

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

Date: January 23-24, 2002
Time: 9:00 a.m.
Place: Northwest Airlines Training Facility
Atlanta, Georgia

DAY ONE

Administrative

Mr. Kent Hollinger, the Aging Transport Systems Rulemaking Advisory Committee (ATSRAC) Chair, called the meeting to order at 9:05 a.m., after which Mr. Charles Huber, the ATSRAC Executive Director, read the advisory committee briefing statement. Following Mr. Huber's statement, Mr. Hollinger welcomed the group and thanked Northwest Airlines for hosting the meeting, then briefly discussed the agenda (Handout 1).

Approval of October 2001 Minutes (Handout 2)

Mr. Hollinger opened the floor for comments on the October 2001 minutes. Following a brief discussion and requests for two minor changes, the Committee unanimously approved the minutes with the noted changes.

Open Discussion: Extension of ATSRAC Charter

Mr. Huber opened the discussion by informing the members that ATSRAC's current charter is due to expire in 2003. He asked for comments on whether the Committee should request another 2-year extension to conduct such tasks as assisting with the rulemaking processing, including helping the FAA disposition resulting comments. Other tasks, he noted, might include assisting with the outcomes of the current Research and Development Program. In addition, he stated that he did not anticipate that the Committee would need to maintain its current schedule of holding meetings four times per year but rather would meet two to three times per year. Following Mr. Huber's comments, the Committee discussed the pros and cons of renewing ATSRAC's charter and possible additional taskings that might be completed during the extension period. Following this discussion, Mr. Hollinger summarized the issue before the Committee and called for a vote, whereby members unanimously agreed to request a 2-year extension to the current charter to assist the FAA with the rulemaking process. Mr. Hollinger added that the Committee would discuss later if other taskings would be added during the extension period.

Future Meeting Dates

Mr. Hollinger confirmed the dates for the remaining meetings in 2002 (April 24-25; July 9, 10, 11; October 23-24) and reviewed possible meeting dates for 2003. After some discussion, the Committee agreed on the following 2003 dates:

January 22-23, 2003
April 23-24, 2003
July 9-10, 2003
October 22-23, 2003

April 2002 Meeting Site

Mr. Hollinger asked if there were a possible site for the April 2002 meeting that would provide educational value to Committee members. In response, Mr. Francois Gau (Honeywell) indicated that Honeywell would likely agree to host the meeting at its Phoenix, Arizona offices. The purpose would be to demonstrate Honeywell's Nova system, which is an inspection system that allows identification of potential wire failures that may not be detected through visual inspection. Following Mr. Gau's comments, Mr. Hollinger called for a vote on the proposal, after which the Committee unanimously agreed to seek approval to hold April's meeting in Phoenix. Mr. Gau

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indicated that he would verify with his management that they would host the meeting and advise Mr. Hollinger accordingly.

EAPAS Update (Handout 3)

Mr. Massoud Sadeghi (FAA) provided a status of EAPAS activities as outlined in Handout 3. He indicated that the EAPAS program is designed to make enhancements to current airworthiness programs at operation facilities, repair stations, and manufacturing plants. The specific enhancements are a result of ATSRAC activities and independent activities by the FAA. The EAPAS Implementation Plan makes sure that all these activities are taking place properly and timely. The Plan has six major enhancement areas that include training, maintenance, design, research and development, wire reporting, and information sharing and outreach. These six enhancement areas were broken down into two broad groups where action could be taken. That is, issuing Airworthiness Directives on known unsafe conditions and providing training (e.g., inspectors and engineers). In terms of scheduling, the near-term activities were scheduled for completion by the end of 2001 and the long-term activities by mid-2004. Following these remarks, Mr. Sadeghi explained the current status of each of the near- and long-term actions. He noted that the EAPAS Implementation Plan was approved and published August 16, 2001, that the EAPAS near-term actions are being accomplished at a good pace, and that the FAA is preparing to receive the ATSRAC's final reports to begin the rulemaking process.

