

**AGING TRANSPORT SYSTEMS RULEMAKING
ADVISORY COMMITTEE
MEETING MINUTES**

Date: July 25-26, 2001
Time: 8:00 a.m.
Place: Boeing Customer Services Center
Seattle, Washington

DAY ONE

Administrative

Mr. Kent Hollinger, the Aging Transport Systems Rulemaking Advisory Committee (ATSRAC) Chair, called the meeting to order at 8:10 a.m. after which Mr. Charles Huber, the ATSRAC Executive Director, read the advisory committee briefing statement. Following Mr. Huber's statement, Mr. Hollinger thanked Boeing for hosting the meeting, then reviewed the agenda (Handout 1).

Discussion of Overlap in ARAC and ATSRAC Taskings

Mr. Richard Peri (Aircraft Electronics Association) raised the issue of how ATSRAC intended to address the ARAC NPRMs on aging wiring that were recently published and that covered areas now under review by ATSRAC's working groups. Meeting participants discussed this topic at length, focusing on whether the working groups should coordinate their efforts with similar work by ARAC. Mr. Huber commented that there is some overlap between ARAC's work and Working Group 6, but the ARAC NPRMs recently issued mostly address harmonization with the JAR (Joint Aviation Requirements). Mr. Variakojis (Boeing), the Working Group 6 Co-Chair, added that some outcomes from the ARAC Electrical Systems Harmonization Working Group (ESHWG) are related to wiring. After further discussion, the Committee reached a decision to have Working Group 6 coordinate its efforts with ARAC's ESHWG, to include discussion of the ESHWG's conclusions and recommendations about wiring. In addition, Steve Slotte (FAA) was asked to do a brief presentation later in this meeting to discuss the recently issued NPRMs. It was also noted that the EAPAS (Enhanced Airworthiness Program for Airplane Systems) presentation on today's agenda would include some information about these NPRMs.

New ATSRAC Members

Mr. Huber introduced three new ATSRAC members and one new alternate member

New Members

- Mr. Kirk Thornburg, Northwest Airlines
- Mr. Guy Borowski, AirTran Airways
- Mr. John Driver, PEMCO World Air Services

New Alternate Member

- Ms. Christine Negroni, National Air Disaster Alliance/Foundation

Approval of March 2001 Minutes (Handout 2) and April 2001 Minutes (Handout 3)

Following general introductions, Mr. Hollinger asked for comments on the drafts of March and April minutes. Several comments followed requesting minor changes that the Committee approved.

New Schedule for Action Items and Minutes

Mr. Hollinger asked Ms. Shirley Stroman (FAA) to discuss the new schedule for release of action items/key decisions and minutes. Ms. Stroman advised the group that following a meeting with Mr. Hollinger, Mr. Huber, and Ms Brenda Courtney (FAA), agreement was reached to issue action items/key decisions within 1 week of meetings and minutes within 30 days of meetings. The Committee accepted the new schedule without objection.

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Letter to JAA (Joint Aviation Authority)—Handout 4

Mr. Hollinger discussed his July 12, 2001 letter to Mr. Gert Litterscheidt of the JAA and asked for the Committee's concurrence with the contents. He indicated that the letter included his recommendation that the JAA develop a regulatory process equivalent to the FAA's SFAR (Special Federal Aviation Regulation) and AC (Advisory Circular). Since the FAA is expected to issue SFARs and ACs as part of its implementation of ATSRAC's recommendations, the JAA's development of similar regulatory documents would facilitate harmonization. Mr. Hollinger's request elicited several comments from participants who voiced concern that he had not gotten the Committee's approval of the letter prior to sending it. In response, Mr. Hollinger and Mr. Jim Shaw (ATSRAC Assistant Chair) expressed that the letter was sent under exceptional conditions in that it had to be issued quickly given the aggressive schedule of the Committee's implementation phase. After this discussion, a motion was made and seconded to accept the contents of the July letter; the Committee voted unanimously in favor of acceptance. The Committee then agreed that Mr. Hollinger would prepare a follow-up letter addressed to Mr. Klaus Koplín (JAA) in which he would inform the JAA of the Committee's acceptance of the contents of the July 12 letter.

