

- In addition, The following Attended as Invited Guests
  - Japan Air Lines
  - Skywest Airlines
  - TIMCO
  - SIE
  - ATA Airlines
- Next Meeting is planned for February 1, 2005, hosted by Airbus in Miami FL.

Current Tasks

- AASIFR Task
  - Tasked - May 13, 2004
  - Status - In work and on schedule
  - Two Phases
    - Scheduled Completion For Phase 1 is December 2005
    - Scheduled Completion for Phase 2 is December 2008

AASIFR

ARAC Tasking

- On May 13, 2004, the FAA officially notified ARAC that it had tasked the AAWG to provide both Advisory Material and Model Specific Information
- Task was similar to the one suggested by the AAWG Ad-hoc Task Group.
  - Two Phases
    - Phase 1 - Develops an Advisory Circular for compliance to §121.370a/129.16 - due December 2005.
    - Phase 2 - Develops any necessary Model Specific information needed for §121.370a/129.16 Compliance.
  - Phase 2 Tasking must be complete by Dec 2009.

AASIFR
AAWG Action

- During the AAWG Meeting on June 30th, 2004, The AAWG:
  - Accepted the Ad-hoc group recommendations
  - Disbanded the Ad-hoc Group
  - Chartered the official task activity
    - Phase I, Tasks 1 through 3
    - Phase II, Task 4
      - Establish existence of Model Specific STG activities
      - Determine the need for those model where STGs do not exist
  - Formed a non-advocate group to execute the tasking.

AASIFR

Task Group Make-up

Representative	Organization	Representative	Organization
Mary Arabi*	**ABx**	Gregg Schneider	**FAA**
Alain Santegema	**Airbus**	Bob Eastin	**FAA NRS**
Andreas Behrmann	**Airbus**	David Horne	**FedEx**
Anthony Timko	**American Airlines**	Richard Minter	**JAA (EASA)**
James Burd*	**LMCO**	Hisashi Fukuda	**JAL**
Amos Hoggard	**BCA**	James Burd	**LMCO**
Miles Nomura	**BCA**	Gregg Pattison	**NWA**
Gareth Tedford	**British Airways**	Paul Sesny*	**United**
Jack Abi-Habib*	**Continental**	Mark Coile	**UPS**
Aubrey Carter	**Delta Air Lines**	Gregg Delker*	**US Airways**
Mark Peterman	**TIMCO**	Matt Creager*	**SIE**
Engin Guclu	**ATA**	Gary Goodman*	**Skywest**

* Corresponding Member

ARAC Tasking

Task 1 - Phase 1

- *Task 1.—Repairs to Baseline Primary Structure and Repairs to Alterations and Modifications*
  - Draft an Advisory Circular (AC) that contains guidance to support two different paths of compliance with §§ 121.370a and 129.16 of the Aging Airplane Safety Interim Final Rule

ARAC Tasking

Task 2 - Phase 1

- *Task 2.—Alterations and Modifications to Baseline Primary Structure, Including STCs and Amended Type Certificates (ATCs)*
  - Prepare a written report assessing how an operator would include damage-tolerance-based inspections and procedures for alterations and modifications made to aircraft structure that is susceptible to fatigue cracking that could contribute to a catastrophic failure.

ARAC Tasking

Task 3 - Phase 1

- *Task 3.—Widespread Fatigue Damage (WFD) of Repairs, Alterations, and Modifications*
  - Provide a written report providing recommendations on how best to enable part 121 and 129 certificate holders of airplanes with a maximum gross take-off weight of greater than 75,000 pounds to assess the WFD characteristics of structural repairs, alterations, and modifications as recommended in a previous ARAC tasking. (Note: effectivity different than 121.370a)

ARAC Tasking

Task 4 - Phase 2

- *Task 4.—Model Specific Programs*
  - Oversee the Structural Task Group (STG) activities that will be coordinated for each applicable airplane model by the respective type certificate holders' and part 121 and 129 certificate holders.

ARAC Tasking

Some Finer Points

- What the tasking does not do:
  - The tasking does not extend the compliance date by three years.
  - Does not affect any activities mandated under §121.368
- Three year extension of compliance date expected to occur when the final rule is published in December 2004.

Work Plan and Schedule

Phase 1

- Phase 1 of the tasking, for Tasks 1 through 3 due 16 Dec 2005
  - ⇨ TPG-1 (ad-hoc) Began to prepare a tasking statement - Sept 2003
  - ⇨ TPG-2 (ad-hoc) – Nov 2003
  - ⇨ TPG-3 (ad-hoc) Completed work on tasking statement - March 2004
  - ⇨ TPG-3 (ad-hoc) TPG: Began Task 1 in March 2004
  - ⇨ Official tasking published on the FR Doc. 04-10816. 13th May 04
  - ⇨ TPG-4 (ad-hoc) Reviewed the published tasking and Task 1 action from TPG-3
  - ⇨ AAWG meeting to formally accept the tasking, constitute the task team and commit schedule - 30 June 2004

Work Plan and Schedule

Phase 1

- ⇨ AAWG: Work plan and schedule to TAEIG at next meeting – Oct 2004 and TAEIG updates (Feb, Jun, Oct-05)
- ⇨ AAWG-AA-TG: Begin Tasks 2 & 3 – September 2004
- ⇨ Note: AASR Final rule publication - Dec 2004
- ⇨ TG: Complete work on the AC (Task 1) - Jan 2005
- ⇨ TG: Completion of Phase 1 activities (Tasks 2 & 3) – May 2005
- ⇨ TG: Submittal of results (Report & AC) to AAWG for their review – July 2005
- ⇨ AAWG: Presentation by TG and approval of results - Aug 2005
- ⇨ AAWG: Submittal of results to TAEIG for their review - Sept 2005
- ⇨ TAEIG presentation by AAWG and approval of results – Oct 2005
- ⇨ TAEIG: Submit approved results to FAA – Dec 2005

Proposed Work Plan and Schedule

Phase 2

- Phase 2 of the tasking to have documents available starting December 2008
  - ⇨ No formal reports required – just AAWG oversight of the STG process and report back obligations to the TAEIG
  - ⇨ Phase 2 will result in 2 model specific programs (where necessary);
    - The 1st due Dec 2008 will address repairs on the fuselage pressure shell (should it not already exist)
    - The 2nd due Dec 2009 will address repairs to other structure that is susceptible to fatigue cracking that could result in catastrophic failure.
- AAWG Work on this Phase will begin February 2005

AAWG Status

- Task 1
  - AAWG-AA-TG has a fairly well developed AC that is currently being reviewed by the members.
  - It is expected that we will complete the AC by the January meeting.
- Task 2 and 3 - will begin in November, however a large part of Task 2 is already embodied in the AC.

AASIFR

Task Group Meeting Schedule

September 15-17, 2003	–	Seattle Washington (Boeing)
November 11-14, 2003	–	London England (British Airways)
March 29-April 2, 2004	–	Toulouse France (Airbus)
May 17-21, 2004	–	Memphis Tennessee (FedEx)
July 12-16, 2004	–	Gatwick England (CAA-UK)
September 20-21, 2004	–	Long Beach (Boeing)
November 15-19, 2004	–	Brussels Belgium (FAA)
January 31 - Feb 4, 2005	–	Airbus – Miami FL
March 14-18, 2005	– Airbus –	Hamburg GE
May 2-6, 2005	– Ottawa CN –	Transport Canada (?)
June 13-19, 2005 -	Airbus –	Collioure FR (Alain's Hometown)
September 26-30, 2005	–	Boeing – Seattle WA
November 7-11, 2005 -		Airbus – Gatwick UK

Questions?

Avionics Harmonization Working group
Status, October 2004

- Latest meeting October 5 - 8, 2004
  - Continued work on updated AC/AMJ 25-11
  - Sub-group activity to improve efficiency
  - Brief plenary session to coordinate and comment
  - Using a website to share information
  - Good progress made at this meeting!

Avionics Harmonization Working group
AC 25-11 Outline

- Current outline
  - 1 - Purpose
  - 2 - Scope
  - 3 - Background
  - 4 - Glossary
  - 5 - Definitions
  - 6 - Related Regulations
  - 7 - Display Characteristics
  - 8 - Safety Aspects
  - 9 - Display Functions
  - 10 - Information Management
  - 11 - Interactivity
  - 12 - Certification Considerations
  - 13- Continued Airworthiness

Avionics Harmonization Working group
AC 25-11 Appendices

- Appendix A : Guidelines for FC severity determination
- Appendix B : Specific Display Functionality (PFD)
- Appendix C : Specific Display Functionality (MFD)
- Appendix D : Head Up Displays
- Appendix E : EVS
- Appendix F : SVS
- Appendix G : Situational Awareness Displays
- Appendix H : Integrated Standby Displays

Avionics Harmonization Working group
AC 25-11 Issues

- Issues
  - Complexity of the subject
  - Size of current draft is very large
    - Currently working to reduce (provide what is necessary)
    - Technology-specific and function-specific appendices make it even larger
  - Time to complete the activity
    - AVHWG work vs. our regular jobs
  - Future participation of EASA / JAA?
    - Change in membership would be harmful to our activity

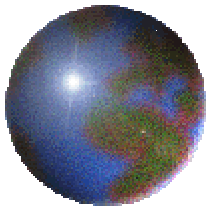
Avionics Harmonization Working group
AC 25-11 road-map

- Dallas meeting status
  - Section 1, 2, 3, 6, 7, 8, 12, 14 and appendix “Safety guidelines” are available and mature for group review
  - Additional work needed on sections 9, 10 and up to some extend for sections 4, 5 and 11
  - Additional work needed on appendices (PFD, MFD, HUD, EVS, SVS, Situation awareness, Integrated stand-by)
  - Friday : continue work on sections