Discussion

At the end of his presentation, Mr. Sadeghi asked for questions from the floor. In response, Mr. Ed Block (Global Air Safety Institute) and others requested a copy of the Wire Installation Drawings referenced in Mr. Sadeghi's presentation. Mr. Sadeghi responded that both his presentation and the drawings would be posted on the ATSRAC web site. These comments were followed by a question from Mr. Kirk Thornburg (Northwest Airlines) as to whether the wire installation drawings policy applies only to new-design installations or does it also apply to existing designs that are modified. Mr. Sadeghi responded that anytime a modification is made, there must be a design showing how the wires are to be installed.

Mr. Victor Card (UKCAA/JAA), in response to Mr. Sadeghi's comments regarding the letter to OEMs requesting notes in service data for wire contamination (see slide 5, Handout 3), asked if the OEMs referred to meant Boeing and Airbus. Mr. Huber responded, noting that the letter had been discussed about a year ago within the ATSRAC membership. Therefore, the discussion group included Boeing, Airbus, and Lockheed. He went on to say that he saw no reason why other manufacturers and anyone who is developing a service bulletin could not also be included in the distribution of the letter. Mr. Card extended his earlier comments to ATSRAC recommendations in general, noting that on a number of the recommendations, the Committee had received comments from Boeing, Airbus, and Lockheed, which state what each has done or is doing to address the particular recommendations. However, while this covers a significant percentage of the world's large aircraft fleet, it doesn't cover all of it. Therefore, the Committee should consider how it might present some of the actions it has developed to the other large aircraft manufacturers. Mr. Sadeghi responded that perhaps the current letter requesting notes in service data for wire contamination could be sent to other manufacturers or the letter could be updated at a later date and sent to a wider population.

Mr. Fred Sobeck (FAA) followed with a question as to whether the information in the letter should be included in § 43.13 (b) of 14 CFR. Mr. Sadeghi responded that it is something to consider when this section of the CFR (Code of Federal Regulation) is revised. Mr. Huber added that he believed the recommendations from Working Group 3 included adding cautionary notes to various maintenance documentation, but he didn't recall if service bulletins were also included. He added that the current idea is to include these cautionary notes in service bulletins. Mr. Randy Boren (Northwest Airlines) confirmed that the recommendations from Working Group (WG) 3 primarily focused on OEM maintenance documents and not on service bulletins.

Aging Systems Research and Development Status (Handout 4)

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Mr. Rob Pappas (FAA Technical Center) gave a status of the FAA Aging Electrical Systems Research Program per Handout 4. The project is currently in Phase I, which involves designing the experiments. There are two additional phases to the Program: Phase II involves testing, and Phase III involves analysis and reporting. The overall goal of the Program is to model the aging characteristics of aircraft wiring. Mr. Pappas continued with a discussion of the specific goals of the Program.

Discussion: Avionics Boxes

Following Mr. Pappas's discussion of the specific goals of the wire degradation research, a lengthy discussion ensued about the role of avionics boxes in wire systems. Mr. Patrick Glapa (Airbus) asked if the presence of avionics boxes would be included in the research study. Mr. Pappas answered, "No." Mr. Glapa then indicated that avionics boxes are a part of a system that includes wires linked between boxes. Given this, he asked why the boxes could not identify wire degradation and this information used in consideration of the functioning of the entire aircraft. Mr. Pappas answered that Mr. Glapa's description was not part of the current study but was being discussed in other studies. Mr. Glapa added that careful thought should be given to looking at wiring as a part of a system, whereby Mr. Pappas commented that almost all current projects address wiring as a sub-system of a larger set of sub-systems. Mr. Glapa followed with comments about the importance of knowing what type of logic the OEMs place in the boxes to monitor the wires. Mr. Jim Shaw (ATSRAC Co-Chair) joined the discussion saying that if Mr. Glapa was suggesting that the failure of an individual wire is not very important because the avionics boxes can compensate, he might agree. However, the failure mode the Committee is most interested in is multiple failure, common-mode failure, and the potential for a fire; and avionics boxes don't do much to mitigate that potential.