Enhanced Airworthiness Program for Airplane Systems (EAPAS) Presentation (Handout 5)

In follow-up to a decision at the April 2001 ATSRAC meeting to provide the Committee with regular status reports on the overall initiatives under EAPAS, Mr. Massoud Sadeghi (FAA) gave an overview of the program that included—

- Historical information on the formation of the program;
- Member organizations;
- ATSRAC initial taskings and related activities and outcomes;
- Current status of ATSRAC taskings; and
- EAPAS's implementation plan, which includes training and regulatory initiatives.

Mr. Sadeghi's presentation was followed by discussion that included comments about how training would be approached. Mr. Sadeghi indicated that training would be focused on what should be done from a best-practices standpoint as opposed to what should not be done. Mr. Huber commented that a standardized approach in terms of application was also important. Mr. Huber then discussed the use of the FAA's best-practices video in training and advised the group that he would send them the contact information to obtain a copy of the video from the Oklahoma City Regional Office.

There was also discussion about recently issued Airworthiness Directives (ADs). Mr. Sadeghi told the group that from all the age-related activities, there was a need to issue 24 ADs, and of this number, 23 NPRMs had already been issued. A participant asked if the group could be advised of the recommendations that the FAA has not accepted, whereupon Mr. Hollinger asked for a presentation at the October 2001 meeting on the status of what FAA has and has not accepted in terms of ATSRAC recommendations.

Mr. Sadeghi informed the group that in the interest of information sharing, the FAA would hold annual workshops for engineers and inspectors with the initial workshops planned for early November 2001. He then indicated that he and Mr. Fred Sobeck (FAA) had prepared a brief overview of the anticipated agenda for these workshops and Mr. Sobeck would provide the overview.

Agenda for PMI/ACO Engineer Workshop

Mr. Sobeck began the overview with introductory remarks stating that one of the recommendations from the White House Commission on Security and Safety (WHCSS) was that the FAA should hold annual workshops with industry to share lessons learned via ATSRAC and other vehicles. He added that the upcoming November workshops resulted from this

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recommendation. Mr. Sobeck then reviewed a draft agenda for the workshops that included the following topics:

- Aging System Background: the WHCSS and the Wiring Interagency Working Group.
- Lessons learned from TWA 800, Swiss Air 111, and other related in-flight smoke and fire events.
- ATSRAC's development and implementation phases.
- Formation of ATSRAC working groups; presentations by Working Groups 6, 7, and 8.
- Aging Electrical Systems Research and Development Program.
- New policies in rulemaking and proposed rulemaking.
- Mechanical systems.
- External presentations (Boeing, Airbus, Air Force, Navy, NASA, NTSB, wiring manufactures, etc.).
- Fuel Tank SFAR 88.

Following Mr. Sobeck's presentation, the group discussed possible dates for the workshops and agreed that they would be held over 3 days from November 6 to 8, 2001 in Seattle, Washington.

Aging Activities for Mechanical Systems

Mr. Sadeghi informed the group that his discussion of aging activities for mechanical systems was for informational purposes only, and since the wiring issues were pretty much under control, attention was now being turned towards mechanical systems. Mr. Huber added the following comments: When work on aging systems first began, mechanical systems were included; however, a review of the relevant data clearly indicated a need to focus on wiring systems. Therefore, except for single element dual load path, not much has been done with mechanical systems. As a result, the FAA is currently doing an in-house investigation to determine what needs to be done in this area. Mr. Sadeghi continued his discussion by noting that unlike wiring systems, mechanical systems are less prone to age-related safety issues. However, the FAA wants to be pro-active in making sure that any identified safety issue is addressed. The mechanical systems effort will be done in phases, beginning with flight control systems. The FAA's Technical Center is handling this research effort, which is being done in coordination with Boeing, Airbus, and the JAA. The effort will begin in August 2001 and will extend for a period of 18 months. It will include design and maintenance risk assessments as well as some destructive testing.