- Next meeting
  - Savannah, January 25th to 28th
  - Work in sub-groups for section 9 and 10
  - Specific breakout session on EVS
  - Other participants : progress on sections 4 and 5, overall editorial review, progress on appendix if time available
  - At the end of Savannah meeting : edit a full AMJ/AC 25-11 version ready for group review (with appendix A)

Avionics Harmonization Working group
AC 25-11 Roadmap (cont')

- April 2005 meeting
  - Proposal : April 5th to 8th , Bordeaux, Thales facilities (Jean Noel)
  - Day 1 : read the current version and prepare written comments
  - Day 2 to 4 : Dispose comments in plenary
  - Edit version for external release
  - Each group member to circulate the version inside its organization to receive comments
- June 2005 meeting
  - Proposal : June 21st to 24th (week after Paris Air Show), Paris/Bretigny, CEV facilities (Stéphane TBC)
  - Review comments raised outside the group if any
  - Work in sub-groups for preparation of missing appendices
- Next meetings
  - October 2005 - target for major updates to appendices
  - January 2006 - target for release



Specific Risk Activities

TAEIG Briefing

Oct 2004

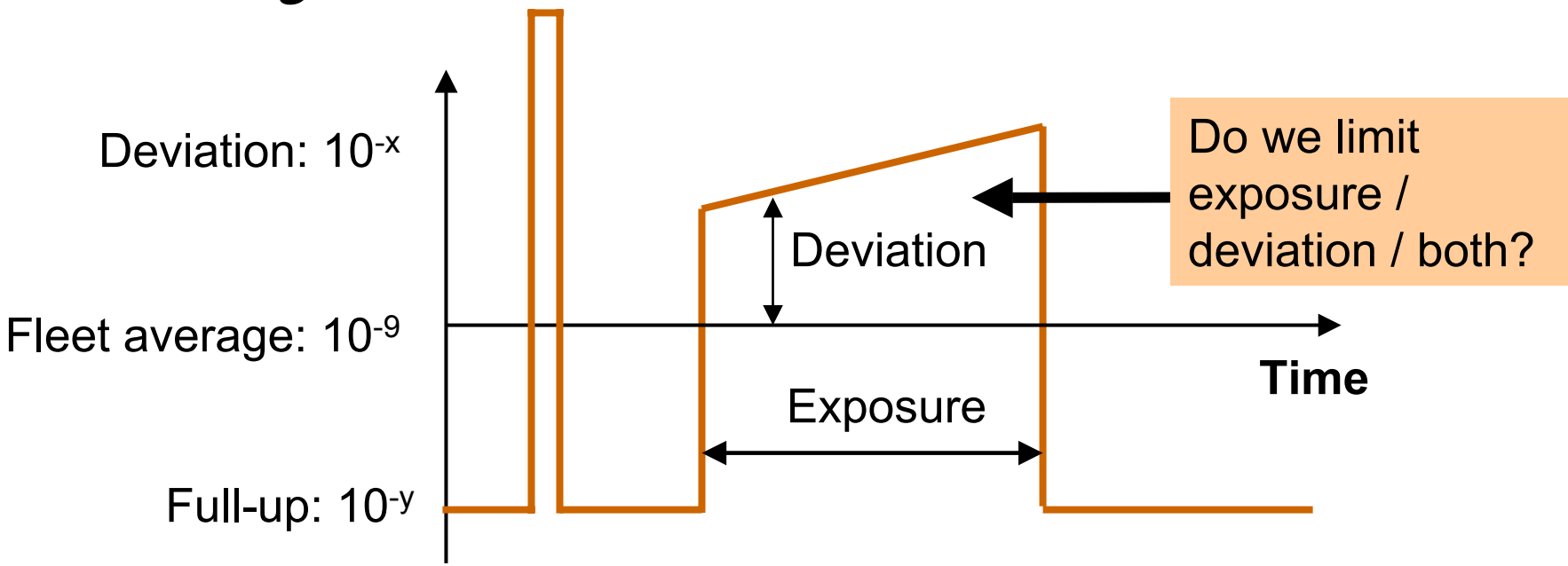
Recap from June 04 meeting

- FAA/EASA developed a definition of “specific risk”
- Authorities found that OEMs are addressing specific risks in their design* and MMEL** but their methods are not standardized.
  - Authorities target is to find a standardized methods
  - Avoid un-ending “what-ifs”
- Overarching safety objective for all systems: No catastrophic single failure during any one flight.***
- First priorities: MMEL and latent failures
- Authorities are studying the practicality and impacts of any potential common methods

Recap: FAA/EASA consensus

Specific Risk definition

The risk on an aircraft on a specific flight due to a condition that deviates from the fleet's average risk.



Example Illustration : a Catastrophic Failure Condition

Recent activities

- Boeing/SDAHWG chair/FAA telecon* on Phase 1's recommendation to have an independent body, such as CAST, to review service history
  - Concluded that CAST review was not the best way to proceed at this time.
- SDAHWG reviewed Authorities definition of specific risk and provided feedback (side-by-side comparison next slide)
- FAA is coordinating SDAHWG's feedback with other Authorities

Feedback from SDAHWG

- Authorities:
  - The risk on an aircraft on a specific flight due to a condition that deviates from the fleet's average risk.

- SDAHWG:
  - The risk on an aircraft per flight hour due to a condition that results in a deviation from the fleet's average risk. Conditions specifically of concern are significant latent failures and MMEL items.

Proposed next steps (1)

- FAA seeks a clearer and more integrated set of recommendations from ARAC, because
  - SDA, Flight Controls, and Powerplant HWGs each independently provided to the FAA varying philosophies on how specific risks should be managed (e.g., recommendations range from prohibiting single+latent, to allowing single+latent and specifying a minimum level of integrity, to no specific risk evaluation at all.)
  - Specific risk issues transcend any one system type, and need to be coordinated cross-functionally (e.g., latent and MMEL issues are common issues.)

Proposed next steps (2)

- There is no need for (nor is there a practical way to form) an “independent” body. This issue can be resolved more expediently within the TAEIG framework.

Proposed next steps (3)

- Options:
  - Bring issue back to SDA only
  - Bring issue to either Flight Controls or Power Plant HWG
  - Seek advice from all three HWGs - preferred

Proposed next step (3)

- It is prudent to form a <u>cross functional</u> working group to:
  - Ensure broad and correct understanding of current and proposed regulations that address specific risks
  - Evaluate current industry practices, existing and proposed regulations, and determine what changes are needed to industry's practices and/or regulations,
  - If necessary, develop the service history review criteria, and review the pertinent service history
  - Provide integral recommendations to authorities and industry groups (such as SAE, etc.) so that best policies and practices are documented.

Proposed next steps (4)

- The 3 “disciplines” should <u>together</u> define common criteria for
  - Extracting lessons learned from service history at the airplane level, rather than at the system-by-system level
  - Developing a consistent <u>cross-functional philosophy</u> for identifying and managing the risk of operating “one failure away from catastrophe during any one flight” (recognizing that technological limitations and cost-benefit realities in each type of systems may necessitate different <u>applications</u> of the same philosophy.)
    - Note: recent CPS activities also accentuated the need to better manage the “one-failure-away” situations, although the focus was on operational aspects rather than design.

Master Minimum Equipment List (MMEL) Procedures Manual

Revision No: Original
10 June 2004

Companion Document to Canadian Document TP 9155 at Revision 5
And
Joint Aviation Authorities (JAA) Policy and Procedures Manual at Version 1

June 10, 2004

Flight Operations Policy Board (FOPB)
Washington, D.C.

Foreword

This Manual has been prepared in accordance with the FARs for use and guidance relevant to the design and approval of Master Minimum Equipment Lists (MMELs) by Flight Operations Policy Boards (FOEBs), who are assisted by Manufacturers, Operators, and other interested parties. It contains all relevant information with respect to the philosophy, development and approval of the Master Minimum Equipment List (MMEL) and information relevant to Minimum Equipment Lists (MELs).

This manual has been prepared for guidance and use by FAA Flight Standards Operations Inspectors assigned to Aircraft Evaluation Groups and all other parties involved in the use and management of MMELs. Inspectors and other interested parties are expected to use good judgment in matters where specific guidance may not have been given, and all parties should be aware of the need for revision of the present information as new requirements evolve.

This manual is available on the FAA MMEL Policy Board (FOPB) website, (www.opspecs.com). The website provides electronic access to the MMEL/MEL Procedures manual, other MMEL Guidance material, MMELs, MMEL Policy Letters and other related information at any time by interested parties. Unless otherwise stated, any references in this manual to a website are intended to mean the FAA MMEL website.

For harmonization purposes this Manual is modelled after Transport Canada's Manual, Master Minimum Equipment List/Minimum Equipment List Policy and Procedures Manual, TP 9155. To preserve a comparable format to that of Transport Canada's Manual, the paragraph formatting and numbering system have been retained to the extent that is practical. The manual is also consistent with a JAA Policy and Procedures Manual at Revision 7, dated 8 July 2003, that has been developed as a result of harmonization efforts between the involved authorities.