After further discussion, Mr. Pappas indicated that there were other studies underway related to a concept called "smart wire," which is what he believed Mr. Glapa was referring to. He said that these studies appear to be focusing on sensors, which is similar to what Mr. Glapa described as a part of the avionics boxes that are associated with wires. The sensors would be capable of receiving a signal via an inspection process on individual wires and on wire bundles but are not a part of the avionics boxes. This comment was followed by a question from Mr. Chris Davies (AECMA) about what wiring includes. He asked if it was just the wire itself or was it also wire installation, connectors, cables, etc. Mr. Pappas answered that for the FAA Aging Electrical Systems Research Program study, only the wire is under consideration. Mr. Block asked what wire types were being checked, and Mr. Pappas stated that all the most common types of wires found in aging aircraft were being checked. In answer to a question about whether spliced wire was included in the study, Mr. Pappas said it was not. He then summarized the purpose of the aging system research study. He indicated that it is an attempt to model the degradation process of the installation, itself, in a dynamic way. It is also a way to see how this degradation correlates with many of the test methods currently available for measuring different parameters of the wire installation; and use the resulting data to meet all the stated objectives of the Research and Development Program.

Aging Systems Research and Development Status (Continued)

Mr. Pappas continued his presentation with a discussion about the individual tasks from phase I, the status of the wire degradation research tasks, an update on arc fault circuit breakers, advanced risk assessment methods for aircraft electrical systems, wire test and inspection technology, and other research.

Flammability of Materials (Handout 5a)

Mr. Gus Sarkos (FAA Technical Center) discussed concerns with fire safety in hidden inaccessible areas as outlined in Handout 5a. His discussion covered the following topics: accidents and incidents; thermal acoustic insulation; insulation tape and hook and loop; contamination; and problems related to PVC wiring, drip shield/ducting adhesive, and PSU dust seal.

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Discussion: Flammability Materials

After Mr. Sarkos's discussion about developing standard test procedures for tape and hook and loop (Velcro) to support the Advisory Circular (AC) for the insulation final rule, a discussion ensued about whether there was a list of flammable materials related to the testing. Mr. Sarkos indicated that there was no such list. He said that there would be procedures specified for the testing, which means some materials would pass and some would fail. To be acceptable, a material must pass a standard test. Mr. Hollinger added that the AC would define the test procedure, but the actual criteria a material has to meet have not been established. Mr. Glapa asked if there were any plans to include airplanes currently in service, and Mr. Sarkos answered that there were no such plans. Mr. Huber stated that the tape that is going to be used after the final rule must meet the test requirements. He also said that there is no tape that currently meets these requirements, so there must be some grace period that would allow manufacturers to develop an acceptable tape. Another comment was made noting that there are some tapes that would meet the test requirements, however, it is the hook and loop that will present a problem. In addition, there are current regulations that require fire resistant materials in aircraft, but these materials may not have been looked at as closely as they should have been.

Flammability of Materials (Continued)

Mr. Sarkos continued his presentation with a discussion of PVC wiring as noted in Handout 5a. He commented that the results of a comparison of different types of aircraft wiring, using both the standard 60° Bunsen Burner test under 14 CFR §25.869 and large-scale testing, showed that PVC wiring is the most flammable of the wires tested, and it produces large quantities of smoke.