FAA Aging Electrical Systems Research Program Presentation (Handout 6)

Mr. Robert Pappas (FAA) provided a presentation that covered the status of the FAA Technical Center's research initiatives, with primary focus on arc fault circuit breakers (AFCB). Following a general introduction of the Center's wire performance research efforts, Mr. Pappas discussed that the purpose of AFCBs is to mitigate the effects of electrical arcing on aircraft wiring. He then provided background information on current AFCB inspection technology, progress in developing new AFCB technology, and AFCB operational issues.

Mr. Pappas indicated that industry stakeholders and groups that set standards should include users such as airlines and unions to help develop wire performance standards. He estimated that it would take 18 to 24 months for the research program to reach fruition, and indicated that it will include information derived from the Technical Center's wire degradation program.

Wire Performance Discussion

Following Mr. Pappas's presentation, Mr. Hollinger reminded the group of the decision at the April 2001 meeting to revisit the issue of whether ATSRAC should ask the FAA to task it with reviewing wire performance issues. Currently, wire performance falls under the EAPAS umbrella and is handled by the Technical Center. After a lengthy discussion about the pros and cons of ATSRAC being tasked with wire performance, the Committee voted unanimously in favor of leaving the project with the Technical Center. However, Committee members agreed to continue, at future ATSRAC meetings, the updates on non-ATSRAC related EAPAS initiatives.

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Working Group Coordination Plan

In Mr. Mike Nancarrow's absence, Mr. Don Andersen (Boeing) made the presentation on the proposed coordination plan for the working groups. He proposed to have Boeing assume the coordinator function. In this role, Boeing would lead the coordination effort by holding a weekly tele-conference with a representative from each working group who would report on that working group's activities. This process would satisfy the second sub-task of each of the four main tasks. The working group chairs would select a representative from their respective group to participate in the weekly tele-conference. In addition to the weekly tele-conference, Boeing would hold a meeting with the representatives prior to ATSRAC meetings to integrate the different reports. Mr. Andersen discussed that Boeing was attempting to re-hire Mr. Nancarrow on a consulting basis and would assign him the coordinator role if the rehire process proved successful. In the interim, Mr. Andersen would assume this role.

Coordination Plan Discussion

Following Mr. Andersen's presentation, Mr. Patrick Glapa (Airbus) suggested that the Federal Aviation Administration (FAA), not Boeing, should fill the coordinator role. Mr. Huber responded that FAA was not the best choice for this role since ATSRAC served an advisory function to the FAA. In addition, he noted that having another Committee member organization serve as coordinator would allow FAA to focus on decision making. Mr. Hollinger commented that some type of coordination process was necessary, either the one Mr. Andersen had proposed or another. Mr. Andersen stated that Boeing's role would be one of facilitator--to make sure the different groups communicated with each other and report back to ATSRAC. Mr. Glapa responded that he was concerned about the focus on Boeing as the coordinator, whereupon Mr. Sadeghi suggested an alternative coordination method that would have common members of different working groups serve as coordinator between the common groups. Mr. Hollinger responded that all of the groups did not have common members. Another participant suggested that if Boeing assumed the coordinator role, to alleviate any concern that the process may be "one-sided," the working group representatives could send their reports to their chairs for sign-off before releasing them.

After additional discussion, Mr. Hollinger suggested rotating the function for 3-month periods with Boeing taking the first 3 months. Following more discussion that included a suggestion that any member organization could volunteer for the coordinator role, Mr. Robeson made a motion to accept Boeing's proposal and revisit the issue at the October 2001 meeting. The motion was seconded, and the Committee voted unanimously in favor of acceptance.