Record of Amendments

Amendment No.	Date	Pages Affected	Date Entered	Initials
Draft 1	18 November 2002	All		
Draft 2	18 November 2003	All		
Original	10 June 2004	All		

Abbreviations

AC	Advisory Circular
ACO	Aircraft Certification Office
AEG	Aircraft Evaluation Group
AFM	Aircraft Flight Manual
ATA	Air Transport Association
CDL	Configuration Deviation List
CJAA	Central JAA (HQ)
DDG	Dispatch Deviation Guide
DDPG	Dispatch Deviation Procedures Guide
ETOPS	Extended Range Operations of a two-engined airplane
EROPS	Extended range Operations
FAR	Federal Aviation Regulation
FOEB	Flight Operations Evaluation Board
GC	Global Change
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions
ISC	Industry Steering Committee
JAR	Joint Aviation Requirements
JOEB	Joint Operations Evaluation Board
MCM	Maintenance Control Manual
MEL	Minimum Equipment List
MMEL	Master Minimum Equipment List
MPD	Maintenance Planning Document
MPM	MEL Procedures Manual
MRB	Maintenance Review Board
NAA	National Aviation Authority
PAI	Principle Avionics Inspector
PMI	Principle Maintenance Inspector
POI	Principle Operations Inspector
PMMEL	Preliminary Master Minimum Equipment List
RIE	Rectification Interval Extension
RNP/RNAV	Required Navigation Performance/Area Navigation
RVSM	Reduced Vertical Separation Minima
SG	Sub-group
STC	Supplemental Type Certificate
SSA	System Safety Assessment
STD	Synthetic Training Device
TCCA	Transport Canada
TC	Type Certificate
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions

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Chapter 1

Introduction

1.1 Definitions

The definitions of specific words and phrases used in this manual are found in 14 CFR Part 1 and Appendix A.

1.2 The Master Minimum Equipment List

A Master Minimum Equipment List (MMEL) is a document that is approved by the FAA Flight Standard Service (AFS), and which is created, specifically, to assist in regulating the dispatch of an aircraft type with inoperative equipment. The (MMEL) lists the equipment that may temporarily be inoperative, subject to certain conditions, while maintaining an acceptable level of safety as intended in the Operating Rules. Each MMEL is specific to an aircraft type.

The MMEL is the foundation document from which Minimum Equipment Lists (MELs) are designed and approved. As provided for in the Operating Rules, operating under an approved MEL, as authorized by the Operations Specifications, constitutes an approved change to the Type Design without requiring recertification.

In the FAA system, the MMEL for both foreign and U.S. manufactured aircraft will consist of a single document for each airplane type, the design of which is managed and approved by the Flight Operations Evaluation Board (FOEB). The document will conform to FAA requirements, interpretations and policies as required by the Flight Operations Policy Board (FOPB).

1.3 Dispatch with Inoperative Equipment

The MMEL and associated Minimum Equipment List (MEL) are alleviating documents. Their purpose is not, however, to encourage the operation of aircraft with inoperative equipment. Dispatching with inoperative equipment is considered to be an alternate mode of operations, and such operations are permitted only as a result of careful analysis of each item to ensure that the acceptable level of safety as intended in the applicable FAR is maintained. A fundamental consideration is that the continued operation of an aircraft in this condition should be minimized. The limitations governing repair intervals are discussed later in this document.

1.4 Legal Basis

Federal Aviation Regulations (FARs) 91.213, 121.628, 125.201, 129.14, and 135.179 provide for operation of an aircraft with certain instruments/equipment inoperative, through the use of an approved MEL. FAA orders and guidance material provides the necessary guidance under which an MMEL and an MEL may be established for a given aircraft type.

Where an MMEL has been established for a particular type of aircraft, an MEL shall not be approved for that type of aircraft unless it complies with the minimum requirements specified in the approved MMEL.

1.5 Equipment Included in the MMEL / MEL

Most aircraft are designed and certified with a significant amount of equipment redundancy, such that the airworthiness requirements are satisfied by a substantial margin. In addition, aircraft are generally fitted with equipment that is not required for safe operation under all operating conditions, e.g. instrument lighting in day VMC. Other equipment, such as entertainment systems or galley equipment, may be installed for passenger convenience. In the FAA system, if these passenger convenience items do not affect airworthiness when inoperative, they need not be assigned a repair interval. However, if a passenger convenience item has another function related to safety (such as use of the entertainment system for passenger briefings) then this item must be included in the MMEL/MEL with an appropriate repair interval. It is also possible that an (M) or an (O) procedure could drive a requirement to assign a category to an item or otherwise track the effects of the procedure.

It is important to note that all items related to the airworthiness of the aircraft and not included in the MMEL are required to be operative prior to flight.

Chapter 2

Master Minimum Equipment List

2.1 MMEL Responsibilities

The FAA Flight Operations Evaluation Board (FOEB) Chairman for an aircraft type is responsible for ensuring that the MMEL is produced in accordance with FAA policy and requirements. FOEB Members are designated to assist the Chairman. The composition of the FOEB, the Board's position in the organization and its role is addressed in Appendix B.

2.2 MMEL Procedures Manual

a) To assist in the development of a harmonized assessment process, the FAA, FOPB has endorsed the development of this MMEL Procedures Manual. This document is based on long standing policies and procedures developed by the FOPB. The formatting and organization of all relevant information follows the Policy and Procedures Manual developed by Transport Canada, TP 9155. It has been compiled to provide a centralized source of guidance information to facilitate the review and standardization of FAA MMELs and MELs. This guidance material is made available through the MMEL/MEL website, to provide guidance to operators and manufacturers.

b) While some MMEL items are generic in nature and identical wording may be used for all aircraft types, other items will differ from aircraft to aircraft. The material provided by the MMEL Procedures Manual Appendices are to be used for guidance only. Users are encouraged to provide feedback for the correction and amplification of the guidance material and propose additional material which may be included.

c) An example of an MMEL sample page is included in Appendix C.

2.2.1 MMEL Policy Letters

a) The Office of the Manager, Air Transportation Division, AFS-200, has historically chaired the FOPB. This office assists FOEB Chairpersons by issuing Policy Letters which serve to provide guidance, standardize certain relief statements, and offer relief directly in some cases, when designated as " a Global Change".

Global changes provide two benefits to MMEL users:

1) Relief included in a Global Change may be implemented immediately upon receipt by users, when the information (relief) is incorporated into their MEL and approved, and

2) Operators using older airplanes whose MMELs are not regularly and routinely revised, may use the Global Change to update Policy items in their MMEL/MEL directly, as described above, and thereby modernize their documents with respect to Policy Changes.

2.3 MMEL Philosophy

This section provides insight into the criteria that governs the determination of an acceptable MMEL item and the methods of justification to be used in the development of an MMEL.

2.3.1 Level of Safety

The MMEL may permit the operation of an aircraft for limited periods of time, with items of equipment inoperative, if an acceptable level of safety as intended by the applicable Operating Rule, can be maintained. To establish MMEL relief for any given operating condition, the FOEB must consider various factors relating to safe operation when such equipment is inoperative. These include the consequence to the aircraft and its occupants of the next critical failure, change in crew workload and/or degradation in crew efficiency and degradation in crew capability to cope with adverse environmental conditions.

2.3.2 Maintaining the Level of Safety

a) The FOEB will base its decision on whether a particular proposal for MMEL relief is to be approved on the criterion that an acceptable level of safety imposed by the design and operation of the aircraft can be maintained. This finding will be based on the substantiated ability to maintain an acceptable level of safety with a particular item of equipment inoperative.

b) This substantiation will be achieved by one or more of the following means:

1. Adjustment of operational limitations;
2. Transfer of the function to an operating component;
3. Reference to other instruments or components performing the required function or providing the required information;
4. Change in operating procedures;
5. Change in maintenance procedures;
6. No change or minimal change in crew workload;
7. Minimum impact on crew training or aircraft procedural changes;
8. Demonstration/validation Flights (Simulator and/or Aircraft).

2.3.3 Example of Justification of an MMEL Item

a) To illustrate this process, consider an MMEL proposal requesting that an aircraft be permitted to dispatch with the differential pressure indicator on the cockpit pressurization control panel inoperative.

b) FAR 25.841(b)(5*)* requires that the pressurized cabin must have instruments at the pilot or flight engineer station to show the pressure differential between the cabin air pressure and atmospheric pressure.

c) In order to meet the criteria, the MMEL proposal would have to stipulate that the following conditions be met:

1. The cabin altimeter must be operative; and

2. A chart showing the relationship between the aircraft altitude and cabin altitude for the normal operating pressure differential (e.g., 8 PSI) must be available to the crew in flight.

d) Consequently, the flight could be performed, pressurised, and the flight crew with reference to the aircraft's altimeter, the cabin altimeter and the specified chart, would be able to determine that the appropriate cabin pressure differential was being maintained during flight.

e) Providing that dispatching with the cabin pressure differential indicator inoperative did not significantly impact crew workload and/or efficiency and was acceptable in terms of further failures, this MMEL item would be acceptable.

f) This acceptability is based on the evaluation of the foregoing factors showing that the level of safety dictated by the minimum requirements specified for the design and operation of the aircraft type would be maintained.

g) The continued reliability of an aircraft system and the probability of total system failure, following the dispatch of an aircraft with inoperative equipment, must be considered for some MMEL items.

2.3.4 Methods of Justification of MMEL Items

The assessment of an acceptable level of safety for a MMEL item often involves more than one of the following methods of justification:

a) The equipment may be considered optional;
b) The equipment may be considered redundant;
c) A qualitative analysis;
d) A quantitative safety analysis; and/or
e) Flight Test demonstration/validation; including bench tests.
f) FOEB experience and judgement, e.g., similar relief in other MMELs with similar system design.