Discussion: PVC Wiring

Mr. Hollinger asked if the CFR part cited had been updated lately. Mr. Huber followed with a question about when the 60° test became effective. Mr. Sarkos answered that, according to his research, the test became a requirement in 1972. A participant asked on what aircraft could PVC wiring be found. Dr. Chris Smith (FAA Technical Center) indicated that a majority of aging aircraft contained this type of wire. Mr. Sadeghi commented that prior to 1972, the FAA had flammability requirements in § 25.1359, which is no longer in existence, of the Federal Aviation Regulations (FARs). These same requirements were transferred to §25.869 of the current CFR. Mr. Bohdan Goyaniuk (Transport Canada Civil Aviation) commented that based on a survey of Canadian-registered aircraft, it seems fair to say that there are post-1972 aircraft that are less than 20 years old that have PVC wiring. Also, it appears that PVC wiring is being used in some of the commuter-type aircraft that is about 10 years old. Therefore, it is safe to say that PVC wiring is not just an aging-aircraft issue, so a review of airplanes under 20 years old should be considered in the flammability issue. When asked for an example of a newer aircraft with PVC wiring, Mr. Goyaniuk indicated "ATR-42." Transport Canada is still investigating the reason for PVC wiring being on the aircraft as it is not in the original design.

Mr. Hollinger asked Mr. Goyaniuk for clarification of his comments by noting that only aircraft that were type certificated before 1972 and are continuing to be built under that type certificate would still contain PVC wiring. But, if it were recognized afterwards that PVC did not pass the flammability test, no further aircraft should have been type certificated with this type of wiring. He then asked Mr. Goyaniuk if he was saying that such certificates had been issued after PVC had been recognized as being flammable, whereby Mr. Goyaniuk answered, "Yes." He added that it is a question of interpretation as to how the PVC wiring passed the test. Mr. Sarkos followed with comments that the point of his presentation was to indicate that, in general, PVC wiring, regardless of the specific PVC type, is more flammable than Kapton and fluoropolymer wiring. Therefore, there is a need for a more stringent flammability test for aircraft wiring.

Mr. Thornburg asked if PVC wiring would extinguish within a certain timeframe or would it propagate. Mr. Sarkos replied that it propagates, but it would eventually self-extinguish. He added that he was not sure that the fact that PVC self-extinguishes should be a criterion for reflecting the performance sought under realistic fire conditions. Dr. Smith commented that Mr. Joe Kurek (Raytheon Technical Services Co.) did the Bunsen Burner testing for the intrusive

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inspections and asked if he would comment on the test methods. Mr. Kurek indicated that the test method itself is fairly standard; it is used in the military specifications for wiring; and SAE has adopted this test method for wiring.

Following his discussion that gave additional details about the test method, Mr. Sarkos resumed and completed his formal presentation from Handout 5a. Afterward, the Committee continued with additional discussion about flammability issues. Much of the discussion covered whether a list that would identify specific materials that are, in fact, flammable would be helpful to the inspection process. Some participants felt such a list would be helpful in identifying what materials to look for during inspections while others felt it would not be beneficial to limit inspection of aircraft material to those appearing on a particular list.

Mr. Hollinger reminded the group that this topic was a carry over from the October meeting. He then re-capped the prior and current discussions, saying that they stemmed from the question in the EZAP logic that asks if flammable material is present. He indicated that at the time these materials were certified, they were not considered flammable, but if stricter testing criteria now exists that these materials might not currently meet, one might want to consider them as flammable per the EZAP logic when doing more detailed or more frequent inspections. Another participant agreed with Mr. Hollinger's assessment.

After further discussion, Mr. Hollinger referred again to the October discussion, specifically concerning the Committee's direction to WG 9 about how to handle recommendation 7 that came out of WG 3. This recommendation referred to how certified materials might be handled during maintenance and inspections. He then read from the October minutes the reference to tabling the call for a vote on the issue of whether to develop a flammable materials list, pending a presentation about flammable materials. Since that presentation had been made, Mr. Hollinger called for a vote on whether or not to compile such a list. The Committee voted 9 in favor and 5 against compiling such a list, whereupon Mr. Hollinger asked the 5 who voted against the proposal to offer alternatives. Additional comments indicated, for example, that there is no way to put such a list together because there are "endless alterations to aircraft." As a result of such alterations, there is no way to know what has gone into a particular aircraft, and since airplanes are modified by other than OEMs, one would have to audit the entire aircraft to be sure what materials it might contain.