Wiring System Harmonization Working Group—Task 6 Update (Handout 7)

Mr. Variakojis provided an update of the status of WG 6 activities per handout 7. The Committee unanimously accepted the WG's concept statement and work plan with agreed-upon modifications. These modifications encompassed a definition of wire systems for purposes of the WG's work. For specifics regarding this definition, see the "Key Decisions and Conclusions" heading on page 9.

ATSRAC HWG Task 7 Update (Handout 8)

Mr. Tony Poole (Airbus) and Ms. Tracey Johnson (Boeing) provided the status of WG 7's activities per handout 8. They indicated that the timeline for completion of the task was dependent on input from Working Group 6. In addition, they required input from ATA to implement recommendations on task 7.3 (define standard format). Mr. Huber responded that he would contact ATA to solicit their participation in Working Group 7. In response to questions about the schedule and about whether the basic manual format in terms of navigation would be retained, Mr. Poole responded that the group would do most of its work via e-mail between July and October, and the basic navigational aspects of the manual would be retained. Following the status report, the Committee voted unanimously to accept the concept statement and work plan.

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DAY TWO

Working Group Coordination Proposal

After Mr. Hollinger reconvened the meeting, Mr. Wayne Maxey (Boeing) reported that Boeing had been successful in obtaining Mr. Nancarrow's consulting services, and Mr. Nancarrow would be available to assume the role of coordinator for the working groups. Mr. Hollinger then asked for a vote on the proposal to have Mr. Nancarrow lead the coordination effort; the Committee voted unanimously in favor of the proposal, which will be reviewed for possible changes at the October 2001 meeting. Following the vote, Mr. Hollinger asked the Working Group Chairs to send him the name of a representative from their group who would be the contact person for the weekly tele-conference.

ATSRAC HWG Task 8 Update (Handout 9, Handout 9a)

Mr. Gunter Friedrich (Lufthansa Technical Training) reported on the status of Working Group 8 per handout 9 and handout 9a.

NOTE: Mr. Friedrich made the following correction to the third slide in his presentation: The estimated completion date for Task 8.4 is January 2002, not January 2001.

During discussion of Mr. Friedrich's presentation, Mr. Sobeck indicated that he had discussed with the FAA the issue of recurrent training in terms of the appropriate recurrent training cycle for a specific task or type of training and was not able to reach a definitive conclusion. He asked Working Group 8 to provide the FAA with advice in this area. Mr. Huber commented on why training continued to be part of the taskings even though the final report covering training for Task 5 was a well-developed document. He stated that the training component was necessary to ensure that any new information resulting from the other working groups (6, 7, and 9) would be included in the final training program. He then noted that there are no training references in Task 8 to the expectations about zonal analysis procedures, but there are some criteria in Task 3 about these expectations. The Committee agreed that training for Enhanced Zonal Analysis Procedure (EZAP) should be included in the SWPM (Standard Wiring Practices Manual). Additional discussion occurred where a participant noted that EZAP was already included in training module C (see handout 9a). Mr. Huber responded that the idea is for Working Group 8 to ensure that there is a tie back to the development of the program.

The participants discussed at length how many hours of training would be required for basic and recurring training and whether the 2000 hours of AMP training duplicated the basic training represented in Task 8. Mr. Sobeck indicated that the training requirement in Task 8 refers to part 121 operators and possibly to part 145 repair stations. The requirement is that there must be a maintenance-training program. The discussion ended with a general agreement that the basic training will likely take about 1 week to complete and the recurrent training about 3 days. In addition, the training was not duplicative, as it is transferable. It is up to the individual carrier whether to determine if prior training would meet the part 121 training requirement.

The Committee voted unanimously to accept Working Group 8's concept statement and work plan with noted changes, including those listed under the "Key Decisions and Conclusions" heading below.