2.3.5 Optional Equipment

When aircraft are operated with optional equipment which is over and above the required equipment, it may not be essential that such equipment be operative, if it is in excess of that required for safe operations for a particular flight condition or route of flight. Inclusion in the MMEL can be accepted on this basis. However, for reasons unique to certain operations, optional equipment for one operator may be required for another operator. (e.g., ACARS data link)

2.3.6 Redundant Items

If the purpose or function can be performed by some other items of equipment, then relief may be acceptable on a redundancy basis with the provision that the alternative equipment is operating normally. Redundancy may not be claimed as justification for inclusion of an item if the two (or more) sources of information or function are required by the aircraft type certification basis.

2.3.7 Qualitative Analysis

A qualitative analysis must consider the impact that the proposed inoperative item has on all other aspects of the aircraft's operation. The qualitative analysis must consider the impact on crew workload, the impact of multiple MMEL items, and the complexity of maintenance and/or operational procedures. It may reflect experience with previous MMEL approvals.

Note: A previous MMEL approval of the same item on another aircraft type does not in itself imply that an acceptable level of safety has been met. Factors, which must

be considered, include similarity of system operation and similarity of the aircraft operational role.

2.3.8 Quantitative Safety Analysis

a) The increasing dependency of modern aircraft on the continued operation of their complex systems has resulted in the development of structured techniques to achieve an acceptable level of safety. This level of safety is based upon the principle that the hazard resulting from an event should be inversely proportional to the probability of its occurrence. Compliance is usually demonstrated by conducting a system safety assessment.

b) The safety assessment establishes the major, hazardous or catastrophic situations or failure conditions which the system is capable of producing and the allowable probability of occurrence. For those systems whose failure is critical, i.e., results in hazardous or catastrophic situations, a numerical probability analysis is usually required to demonstrate compliance with the allowable probability of occurrence. For non-critical components/systems, the safety assessment may be greatly simplified. The risk of any specific failure condition is a function of failure rate, the number of such systems and the time of exposure to risk.

c) When items of equipment from systems performing critical functions are included in the MMEL, an account shall be taken of their inoperative status in the safety assessment. The additional risk resulting from occasional flights with such equipment inoperative should be established and should be compatible with the allowable probability of occurrence established during the certification process.

d) If the item cannot be justified by the previous means or criteria, then a safety analysis must be carried out involving a quantitative analysis of the likely risk of the worst effects that can result from additional failures, events and/or environmental conditions occurring during a flight with the particular inoperative item in question. It must be shown that, bearing in mind the reduced exposure time when operating under a MMEL, the probability of a particular hazard has not been increased beyond the levels dictated by the minimum requirements specified for the design and operation of the aircraft type.

d) Where quantitative analysis forms part of the justification, MEL repair interval extensions should be considered in this analysis.

2.3.9 Flight and Simulator/STD Tests

A flight test/evaluation or a simulator test/evaluation on an aircraft or simulator representative of the type design may be used to evaluate MMEL relief applications, if it may be shown that the simulator is capable of replicating system effects.

2.4 MMEL Policy

This section gives details of the FAA's policy governing the development of an MMEL. The policy material provided is applicable to aircraft that are certificated under FAA Procedures, and it is also applicable to foreign manufactured aircraft, where certification has been validated by an FAA Validation team, unless otherwise stated.

2.4.1 Development of an MMEL

If an aircraft manufacturer or modifier is desirous of having their aircraft operated with specified equipment inoperative, they must produce a Preliminary MMEL (PMMEL) or MMEL proposal. Where possible, the approval process for such an MMEL will take place concurrently with the type certification process, but the development of an approved MMEL is not a condition for aircraft type certification. MMEL/MEL approvals must, however, be completed prior to the introduction of the aircraft into revenue service.

2.4.2 MMEL Source

Currently, owing to the FAA's use of the FOEB process for the approval of all MMELs in use in Air Transportation in the United States, all MMELs for aircraft manufactured in the U.S. and those aircraft manufactured in other parts of the world are approved in the same manner. The process involved in the development and approval of an FAA MMEL is dependent on the aircraft manufacturer, as the primary source of information on any new aircraft and its systems.

2.4.3 MMEL Justification

The MMEL must be supported by appropriate engineering, operational justifications and special procedures, where applicable. A rationale showing the engineering and operational justification may include qualitative and/or quantitative safety analysis, a rationale showing system redundancy, AFM limitations, or any other technical justification supporting an acceptable level of safety.

2.4.4 Flight Operations Evaluation Board

The MMEL approval process for a specific aircraft type is a function of the FOEB. The composition of the FOEB and the functions and role of the chairperson is described in Appendix B.

2.4.5 Participation of Operators

a) Initial approval of an MMEL may be accomplished under the "Lead Airline" concept. Under this process, an operator who operates, or intends to operate, the particular aircraft type is identified. That operator works closely with the FOEB and the aircraft manufacturer to formulate the PMMEL. Other operators of the aircraft are encouraged to participate in the MMEL development and approval process. This may be accomplished through meetings convened by the lead airline representative, the manufacturer, or in some cases, the FOEB Chairperson. Final approval will be made after a formal FOEB Meeting, or the approval may be accomplished electronically, using the FAA internet web site at http://www.opspecs.com.

b) Requests for changes to an existing MMEL will be considered through application to the FOEB or in a manner similar to an initial approval, the revision process may employ the lead airline concept, where applicable. All requests must be accompanied with adequate technical justification and should include the manufacturer's support and documentation, as specified in paragraph 2.5.2. (a) 2.

c) Aircraft no longer supported by the Original Equipment Manufacturer (OEM), operators who operate airplanes or qualified operating entities, who are or become involved in modifying such airplanes, may apply to the FOEB or FOPB for assistance in developing an MMEL for approval by the FOEB for these airplanes. Any required justification necessary for the development of MMEL relief for these airplanes will be the applicant's responsibility.

2.4.6 Foreign MMELs

There are no unique requirements or differences in the process followed for formulating and revising MMELs for foreign manufactured airplanes versus domestically manufactured airplanes operated (or intended to be operated) by a U.S. operator.

2.4.7 MMEL Page Format

a) MMELs for FAA certificated aircraft and for aircraft certified on behalf of the FAA by a foreign authority, are currently published in the "five column format" where columns 1 to 5 contain respectively the name of the item, the repair interval (category), the number installed, the number required for dispatch and provisos (remarks or exceptions, i.e., limitations). Considering that information systems are changing, it is possible that in the future another format may be developed that will have more utility. In that case it is envisioned that the document should still contain the five descriptive elements currently in use.

b) A sample page is provided in Appendix C. Each MMEL will be preceded by an acceptable preamble. An example is given in Appendix D.

2.4.8 MMEL Format

a) Each MMEL should contain:

(i) Cover/approval page
(ii) Log of Revisions
(iii) Reason for Changes page
(iv) List of Effective Pages
(v) Table of Contents
(vi) Explanation of the symbols used in the MMEL
(vii) Definition of any terms having special meaning in the context of the MMEL
(viii) A Preamble.

Each item of equipment listed in the MMEL should preferably be described and identified in accordance with the Air Transport Association (ATA) specification 2200 (historically specification 100) code system. The number of each item of equipment installed and the number required to be operative for dispatch should be stated in the appropriate columns. The MMEL must be written in English.

b) Any conditions and limitations associated with inoperative equipment, required to maintain an acceptable level of safety, shall be included in the “Remarks or Exceptions” column.

2.4.9 Operational and Maintenance Procedures

Any inoperative item of equipment in the MMEL, which would require an operational or maintenance procedure to maintain the appropriate level of safety, shall be identified by a symbol in the "Remarks or Exceptions" column of the MMEL. This will normally be "(O)" for an operational procedure and "(M)" for a maintenance procedure. (O) (M) means both operational and maintenance procedures are required. When approval of the item is contingent upon the development of such procedures, the procedures must be completed prior to approval. The procedures themselves are not submitted for approval, however, they may be reviewed by the FOEB during the MMEL approval process. The limitations, procedures and remarks for individual MMEL items should consider all intended operations, such as (but not limited to) day, night operations, VMC, IMC, icing, rain, Category II/III, RNP/RNAV, RVSM, and ETOPS operations.

2.4.10 Prohibited Items

a) The MMEL shall not include any item of equipment which, if inoperative, is likely to significantly affect the take-off, landing or climb performance of the aircraft or associated speeds presented in the approved AFM unless other data acceptable to the FOEB specifies the effect and is referenced in the MMEL.

b) No item shall be included in the MMEL which conflicts with the limitations or invalidates the emergency procedures of the AFM or of an Airworthiness Directive unless the AFM or Airworthiness Directive provides suitable alternatives.

c) The MMEL should not address items or components of the aircraft that are included in the Configuration Deviation List (CDL), unless the alleviation sought differs from the performance considerations contained in the CDL.

2.4.11 Equipment Required by Operating Regulations

When an item of equipment is required to be installed and operative under particular circumstances by the Federal Aviation Regulations, such equipment may be defined in the remarks column of the MMEL by the words, "As required by FAR".

2.4.12 Repair Interval Categories

a) The MMEL shall provide Repair Intervals (Categories) A, B, C or D for each inoperative item. (The singular exception being Passenger Convenience Items in FAA documents, where a category is not required.) The category for each inoperative item will be determined according to the repair interval, categories, specified below.

b) The category of each item in the MMEL is to be inserted in column 2.

Category A

No standard interval is specified, however, items in this category shall be repaired in accordance with the conditions stated in the MMEL. Whenever the proviso in the "Remarks or Exceptions" column of the MMEL states a limitation in terms of cycles or flight time, etc., the interval begins with the next flight. Whenever the time interval is specified in calendar days or flight days, it shall start at 00:01 on the day following the day of discovery.