The result of the discussion was that Mr. Huber indicated that the FAA would provide clarification by February 20th on what WG 9 needs to do to complete its tasks. The Committee unanimously agreed to this proposal. In addition to Handout 5a, Mr. Goyaniuk provided Handout 5b, which is a paper that provides additional information on flammable materials.

Engine Manufacturer Presentation (Handout 6)

Mr. Steve Hanak (General Electric Engines) discussed aircraft engine electrical wiring as it pertains to GE aircraft engines and the experience GE has had on commercial wide body aircraft. The topics he discussed included design requirements, history, types, and features; and field performance/maintenance.

Administrative

Because the flammability discussion extended well beyond the designated time, Mr. Hollinger indicated that the current session would be extended for a half hour to allow for the remainder of the scheduled presentations, except that Mr. Nancarrow's presentation would be moved to the first one for tomorrow's session.

EAPAS Small Transport Plan

Mr. Sadeghi indicated that he had completed a draft for the FAA to begin working on small transport airplanes. He added that a group, which included Mr. Elli Cotti (NBAA), Mr. Bill Schultz (GAMA), and other manufacturers had come together to assist with this effort, and he wanted to thank them for their contribution.

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NTSB Expectations (Handout 7)

Mr. Schultz gave a presentation as outlined in Handout 7 about the NTSB's expectations concerning its safety recommendation A-00-119. This recommendation advises the FAA to "ensure that all transport-category airplanes...are included in its review of aging transport aircraft systems and structures."

Small Transport Proposal (Handout 8)

Mr. Cotti provided an overview from the Small Transport Working Group (STWG) on including small transport airplanes in the recommendations the ATSRAC provides to the FAA. The primary focus would be on determining, for airplane wiring systems, to what degree the conclusions about large transports apply to small transports, and identify any issues unique to small transports. The STWG's recommendation to the Committee was to request tasking for the STWG to become a part of ATSRAC as Working Group 10.

Discussion: Small Transport Working Group

Mr. Hollinger summarized the proposal, stating that WG 10 would essentially duplicate the work of WGs 1 and 2 in the business jet environment. While the group could continue to work independent of ATSRAC, it would make more sense to become a part of ATSRAC and work with the other ATSRAC WGs. Since the FAA must formally assign this task to the Committee, the proposal for consideration is whether the Committee wants WG 10 to fall under its purview and whether it wants to ask the FAA to task it with this work. Or, whether this WG should complete its work independent of the Committee. After further discussion, the Committee voted (with 2 abstentions) to request that the FAA task it with forming WG 10 to investigate and make recommendations on small transport airplanes.

DAY TWO

Discussion: Small Transport Working Group (Continued)

After completing some administrative items, Mr. Hollinger began the second session by reminding the group about the discussion at the end of yesterday's session regarding having the FAA task the Committee with forming WG 10 and making recommendations about small transport airplanes. After quoting from the ATSRAC charter and a prior Federal Register notice announcing the Committee's current taskings, Mr. Hollinger informed the group that ATSRAC already had been tasked with addressing problems that may exist in transport-category airplane systems. However, the Committee had voluntarily limited the scope of its work to the larger airplanes. And, since the FAA had already tasked the ATSRAC with looking at all transport-category airplanes, there is no need to request additional taskings to form WG 10. After asking for comments, Mr. Card stated that WG 10 was not included in the original terms of reference so there were no harmonized activities with the JAA. Therefore, he foresaw future problems with this particular task. Mr. Huber responded that he could not see why WG 10 might end up with a non-harmonized product because the task of WG 10 is to simply make a recommendation as to whether recommendations from WGs 6-10 apply to the smaller transport airplanes. Therefore, the intent of the original tasking would not be changed. However, the applicability of the rulemaking may be affected. Mr. Card indicated that if the task does, in fact, focus in this one area, he didn't see a problem, but it appeared that there may be more than one task. Mr. Sadeghi followed with a summary of what WG 10 would accomplish: The WG would determine if the ATSRAC recommendations for large-transport airplanes were applicable to small transport airplanes. Because the smaller transports are operated differently and may be designed differently, the WG would determine if they have any unique problems. In addition to electrical wiring systems, the group would look at mechanical systems. Mr. Huber responded that mechanical systems are outside the current taskings, whereby Mr. Hollinger indicated that both electrical wiring and mechanical systems are part of the Committee's tasking, but the Committee had voluntarily focused on electrical systems. Mr. Huber responded that since tasks 6-9 do not include mechanical systems, he recommends that WG 10 first focus on whether the recommendations on large transports are applicable to the smaller transports. If these