Update on Airworthiness Directives (ADs)

Mr. Slotte provided attendees with a brief overview of the status of ARAC NPRMs per their request. He indicated that about 29 ADs have been developed based on the intrusive and non-intrusive inspections and about 23 of the related NPRMs have been issued for comment with the comment period ending September 6. In addition, a final

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rule (with an August 7 effective date) has been issued without notice because no U.S. registered airplanes will be affected. Another final rule with request for comments has been issued; comments have been received and addressed, and the rule will become effective on August 27.

ATSRAC HWG Task 9 Update (Handout 10)

Mr. Randy Boren (Northwest Airlines) updated attendees on Working Group 9's progress per handout 10. Following Mr. Boren's presentation, Mr. Sobeck commented that the FAA expected to have the draft maintenance Advisory Circular (AC) for operators, Operational Specifications, and accompanying FAA letter completed by December 30, 2001. He noted that the letter would request voluntary compliance with the final AC so operators could incorporate the recommendations into their maintenance program prior to issuance of the rule. Mr. Huber added that the FAA would provide Working Group 9 with data on small transport airplanes to incorporate in the group's review. The Committee voted unanimously to accept the group's concept statement and work plan.

Update on Northwest Airlines DC9 EZAP Prototype Project (Handout 11)

Mr. Boren presented a brief update per handout 11 on Northwest Airlines' EZAP Prototype Project. Mr. Boren noted that the FAA had asked Northwest Airlines to do a prototype EZAP analysis on an existing fleet to obtain data about the EZAP logic and process. He then discussed the milestones the project group had achieved and key conclusions reached. It was noted that Delta had volunteered to develop a similar project on 767 airplanes.

EZAP Training Discussion

After Mr. Boren's presentation, a lengthy discussion ensued about whether the concept of training was being extended further than it should be and about the applicability for this training. Mr. Sobeck stated that the intent was not to mandate that airlines send their people through this training but rather to capture it in the AC. He asked Working Group 8 to provide guidance for developing this area of the AC. Mr. Huber noted that the training applied to all transport airplanes. Mr. Peri stated that including all transport airplanes would put responsibility for developing training on about 100,000 operators, who were responsible for general aviation aircraft, and since the discussion thus far has centered only around airlines, to include all part 25 aircraft at this point is unfounded. He also noted that there is no standardization among aircraft outside the airlines, which would make such training a "monumental" task. Mr. Huber replied that heavy transports had been investigated and the investigation had demonstrated a need for such training and a need for these airplanes to meet the SFAR requirements. He also stated that the FAA will be doing a further inspection program on small transports before the issue of applicability is finalized. Mr. Sobeck added that when the rulemaking project begins, the issues just discussed will be looked at again with input from the economist on the team. But for now, parts 91 through 129 are being included in the process for planning purposes. In response to a comment about the SFAR, Mr. Huber stated that the SFAR is a proposed part 21 rule, and applicability would be defined in the rule itself. Mr. Sobeck offered a suggestion that the issue be addressed in the maintenance AC, then ATSRAC could make a decision based on the draft about whether the areas of concern had been sufficiently covered. The consensus was to accept Mr. Sobeck's suggestion.

Process for Public Comments Discussion

After the completion of all agenda items, Mr. Hollinger asked if there were any further comments, whereby Mr. Tony Heather (JAA) questioned what follow-up would be done on the e-mail from Mr. Pat Price regarding having the Committee consider certain wire performance issues. A discussion ensued that mainly included comments about the process for members of the public to submit statements to the Committee. The consensus was that Mr. Hollinger would send Mr. Price a reply outlining the process for

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members of the public to submit comments to the Committee and attend public meetings.

Review of Action Items

Mr. Hollinger reviewed pending action items (AIs) and Ms. Stroman reviewed the list of AIs from the current meeting. Mr. Hollinger noted that all previous AIs had been resolved except for the July 2000 item to have engine manufactures give a presentation on wiring; this AI was carried over to the July 2001 list. Mr. Hollinger reminded the group that the next meeting would be held October 24-25,2001 at FAA Headquarters, Washington, DC in the Bessie Coleman Conference Center.