Category B

Items in this category shall be repaired within 3 consecutive calendar days excluding the day of discovery.

Category C

Items in this category shall be repaired within 10 consecutive calendar days, excluding the day of discovery.

Category D

Items in this category shall be repaired within 120 consecutive calendar days, excluding the day of discovery. To be considered for placement in Category D, the item must be of an optional nature, or excess equipment which an operator may, at their discretion, deactivate, remove from or install on an aircraft.

To be approved for category D, the item must meet the following criteria:

1. the absence of the item does not affect crew workload;
2. the crew do not rely on the function of that item on a routine or continuous basis; and,
3. the crew's training, subsequent habit patterns and procedures do not rely on the use of that item.

2.4.13 Repair Interval Extensions (RIEs)

Extensions of the time interval associated with categories B and C (in the FAA system) are normally part of the MEL management procedures and should be assessed during the MMEL justification process. In the FAA system, extensions may be granted in accordance with authorizations provided in an operator's Operations Specifications.

2.5 MMEL Procedures

2.5.1 General

This section details the procedures to be followed in the development, approval and publication of the MMEL.

2.5.2 FAA Certificated Airplanes: Domestic Manufacturers/Modifiers

a) Initial FAA MMEL Approval

1. The draft Preliminary MMEL (PMMEL) will normally be originated by the manufacturer/modifier and should be submitted to the FOEB as early as possible in the type certification process. This document reflects the manufacturers or operators concepts of which items may be inoperative in service. Inputs from an aircraft operator may be made, and if supported by the manufacturer, should be included in the submission to the FOEB.

2. The PMMEL must be accompanied by appropriate engineering and/or operational justification, ideally with an accompanying page addressing the item, the applicable regulation and/or relevant guidance material and the justification provided.

3. Approval of the operational and maintenance procedures themselves will not be a part of the MMEL approval process, but rather, the MEL approval process. Nevertheless, supporting documentation must be available in sufficient detail to permit an understanding of the operational and maintenance procedures such that the approval of the item is facilitated.

4. For large airplanes, these procedures are normally contained in the final analysis, in a manufacturer's document such as attachments to the MMEL, (e.g. sections 2 and 3 in Airbus and Dassault manuals) or through a Dispatch Deviation Procedure Guide (DDPG), or a Dispatch Deviation Guide (DDG). For some aircraft, where these documents may not be available from the manufacturer, MELs may be approved which contain maintenance and operational procedures that are approved or accepted from other sources or those that are approved or accepted by Principal Inspectors.

b) FOEB MMEL Review

A review of the draft PMMEL may be co-ordinated by the FOEB Chairperson. Following a review by the FOEB and by any specialists whose assistance is requested by the FOEB, decisions on individual MMEL items may be rendered. Any required changes, with rationale, will be returned to the applicant.

c) Approval and Publication

Currently, the following procedures apply to both domestic and foreign manufactured aircraft.

As has been previously indicated, the first requirement for producing an initial MMEL is the development of a preliminary MMEL (PMMEL) that reflects the manufacturer's or operator's concepts of which items may be inoperative. The FAA encourages aircraft manufacturers to develop a PMMEL during the aircraft certification process. The aircraft manufacturer coordinates with the Aircraft Evaluation Group (AEG) and operators throughout the PMMEL development process. Manufacturers and operators seeking consideration for relief for operating with certain items of equipment inoperative must provide supporting documentation that sufficiently substantiates their request. An operational evaluation of the potential outcome of operating with items that are inoperative should consider the subsequent failure of the next most critical component. Additionally, the interrelationships between items that are inoperative, the impact on Airplane Flight Manual (AFM) procedures, and the potential increase in crew workload must be considered. The MMEL must not conflict with AFM Limitations, configuration maintenance procedures (CMP), or Airworthiness Directives (ADs). The PMMEL should specify suitable limitations in the form of placards, maintenance procedures, crew operating procedures, and other restrictions as necessary to ensure that an acceptable level of safety is maintained.

To substantiate these considerations, the manufacturer may be asked to provide aircraft flight time or simulator time, if an acceptable level of simulation is available to appropriately evaluate applications for relief. AEG participation or observation in demonstration flights may be required, and that flight time should be scheduled in concert with the certification flight test program or the Flight Standardization Boards (FSB) operational evaluation, whenever possible. The PMMEL, which is submitted to the AEG FOEB for review, is developed by the manufacturer in a format acceptable to the Administrator.

To initiate the MMEL approval process, the AEG FOEB Chairman will normally schedule a formal FOEB meeting, a public meeting, to review and evaluate the PMMEL for technical accuracy and acceptability. Interested parties, such as the manufacturer, operators, foreign authorities and interested aviation community representatives, are invited to participate in these meetings. The FOEB discusses each PMMEL item with those in attendance at the meeting, and either accepts (approves), modifies, or disapproves each item. If a decision cannot be reached, an item may be held open for further consideration or until more information becomes available. At the discretion of the Chairman, the manufacturer or operator may submit or resubmit a request for relief with additional information for an item that has been held open pending further information. After the formal meeting the meeting notes are revised as necessary, collated, and prepared in final form for coordination and approval. Normally, the Chairman will post the Final Draft Document on the FAA BBS or web-site, to allow those at the meeting to review the final draft and comment if appropriate.

After a specified period of time, normally 10 days, the FOEB will review any comments, and if appropriate, make any necessary changes. After ensuring that any appropriate comments are considered, the FOEB will approve the document and forward it to the Office of the FOPB Chairman, who is also the Manager of the Air Transportation Division, AFS-200, for coordination and release of the document to the public.

2.5.3 Foreign manufactured aircraft

a) Historically and currently, MMELs for foreign manufactured airplanes are developed and approved in exactly the same manner as are MMELs for airplanes that are manufactured within the U.S. This includes changes to the aircraft Type Design that arise out of Amended Type Certificates and Supplemental Type Certificates (STCs).

Historically the FAA's MMEL development and approval system has been organized and is capable of operating independently of any outside MMEL approval organization/process. The system retains that capability. It is conceivable that if there were a situation where a foreign authority had not approved an MMEL for an airplane manufactured within that individual country, the FAA system would have the capability to design and approve an MMEL for that airplane. The reason for the development of that kind of capability is that the FAA system is designed to be responsive to the request(s) of operators, who desire to conduct operations with an MEL, which is provided for in the U.S. Operating Rules.

b) FAA Review

As we have indicated, the FAA system does not currently recognize MMELs developed by foreign entities, but in fact, develops an MMEL document for use under the FARs, that is independently derived (designed and approved) by the FAA. The FAA has, under various harmonization venues, utilized cooperative, harmonized processes to develop standard and uniform PMMELs for foreign manufactured airplanes very successfully. The benefits of these kinds of cooperative efforts are many.

2.5.4 Aircraft no longer supported by the Original Equipment Manufacturer (OEM)

We have indicated that the FAA maintains an MMEL design and approval system that has the capability to design and approve an MMEL for any airplane that has an approved type design. Therefore, virtually any airplane that meets appropriate requirements for operations under the Operating Rules may be eligible for an MMEL, provided that the applicant (an operator, modifier, or possibly, another manufacturer) can produce valid records and appropriate substantiation required for the formulation of a PMMEL.

2.5.5 Revisions to FAA MMELs

Once an MMEL is approved and is issued, requests for revisions may be initiated by an operator, the regulatory, an involved aircraft modifier, or by the aircraft manufacturer.

a) Approval of Revisions

All proposed revisions, together with engineering justification and sufficient details of applicable operational and maintenance procedures to permit understanding of each item, shall be submitted to the FOEB Chairperson for review and action.

b) Approval Process - All revisions

Once the FOEB Chairman's review is completed, and the results of the review confirm that a revision is warranted, the normal revision process will be initiated. That revision process is the same for all applications for revision.

c) MMEL Revision Status

Normally, interested parties may determine the current revision status of any MMEL being worked by an FOEB Chairman, by consulting the MMEL listing for draft MMELs on the FAA MMEL website at http://www.opspecs.com(.)

Appendix A:

FAA MMEL/MEL Definitions

[Editors Note: The following list of definitions taken from Policy Letter 25, represents the most current list of MMEL/MEL Definitions as of the date of publication of this Report. This exhibit therefore, portrays the utility of the Policy Letter Repository and the flexibility associated with the concept of Global Changes.]

SUBJECT: Policy Concerning MMEL Definitions

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SUBJECT: Policy Concerning MMEL: Definitions

---------- MMEL GLOBAL CHANGE----------

PL-25 is designated as GC-84
This GC is an approved addendum to all existing MMEL documents. The operator may seek use of the specific relief contained in the policy letter by revising the Minimum Equipment List (MEL). In doing so, the sample proviso stating the relief in the policy letter must be copied verbatim in the operator's MEL. Approval of the revised MEL is gained utilizing established procedure, through the assigned Principal Operations Inspector (POI).

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PL-25, Revision 10 October 11, 2000

SUBJECT: Policy Concerning MMEL Definitions

MMEL CODE: 00 (GENERAL)

REFERENCE: Policy Letter 25, Revision 9, dated August 15,1997
Policy Letter 25, Revision 8, dated January 31, 1995

The MMEL definition #7, dated August 15, 1997, has been revised and updated to Definition #8, dated October 11, 2000. This revision revises paragraph 23 to incorporate the design in aircraft fault indications for the De-Havilland Dash 8 Series 400 aircraft. This definitions section is to be used in all MMELs.