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recommendations are not applicable, the FAA would probably want to proceed with rulemaking as it applies to large-category transports and advise the public that review of smaller transports is continuing and rulemaking and advisory materials for this category of airplane would be developed at a later time. So, in terms of the support WG 10 would provide to ATSRAC, the focus would be on whether to extend the Committee's recommendations to small transports. Any other actions WG 10 might undertake could be shared with the Committee solely for informational purposes.

A participant asked for a definition of small-transport aircraft since there are some aircraft that could fall into either the small or large category. Mr. Cotti responded that, from the operator standpoint, small transports are those covered under part 25. The traditional definition for business-type airplanes, he noted, covers those that carry 19 passengers or less or a payload of 6,000 pounds or less. However, part 135 allows aircraft up to 30 passengers that have a payload capacity not to exceed 7,500 pounds. He also stated that there is a gap in what WG 10 is going to cover in its review of small transports. Mr. Hollinger added that both the definition of small transports and the scope of what WG 10 is going to review are well defined. Mr. Sobeck commented that the WG needed to be aware that part 119 has a definition of small transports. And, as the FAA proceeds with rulemaking, it will review all existing rules for definitions of small-transport aircraft and consider this information in determining applicability of certain aircraft and operations to the rule. The participant indicated that he sees a convergence of operations for small and large aircraft as some small aircraft operates the same as commercial aircraft. In response, Mr. Schultz indicated that the WG is determining some benchmark parameters that would define the dimension of the airplanes the group will review. The real feature that distinguishes one operation from the other is the operating rules. For example, the way the aircraft is maintained and the way the inspection programs are applied. Mr. Schultz said that he speculates that there will not be significant differences in the design requirements for small compared to large aircraft; but there could be differences in how maintenance is applied. Therefore, perhaps, it would be better not to talk in terms of "small" and "large," but focus on the dimensions of the aircraft the working group will review.

Following some additional comments, Mr. Hollinger reiterated that the proposal from yesterday's session was for WG 10 to review aircraft with 6-30 seats. Mr. Huber commented that there is a part of the aircraft fleet that has not been considered, namely 70-passenger airplanes, which comprise a large part of the U.S. fleet. He asked what would be done about this category. Mr. Hollinger noted that this category would be affected since it is covered under part 25 aircraft and part 121 operators. However, no data were collected for this category due to lack of participation from industry. Mr. Huber stated that the Committee should be clear that in accepting the scope of WG 10, no data would be collected on this category of airplane. A participant followed with a comment that Transport Canada was collecting data on the 50-70 seat category of aircraft that WG 10 could review. Mr. Sobeck added that it has always been the FAA's intent, in regard to operational rules, to include regional airplanes in the Committee's efforts by holding this category of aircraft to the same standards as those for the larger airplanes. This intent is evident by the inclusion of this particular category in SFAR 88 where the cut-off point for applicability is airplanes holding 30-passengers or more and with a payload capacity not to exceed 7,500 pounds. Mr. Hollinger followed with a comment that the revised proposal under discussion is actually to include airplanes in the 30-90 seat category since the already-proposed cut-off is 30 seats. However, WG 10, Mr. Hollinger continued, has asked to limit the scope of its review to the 6-30 category, based on the group's current composition and on those individuals willing to participate. Therefore, the proposal the Committee has to vote on is whether it wants to create a WG 10 to look at the applicability of ATSRAC's products, past and current, to the 6-30 seat fleet, which will include the tasks presented by WG 10 in yesterday's session. The Committee voted (with 3 abstentions) in favor of creating WG 10 as proposed. Mr. Hollinger subsequently stated that both he and Mr. Huber would select Co-Chairs for WG 10, and a notice would be published in the Federal Register announcing the formation of this new WG.