Adjournment: The meeting adjourned at 11:20 a.m.

Attendees: (Handout 12)

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ACTION ITEMS

1. Contact engine manufacturers about wiring and have them refer someone to make a presentation to ATSRAC. (Bob Robeson)—Action Item from July 2000 meeting.
2. At the October 2001 ATSRAC meeting, give a presentation on the status of ATSRAC recommendations and outcomes. (Huber)
3. Send Klaus Koplin a follow-up letter stating the Committee's acceptance of the contents of Kent Hollinger's July 12, 2001 letter to Mr. Litterscheidt of the JAA, and provide the Committee with an electronic copy of the follow-up letter. (Hollinger)
4. Provide Committee members with an electronic copy of all presentations from July 2001 meeting. (Hollinger)
5. At October 2001 ATSRAC meeting, give a presentation on FAA's plan for small transport aircraft. (Huber)
6. At the October 2001 ATSRAC meeting, review working group coordination process agreed upon at July's meeting to determine if revisions are necessary. (Hollinger)
7. Provide the Committee with contact information for obtaining the training video from Oklahoma City. (Huber)
8. Contact ATA to solicit participation in Task 7 Working Group. (Huber)
9. Provide the ATSRAC Chair with the name and telephone number of a contact person in their respective group who will participate in the weekly conference call to coordinate working group activities. (Working Group Co-Chairs)
10. In response to Mr. Pat Price's e-mails to Committee members, prepare an e-mail response to him explaining the process for submitting public comments to the Committee. (Hollinger)
11. E-mail ATSRAC Operating Procedures to Kirk Thornburg, Guy Borowski, John Driver, and Christine Negroni, and post them on the ATSRAC web site. (Hollinger)
12. At October 2001 meeting, report on items in chapter 7 of the *Intrusive Inspection Report*. (Huber, Sadeghi, Slottie)

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KEY DECISIONS AND CONCLUSIONS

- The Committee voted unanimously to accept the contents of the July 12, 2001 letter to Gert Litterscheidt of the JAA.
- The Committee voted unanimously against requesting that the FAA task it with reviewing wire performance. Instead, it was agreed that a status of the Tech. Center's work in this area would continue to be given at future ATSRAC meetings.
- The Committee voted unanimously to accept Boeing's offer to coordinate the status of taskings among the four working groups. Mr. Mike Nancarrow will facilitate the coordination process, which will be reviewed for possible changes at the October 2001 meeting.
- The Committee voted to accept the concept statements and work plans for Working Groups 6, 7, 8 and 9 with the following key changes:
--Working Group 6 asked the Committee to assist it in defining "wire systems" in relation to the areas noted below.

WIRE LOCATION	WIRE SYSTEM (Yes/No)?	DECISION
Galleys	Yes	Consensus (1 opposed)
Lavatories	Yes	Consensus (1 opposed)
Black Boxes	No	Consensus (1 opposed)
Fuel Tanks ¹	Yes	Consensus (1 opposed)
Coax Cables	Yes	Consensus (1 opposed)
Ethernet	Yes	Consensus (1 opposed)
Optical ²	No	Consensus (0 opposed)

--Working Group 8 will—

- Review, at its next meeting, if additional training categories (e.g., technical writers, engineers, and trainers) should be added to its recommendations on who should be trained.

- Review with the Working Group 5 Co-Chair (Paul Lapwood) the training requirements deleted or wording changes made during the initial meeting of Working Group 8 when Mr. Lapwood was not in attendance.
--The Committee agreed that Working Group 8 should include initial and recurrent training under task 8.3.

Kent Hollinger, Chair

Approved:

¹ It was agreed that WG 6 would coordinate a review of the Fuel Tank SFAR with the FAA (Chuck Huber) to make a recommendation on any changes in this area.

² The Committee accepted a motion to explore this area under EAPAS to determine the issues involved.