FEDERAL AVIATION ADMINISTRATION
MASTER MINIMUM EQUIPMENT LIST

Revision: 8
Date: 10/11/2000

Definitions

1. System Definitions.
System numbers are based on the Air Transport Association ATA) Specification Number 100 and items are numbered sequentially.

a. "Item" (Column 1) means the equipment, system, component, or function listed in the "Item" column.

b. "Number Installed" (Column 2) is the number (quantity) of items normally installed in the aircraft. This number represents the aircraft configuration considered in developing this MMEL. Should the number be a variable (e.g., passenger cabin items) a number is not required.

c. "Number Required for Dispatch" (Column 3) is the minimum number (quantity) of items required for operation provided the conditions specified in Column 4 are met.

NOTE: Where the MMEL shows a variable number required for dispatch, the MEL must reflect the actual number required for dispatch or an alternate means of configuration control approved by the Administrator.

d. "Remarks or Exceptions" (Column 4) in this column includes a statement either prohibiting or permitting operation with a specific number of items inoperative, provisos (conditions and limitations) for such operation, and appropriate notes.

e. A vertical bar (change bar) in the margin indicates a change, addition or deletion in the adjacent text for the current revision of that page only. The change bar is dropped at the next revision of that page.

2. "Airplane/Rotorcraft Flight Manual" (AFM/RFM) is the document required for type certification and approved by the responsible FAA Aircraft Certification Office. The FAA approved AFM/RFM for the specific aircraft is listed on the applicable Type Certificate Data Sheet.

3. "As required by FAR" means that the listed item is subject to certain provisions (restrictive or permissive) expressed in the Federal Aviation Regulations operating rules. The number of items required by the FAR must be operative. When the listed item is not required by FAR it may be inoperative for time specified by repair category.

4. Each inoperative item must be placarded to inform and remind the crewmembers and maintenance personnel of the equipment condition.

NOTE: To the extent practical, placards should be located adjacent to the control or indicator for the item affected; however, unless otherwise specified, placard wording and location will be determined by the operator.

5. "-" symbol in Column 2 and/or Column 3 indicates a variable number (quantity) of the item installed.

6. "Deleted" in the remarks column after a sequence item indicates that the item was previously listed but is now required to be operative if installed in the aircraft.

7. "ER" refers to extended range operations of a two-engine airplane (ETOPS) which has a type design approval for ER operations (ETOPS) and complies with the provisions of Advisory Circular 120-42A.

8. "Federal Aviation Regulations" (FAR) means the applicable portions of the Federal Aviation Act and Federal Aviation Regulations.

9. "Flight Day" means a 24 hour period (from midnight to midnight) either Universal Coordinated Time (UCT) or local time, as established by the operator, during which at least one flight is initiated for the affected aircraft.

10. "Icing Conditions" means an atmospheric environment that may cause ice to form on the aircraft or in the engine(s).

11. Alphabetical symbol in Column 4 indicates a proviso (condition or limitation) that must be complied with for operation with the listed item inoperative.

12. "Inoperative" means a system and/or component malfunction to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within its approved operating limit(s) or tolerance(s).

13. "Notes:" in Column 4 provides additional information for crewmember or maintenance consideration. Notes are used to identify applicable material which is intended to assist with compliance, but do not relieve the operator of the responsibility for compliance with all applicable requirements. Notes are not a part of the provisos.

14. Inoperative components of an inoperative system: Inoperative items which are components of a system which is inoperative are usually considered components directly associated with and having no other function than to support that system.

(Warning/caution systems associated with the inoperative system must be operative unless relief is specifically

authorized per the MMEL).

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15. "(M)" symbol indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. Normally these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorized to perform certain functions. Procedures requiring specialized knowledge or skill, or requiring the use of tools or test equipment should be accomplished by maintenance personnel.

The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's manual or MEL.

16. "(O)" symbol indicates a requirement for a specific operations procedure which must be accomplished in planning for and/or operating with the listed item inoperative. Normally these procedures are accomplished by the flight crew; however, other personnel may be qualified and authorized to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's manual or MEL.

NOTE: The (M) and (O) symbols are required in the operator's MEL unless otherwise authorized by the Administrator.

17. "Deactivated" and "Secured" means that the specified component must be put into an acceptable condition for safe flight. An acceptable method of securing or deactivating will be established by the operator.

18. "Visual Flight Rules" (VFR) is as defined in FAR Part 91. This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.

19. "Visual Meteorological Conditions" (VMC) means the atmospheric environment is such that would allow a flight to proceed under the visual flight rules applicable to the flight. This does not preclude operating under Instrument Flight Rules.

20. "Visible Moisture" means an atmospheric environment containing water in any form that can be seen in natural or artificial light; for example, clouds, fog, rain, sleet, hail, or snow.

21. "Passenger Convenience Items" means those items related to passenger convenience, comfort or entertainment such as, but not limited to, galley equipment, movie equipment, ash trays, stereo equipment, overhead reading lamps, etc.

22. Repair Intervals: All users of an MEL approved under FAR 121, 125, 129 and 135 must effect repairs of inoperative systems or components, deferred in accordance with the MEL, at or prior to the repair times established by the following letter designators:

Category A. Items in this category shall be repaired within the time interval specified in the remarks column of the operator's approved MEL.

Category B. Items in this category shall be repaired within three (3) consecutive calendar days (72 hours), excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it were recorded at 10 a.m. on January 26th, the three day interval would begin at midnight the 26th and end at midnight the 29th.

Category C. Items in this category shall be repaired within ten (10) consecutive calendar days (240 hours), excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it were recorded at 10 a.m. on January 26th, the 10 day interval would begin at midnight the 26th and end at midnight February 5th.

Category D. Items in this category shall be repaired within one hundred and twenty (120) consecutive calendar days (2880 hours), excluding the day the malfunction was recorded in the aircraft maintenance log and/or record.

The letter designators are inserted adjacent to Column 2.

23. Electronic fault alerting system – General

New generation aircraft display system fault indications to the flight crew by use of computerized display systems. Each aircraft manufacturer has incorporated individual design philosophies in determining the data that would be represented. The following are customized definitions (specific to each manufacturer) to help determine the level of messages affecting the aircraft's dispatch status. When preparing the MEL document, operators are to select the proper Definition No. 23 for their aircraft, if appropriate.

a. BOEING (B-757/767, B-747-400, B-777)

Boeing airplanes equipped with Engine Indicating and Crew Alerting Systems (EICAS), provide different priority levels of system messages (WARNING, CAUTION, ADVISORY, STATUS and MAINTENANCE). Any messages that affects airplane dispatch status will be displayed at a STATUS message level or higher. The absence of an EICAS STATUS or higher level (WARNING, CAUTION, ADVISORY) indicates that the system/component is operating within its approved operating limits or tolerances.

System conditions that result only in a maintenance level message, i.e. no correlation with a higher level EICAS message, do not affect dispatch and do not require action other than as addressed within an operators standard maintenance program.

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b. DOUGLAS (MD-11)

Some Douglas aircraft are equipped with an alerting function which is a subsystem within the Electronic Instrument System (EIS). The alerting function provides various levels of system condition alerts (WARNING, CAUTION, ADVISORY, MAINTENANCE and STATUS).

Alerts that affect aircraft dispatch will include WARNING, CAUTION, STATUS or MAINTENANCE level. MAINTENANCE alerts are displayed on the status page of the EIS display panel under the maintenance heading.

A MAINTENANCE alert on the EIS indicates the presence of a system fault which can be identified by the Central Fault Display System (CFDS) interrogation. The systems are designed to be fault tolerant, however, for any MAINTENANCE alert, the MEL must be verified for dispatch purposes.

c. AIRBUS (A-300-600, A-310, A-320/319/321, A-330, A-340)

Airbus aircraft equipped with Electronic Centralized Aircraft Monitoring (ECAM) provide different levels of system condition messages (WARNING, CAUTION, STATUS, and ADVISORY). A-320/319/ 321, A-330, and A-340 also provide MAINTENANCE status messages.

Any message that effects airplane dispatchability will normally be at the WARNING, CAUTION or STATUS level.

MAINTENANCE messages (A-320/319/321, A-330, and A-340 only) are also indicated on ECAM Status Page below the white Maintenance label.

A MAINTENANCE status (Class II) message on ECAM indicates the presence of a system fault which can be identified by CFDS (A-320/319/321) or CMS (A-330/A-340) interrogation. The systems are designed to be fault tolerant, however for any MAINTENANCE status (Class II) message, the A-320/319/321 MEL must be verified for dispatch capability. For the A-330 and A-340, MAINTENANCE status messages do not affect dispatch.

d. FOKKER (FK-100)

Fokker aircraft are equipped with Multi Function Display System (MFDS) which provides electronic message referring to the different priority levels of system information (WARNING (red), CAUTION (amber), AWARENESS (cyan) AND STATUS (white). Any messages that affects aircraft dispatch will be at the WARNING, CAUTION or AWARENESS level. In these cases the MEL must be verified for dispatch capability and maintenance may be required.

System conditions that only require maintenance are not presented on the flight deck. These maintenance indications/messages may be presented on the Maintenance & Test Panel (MAP) or the Centralized Fault Display Unit (CFDU) and by dedicated Built In Test Evaluation (BITE) of systems.

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e. CANADAIR (CL-65, CL-604)

Canadair aircraft equipped with Engine Indication and Crew Alerting Systems (EICAS) provide four classes of messages (WARNING, CAUTION, ADVISORY, and STATUS). Any message that affects aircraft dispatch will be at the WARNING, CAUTION, or STATUS level.

System conditions that only require maintenance are not visible to the flight crew. These maintenance indications/ messages are only activated by maintenance personnel using the Maintenance Diagnostics Computer.

f. EMBRAER (EMB-145)

The EMB-145 is equipped with an Engine Indicating and Crew Alerting System (EICAS) that provides three different message levels: WARNING, CAUTION, and ADVISORY. Failures that effect dispatchability are presented to the flight crew at one of these levels.