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Intrusive Inspection Recommendations Status (Handout 9a, Handout 9b)

Mr. Mike Nancarrow (ATSRAC Integration Leader) gave the group an update on the intrusive inspection recommendations as outlined in Handouts 9a and 9b. He discussed Handout 9a, giving an overview of the integration process, the recommendations included in chapter 7 of the Intrusive Inspection Report, and the tasks related to tracking the recommendations and reporting their status to the ATSRAC. Next, he briefly reviewed Handout 9b. Following his presentation and after some discussion, Mr. Hollinger asked the Committee to complete review of Handout 9b (Intrusive Inspection Report Recommendations: Status Report) and provide comments to Mr. Nancarrow by February 20, 2002. Mr. Nancarrow would then compile the comments for easy identification of the specific recommendations on which he received comments.

FAA Economist Overview and Discussion (Handout 10a, Handout 10b)

Mr. Anthony Apostolides (FAA) provided a presentation on the process involved in the economic analysis of the rulemaking that will come from the ATSRAC's recommendations, including the data needs and how the Committee and working groups can assist in providing these data.

Working Group 9 Update (Handout 11)

Mr. Randy Boren (Northwest Airlines) gave the update on the status of WG 9's taskings, according to Handout 11, which was sent to the Committee prior to the meeting. He commented that the group had made significant progress on the AC but was behind in other tasks because of the time spent on the AC. Therefore, the WG extended the time for its next meetings and may add another meeting to its schedule. The group expects to complete the AC by the end of January. After discussion about the next steps for the AC, Mr. Hollinger asked that the WG 9 Co-Chairs provide him with a copy of the draft AC for comment and approval by the Committee within an agreed-upon time frame. After ATSRAC's approval, ATSRAC will send the AC to the FAA. Mr. Boren then expressed concern that, because WG members had spent so much time on developing the AC, they would not be able to complete the task related to single element dual load path within the July 2002 timeframe. However, WG members hoped to make up loss time on the other tasks and complete their report on those tasks by July 2002. Mr. Hollinger proposed extending the WG's due date for the single element dual load path task to December 31, 2002, after which he called for a vote. The Committee voted unanimously in favor of requesting the extension. Mr. Hollinger indicated that in his letter requesting the extension, he would request a due date of February 2003 to give the Committee time to review the WG's report.

Working Group 8 Update (Handout 12a, Handout 12b, Handout 12c, Handout 12d)

Mr. Gunter Friedrich (Lufthansa Technical Training) presented WG 8's draft final report (i.e., Aircraft Wiring Systems Training Program Advisory Circular with Appendix A and Appendix B—Handouts 12b, 12c, and 12d, respectively) to the Committee for review and approval. In addition, he provided an update of WG 8's taskings as described in Handout 12a. Following Mr. Friedrich's presentation, Mr. Hollinger asked the Committee to review and comment on the draft documents by February 8, 2002. After a discussion by participants about timeframes for training, Mr. Hollinger reminded the group that the Committee had agreed at the last meeting to focus on performance rather than on time in terms of measuring the training. Therefore, the Committee agreed that the current references to hours in Appendix A should be removed. Also, after a discussion about whether to include flight crews (e.g., flight attendants) in training, the Committee advised WG members that they should determine how this target group might best be included in the training program.