Other failures may be presented only to the maintenance personnel on the Multi-Function Display (MFD) or through the download of the Central Maintenance Computer (CMC) or the Full Authority Digital Engine Control (FADEC). System conditions that result only in a maintenance level message, i.e. no correlation with a higher level EICAS message, do not affect dispatch and do not require action other than as addressed within an operator's standard maintenance program.

g. GULFSTREAM (G-V)

Gulfstream G-V airplanes equipped with EICAS provide different priority levels pf system messages: WARNING (red), CAUTION (amber), ADVISORY, STATUS, and MAINTENANCE (cyan or blue). Any WARNING or CAUTION message affects airplane dispatch status and requires that the Airplane Flight Manual or the G-V MEL be used to determine dispatch capability. STATUS messages which indicate a system failure (e.g., FMS 1 fail) require that the Airplane Flight Manual or the G-V MEL be used to determine dispatch capability. MAINTENANCE messages do not affect airplane dispatch status. They indicate the presence of a system fault which can be identified by Maintenance Data Acquisition Unit (MDAU) interrogation or by reference to the Airplane Flight Manual.

h. De-HAVILLAND (DASH 8 SERIES 400)

Series 400 aircraft are equipped with a Caution/Warning Panel that annunciates all cautions and warnings. Advisory messages are displayed by the Electronic Indication System (EIS) or individual advisory lights supplied in the cockpit. "Class 1 failures" are failures that prevent continued operation of a specific Line Replacement Unit or channel and are annunciated via advisory messages: caution, warning or advisory lights in the flight compartment. Dispatch with such posted failures are to be in accordance with the MMEL.

"Class 2 failures" are failures which do not prevent continued system function. These faults will not be annunciated to the flight crew and the absence of the higher level alert (warning, caution, advisory) indicates that the system/component is operating within its approved operating limits or tolerances.

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Such faults would be evident during maintenance interrogation performed during maintenance activities. Class 2 faults do not affect dispatch and will be listed in the Fault Isolation Manual (FIM). Class 2 faults will be left to the discretion of the operators when these faults are to be rectified.

24. "Administrative control item" means an item listed by the operator in the MEL for tracking and informational purposes. It may be added to an operator's MEL by approval of the Principal Operations Inspector provided no relief is granted, or provided conditions and limitations are contained in an approved document (i.e. Structural Repair Manual, airworthiness directive, etc.). If relief other than that granted by an approved document is sought for an administrative control item, a request must be submitted to the Administrator. If the request results in review and approval by the FOEB, the item becomes an MMEL item rather than an administrative control item.

25. "***" symbol in Column 1 indicates an item which is not required by regulation but which may have been installed on some models of aircraft covered by this MMEL. This item may be included on the operator's MEL after the approving office has determined that the item has been installed on one or more of the operator's aircraft. The symbol, however, shall not be carried forward into the operator's MEL. It should be noted that neither this policy nor the use of this symbol provide authority to install or remove an item from an aircraft.

26. "Excess Items" means those items that have been installed that are redundant to the requirements of the FARs.

27. "Day of Discovery" is the calendar day an equipment/instrument malfunction was recorded in the aircraft maintenance log and or record. This day is excluded from the calendar days or flight days specified in the MMEL for the repair of an inoperative item of equipment.

This provision is applicable to all MMEL items, i.e., categories "A, B, C, and D."

Appendix B:

FAA: Flight Standards Boards

Flight Operations Evaluation Board (FOEB): Duties, Composition

Flight Operations Evaluation Boards (FOEBs) are responsible for developing Master Minimum Equipment Lists (MMELs) from Preliminary MMELs drafted by aircraft manufacturers. Flight Operations Evaluation Boards are made up of technically qualified specialists, engineering representatives and Aviation Safety Inspectors. The composition and the qualifications of individual members on an FAA Flight Operations Evaluation Board (FOEB) are described and empowered in various orders and guidance material issued by Flight Standards Service (AFS). Most notably, FAA Order 8400.10 discusses the subject of Technical Boards in Volume 8, Chapter 3, Technical Groups, Boards, and National Resources, beginning on page 8-77.

Flight Operations Evaluation Boards (FOEBs) should be staffed with highly qualified individuals in order to complete the design and approval of a Master Minimum Equipment List (MMEL) accurately and as efficiently as possible. Flight Operations Evaluation Boards are managed by the responsible Aircraft Evaluation Group (AEG), a Flight Standards Organization that is normally co-located with an Aircraft Certification Office (ACO) that is responsible for certifying an airplane on behalf of the FAA. The majority, not all, of the FOEB Members are drawn from the AEGs.

FOEBs are historically and by design a five or six member Board, composed of:

- A Chairperson, who is an AEG Operations Specialist and who is normally also the chairperson of the Flight Standardization Board (FSB),
- An Engineering Representative, normally a Flight Test Pilot (Note: a Flight Test Engineer may sit on the Board at the discretion of the Manager, Flight Test),
- An Operations Specialist, usually from a Certificate Management Organization or Office from a Region where the aircraft is being put into service or is in service,
- A Maintenance Inspector from the AEG,
- An Avionics Inspector from the AEG, and
- An Operations Inspector from Headquarters Policy Division, when available.
- It is also highly beneficial to have an engine specialist (Inspector) from the Powerplant, AEG (engines, auxiliary power planes, and propellers) sitting on the Board.

The FOEB may call upon any other specialists whose assistance may be required to complete any specialized tasks associated with the approval process.

Flight Operations Policy Board (FOPB): Duties, Composition

The Flight Operations Policy Board (FOPB) has historically been located in the Air Transportation Division, AFS-200, at FAA Headquarters in Washington, D. C. For several decades, the FOPB has provided Policy and Guidance to both the Flight Standardization Boards (FSBs) and the Flight Operations Evaluation Boards (FOEBs). The Policy Board also assists the FSBs and FOEBs in accomplishing their tasks by providing an Air Transportation Division position on issues that have not previously been addressed. One of the ways that the Policy Board (Air Transportation Division) assists the FOEBs is that the Board manages and maintains a Policy Letter Repository that is automated and accessible to the informed public, which contains over 100 Policy Letters that set FOEB (MMEL) Policy for a wide variety of issues. This Repository has been developed over the course of the last 30-40 years and has provided accepted and standardized responses to informed questions and has provided policy and guidance relative to the development of MMEL relief.

FOPB membership is the responsibility of the Manager, Air Transportation Division, AFS-200. Specific information relative to FOPB composition is in Draft, not fully developed for inclusion into FAA Order 8400.10, Volume 8, Chapter 1, Washington (Headquarters) Technical Functions.

For over a decade and a half, an MMEL Sub-Committee assisted in a large measure by the Air Transportation Association (ATA), and several other interested and informed aviation organizations, have come together, meeting regularly; and they have assisted the FAA in designing recommendations for consideration on matters of policy relative to the managing of an MMEL System by Flight Standards Service. This cooperative effort has been very successful in designing broad based recommendations that have gained wide industry acceptance relative to policy matters and the use of a Master Minimum Equipment List (MMEL) as a corner stone for the industries (Operator's) Minimum Equipment Lists (MELs).

The functions of the Flight Operations Policy Board have been to:

- Assist in developing or provide the FOEB and FSB Chairpersons with the Current Air Transportation Division policy as it relates to Board responsibilities,
- Assist in developing or provide the FOEB and FSB Chairpersons with interim policy and guidance where a standard or policy has not been established,
- Review and coordinate with Board Chairpersons, AEG Board Reports (FSBs and MMELs), as is appropriate, to insure that training, evaluation, and operational recommendations/decisions are consistent with goals, regulatory objectives and industry needs, and
- Meet, as a management team, to anticipate and seek early solutions to problems that relate to the functions of an FOEB or FSB, and thereby, review the effectiveness of the overall program.

Appendix C:

MMEL Sample Page

U.S. DEPARTMENT OF TRANSPORTATION

MASTER MINIMUM EQUIPMENT LIST

FEDERAL AVIATION ADMINISTRATION

AIRCRAFT:	**REVISION NO:** **DATE:**	**PAGE:**

1. SYSTEM & SEQUENCE NUMBERS	ITEM	(2) CATEGORY	3. NUMBER INSTALLED	4. NUMBER REQUIRED FOR DISPATCH	5. REMARKS OR EXCEPTIONS

Appendix D:

FAA MMEL Preamble (Example)

(Aircraft Type)

Preamble
(Effective 6/14/89)

The following is applicable for authorized certificate holders operating under Federal Aviation Regulations (FAR) Parts 121, 125, 129, 135: The FAR require that all equipment installed on an aircraft in compliance with the Airworthiness Standards and the Operating Rules must be operative. However, the Rules also permit the publication of a Minimum Equipment List (MEL) where compliance with certain equipment requirements is not necessary in the interests of safety under all operating conditions. Experience has shown that with the various levels of redundancy designed into aircraft, operation of every system or installed component may not be necessary when the remaining operative equipment can provide an acceptable level of safety. A Master Minimum Equipment List (MMEL) is developed by the FAA, with participation by the aviation industry, to improve aircraft utilization and thereby provide more convenient and economic air transportation for the public. The FAA approved MMEL includes those items of equipment related to airworthiness and operating regulations and other items of equipment which the Administrator finds may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations; it does not contain obviously required items such as wings, flaps, and rudders. The MMEL is the basis for development of individual operator MELs which take into consideration the operator's particular aircraft equipment configuration and operational conditions. Operator MELs, for administrative control, may include items not contained in the MMEL; however, relief for administrative control items must be approved by the Administrator. An operator's MEL may differ in format from the MMEL, but cannot be less restrictive than the MMEL. The individual operator's MEL, when approved and authorized, permits operation of the aircraft with inoperative equipment.

Equipment not required by the operation being conducted and equipment in excess of FAR requirements are included in the MEL with appropriate conditions and limitations. The MEL must not deviate from the Aircraft Flight Manual Limitations, Emergency Procedures or with Airworthiness Directives. It is important to remember that all equipment related to the airworthiness and the operating regulations of the aircraft not listed on the MMEL must be operative.

(Aircraft Type)

Preamble
(Effective 6/14/89)

Suitable conditions and limitations in the form of placards, maintenance procedures, crew operating procedures and other restrictions as necessary are specified in the MEL to ensure that an acceptable level of safety is maintained.

The MEL is intended to permit operation with inoperative items of equipment for a period of time until repairs can be accomplished. It is important that repairs be accomplished at the earliest opportunity. In order to maintain an acceptable level of safety and reliability the MMEL establishes limitations on the duration of and conditions for operation with inoperative equipment. The MEL provides for release of the aircraft for flight with inoperative equipment. When an item of equipment is discovered to be inoperative, it is reported by making an entry in the Aircraft Maintenance Record/Logbook as prescribed by FAR. The item is then either repaired or may be deferred per the MEL or other approved means acceptable to the Administrator prior to further operation. MEL conditions and limitations, do not relieve the operator from determining that the aircraft is in condition for safe operation with items of equipment inoperative.

When these requirements are met, an Airworthiness Release, Aircraft Maintenance Record/Logbook entry, or other approved documentation is issued as prescribed by FAR. Such documentation is required prior to operation with any item of equipment inoperative.

Operators are responsible for exercising the necessary operational control to ensure that an acceptable level of safety is maintained. When operating with multiple inoperative items, the interrelationships between those items and the effect on aircraft operation and crew workload will be considered.

Operators are to establish a controlled and sound repair program including the parts, personnel, facilities, procedures, and schedules to ensure timely repair.

WHEN USING THE MEL, COMPLIANCE WITH THE STATED INTENT OF THE PREAMBLE, DEFINITIONS, AND THE CONDITIONS AND LIMITATIONS SPECIFIED IN THE MEL IS REQUIRED.

Appendix E:

MMEL Approval Page

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

WASHINGTON, D.C.

Revision:
Date: 06/09/2004

M A S T E R M I N I M U M E Q U I P M E N T L I S T

Aircraft Type

APPROVED BY: /S/

FOEB CHAIRMAN

Federal Aviation Administration
Flight Standards Division
SEATTLE AIRCRAFT EVALUATION GROUP SEA-AEG
1601 Lind Ave. S.W.
RENTON, WA 98055-4056

TELEPHONE: (425) 917-6600 FAX: (425) 917-6638

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Aviation Rulemaking Advisory Committee Meeting on Transport Airplane and Engine Issues

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of public meeting.

SUMMARY: This notice announces a public meeting of the FAA's Aviation Rulemaking Advisory Committee (ARAC) to discuss transport airplane and engine (TAE) issues.

DATES: The meeting is scheduled for Thursday, October 14, 2004, starting at 8:30 a.m. Arrange for oral presentations by October 12, 2004.

ADDRESSES: Aerospace Industries Association, 1000 Wilson Boulevard, Suite 1700, Arlington, VA.

FOR FURTHER INFORMATION CONTACT: John Linsenmeyer, Office of Rulemaking, ARM–207, FAA, 800 Independence Avenue, SW., Washington, DC 20591, Telephone (202) 267–5174, FAX (202) 267–5075, or e-mail at *john.linsenmeyer@faa.gov.*

SUPPLEMENTARY INFORMATION: Pursuant to section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463; 5 U.S.C. app. III), notice is given of an ARAC meeting to be held October 14, 2004 at the Aerospace Industries Association in Arlington, Virginia.

The agenda will include:

- Opening remarks.
- FAA report.
- European Aviation Safety Agency/ Joint Aviation Authorities report.
- Transport Canada report.
- Executive Committee report.
- Harmonization Management Team report.
- Ice Protection Harmonization Working Group (HWG) report.
- Airworthiness Assurance Working Group presentation of work plan and approval.
- Avionics HWG report.
- § 25.1309 Summary of recent activity on specific risk.
- Written or verbal reports, as required, from the following HWGs: General Structures, Engine, Electromagnetic Effects, Flight Test, Seat Test, Flight Control, Flight Guidance, System Design and Analysis, Electrical Systems, Design for Security, Powerplant Installation, Mechanical Systems, and Human Factors.
- Review of action items and 2005 meeting schedule.

Attendance is open to the public, but will be limited to the availability of meeting room space. Please confirm your attendance with the person listed in the **FOR FURTHER INFORMATION CONTACT** section no later than October 12. Please provide the following information: Full legal name, country of citizenship, and name of your industry association, or applicable affiliation. If you are attending as a public citizen, please indicate so.

For persons participating domestically by telephone, the call-in number is (202) 366–3920; the Passcode is ''4087.'' Details are also available on the ARAC calendar at *http://www.faa.gov/avr/arm/arac/calendarxml.cfm.* To insure that sufficient telephone lines are available, please notify the person listed in the **FOR FURTHER INFORMATION CONTACT** section of your intent by October 12. Anyone participating by telephone will be responsible for paying long-distance charges.

The public must make arrangements by October 12 to present oral statements at the meeting. Written statements may be presented to the committee at any time by providing 25 copies to the person listed in the **FOR FURTHER INFORMATION CONTACT** section or by providing copies at the meeting. Copies of the document to be presented to ARAC for decision by the FAA may be made available by contacting the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

If you are in need of assistance or require a reasonable accommodation for the meeting or meeting documents, please contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section. Sign and oral interpretation, as well as a listening device, can be made available if requested 10 calendar days before the meeting.

Issued in Washington, DC on September 27, 2004.

Tony F. Fazio,

Director, Office of Rulemaking.

[FR Doc. 04–22015 Filed 9–27–04; 4:29 pm]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

General Aviation Training Materials

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of availability.

SUMMARY: With this notice, the FAA's General Aviation and Commercial Division (AFS–800) announces the availability of three new educational resources for pilots and flight instructors. These are the first in a series of new web-based training materials tailored to the operational needs of the general aviation (GA) community.

FOR FURTHER INFORMATION CONTACT: Mike Brown, Certification and Flight Training Branch, AFS–840, FAA, 800 Independence Ave., SW., Washington, DC 20591; telephone (202) 267–7653; fax (202) 267–5094; or e-mail *michael.w.brown@faa.gov.*

Background: In an effort to improve general aviation safety, the FAA continues to focus its attention on the flight training community. Specifically, AFS–800 has been tasked via the Administrator's *Flight Plan 2004–2008* with improving flight training while maintaining or lowering costs. To that end, the FAA is moving forward by developing educational and flight training materials to help improve the quality of flight instruction.

The first resource, titled *Flight Instructor Training Module Volume 1: FAA/Industry Training Standards* (FITS), is designed to achieve two objectives. First, it will familiarize flight instructors with the FITS program, including its history, objectives, methods, and future goals. Second and perhaps most important, this training module will provide instructors with the guidance needed to develop their own FITS-based training curricula.

The second and third resources, titled *System Safety Course Developers' Guide* (parts 1 and 2), will familiarize flight instructors with the concepts, principles, and techniques central to system safety. In addition, these modules will provide instructors with the tools necessary to integrate system safety concepts into their current instructional programs.

While the FAA created these resources for the flight instructor community, all pilots are encouraged to review these materials as part of their initial or recurrent training efforts. Both documents, along with other flight training resources, may be downloaded at *http://www.faa.gov/avr/afs/FITS/training.cfm.*

Issued in Washington, DC, on September 21, 2004.

Robert A. Wright,

Manager, General Aviation and Commercial Division.

[FR Doc. 04–21738 Filed 9–29–04; 8:45 am]

BILLING CODE 4910–13–M

- Executive Committee Report
- Harmonization Management Team Report
- Ice Protection Harmonization Working Group (HWG) Report
- Airworthiness Assurance Working Group Presentation of Work Plan and Approval
- Avionics HWG Report
- § 25.1309 Summary of Recent Activity on Specific Risk
- Written or verbal reports, as required, from the following HWGs: General Structures, Engine, Electromagnetic Effects, Flight Test, Seat Test, Flight Control, Flight Guidance, System Design and Analysis, Electrical Systems, Design for Security, Powerplant Installation, Mechanical Systems, and Human Factors.
- Review of Action Items and 2005 Meeting Schedule

Attendance is open to the public, but will be limited to the availability of meeting room space. Please confirm your attendance with the person listed in the **FOR FURTHER INFORMATION CONTACT** section no later than October 12. Please provide the following information: Full legal name, country of citizenship, and name of your industry association, or applicable affiliation. If you are attending as a public citizen, please indicate so.

For persons participating domestically by telephone, the call-in number is (202) 366-3920; the Passcode is "4087". Details are also available on the ARAC calendar at http://www.faa.gov/avr/arm/arac/calendarxml.cfm. To insure that sufficient telephone lines are available, please notify the person listed in the FOR FURTHER INFORMATION CONTACT section of your intent by October 12. Anyone participating by telephone will be responsible for paying long-distance charges.

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Issued in Washington, DC on SEP 27 2004

Tony F. Fazio
Director, Office of Rulemaking

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