Working Group 7 Update (Handout 13a, 13b, 13c, 13d)

Mr. Tony Poole (Airbus) gave an update of WG 7's progress according to Handout 13a. Mr. Hollinger noted that Ms. Tracey Johnson (Boeing) had resigned as the U.S. Co-Chair of the group and Mr. Don Andersen (Boeing) had taken her place. Mr. Poole explained that the group had developed a Master Breakdown Index (Handout 13b) that OEMs could apply to all existing SWPMS/EPMSs (Standard Wiring Practices Manual/Electrical Standard Practices Manual), which would alleviate the need to immediately do a complete revision of existing manuals. In Handout 13c, he discussed the schematic of the recommended updates to existing SWPMS/EPMSs, and

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in Handout 13d, he provided an explanation of an SWPM/EPDM concept tree. Following his presentation, Mr. Hollinger discussed the time frame for WG 7 to submit its draft report to the ATSRAC for review, where upon Mr. Andersen responded that WG 7's draft interim report would be ready to send to the Committee for its review by March 20. Mr. Hollinger then asked Committee members to provide comments by April 3, 2002 so the Committee could be prepared to further discuss the report at the April 2002 ATSRAC meeting.

Working Group 6 Update (Handout 14)

Mr. Vid Variakojis (Boeing) presented WG 6's update per Handout 14, indicating that the group expected to meet the July 2002 dates for completion of its reports. However, he noted that the working group would not be able to deliver the promised interim reports on individual tasks. Instead, the group would provide a single report with attachments, following its March meeting, so that the Committee can provide its input in time for the working group to make final changes at its June meeting. After Mr. Variakojis's presentation, a brief discussion ensued regarding the possibility of the WG's having its draft report for review and discussion by the Committee at the Committee's April 2002 meeting. Following this discussion, Mr. Variakojis agreed to provide Mr. Hollinger with a copy of the working group's draft reports no later than April 10, 2002 for distribution to and review by the Committee.

Other Business

There were no requests for discussion of other business.

Review of Action Items

Mr. Hollinger reviewed the October 2001 list of action items and noted that all items had been resolved. Ms. Stroman then read the list of action items from the current meeting.

Adjournment: The meeting adjourned at 2:20 p.m.

Attendees: (Handout 15)

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ACTION ITEMS

1. Follow-up on holding April 2002 meeting in Phoenix, Arizona to be hosted by Honeywell. (Francois Gau, Chuck Huber, Shirley Stroman)
2. Provide Kent Hollinger with a copy of the Wire Insulation Drawings to post on the ATSRAC web site. (Massoud Sadeghi)
3. FAA will provide clarification by 2/20/2002 on what is required to complete Task 9. This relates to the issue involving the pros and cons of developing a flammable materials list. (Chuck Huber)
4. Prepare Federal Register notice announcing formation of Working Group 10. (Chuck Huber, Shirley Stroman)
5. Appoint Working Group 10 Co-chairs. (Kent Hollinger, Chuck Huber, Elli Cotti)
6. Respond to Mike Nancarrow by 2/20/2002 with any comments on the Intrusive Inspection Status Report. (ATSRAC members)
7. Summarize ATSRAC members' responses to Intrusive Inspection Status Report for easy identification of specific items commented on. (Mike Nancarrow)
8. Write letter to the FAA requesting an extension to February 2003 on recommendations regarding single element dual load path. (Kent Hollinger)
9. Provide Kent Hollinger with a copy of Working Group 9's AC for review and approval by the Committee before it's published. (WG 9 Co-chairs, ATSRAC members)
10. Review and provide comments on Working Group 8's interim report by 2/8/2002. (ATSRAC members)
11. Provide Kent with a final draft copy by 3/20/2002 of Working Group 7's interim report to forward to ATSRAC members. (Working Group 7 Co-chairs)
12. Review and provide comments on Working Group 7's interim report by 4/3/2002. (ATSRAC members)
13. Provide Kent Hollinger with copies of Working Group 6's draft reports by 4/10/2002 for review/comments by ATSRAC members. (Working Group 6 Co-chairs)

KEY DECISIONS AND CONCLUSIONS

- The Committee voted unanimously to request an extension of ATSRAC's charter for another 2-year period to facilitate the rulemaking process (i.e., provide input to the NPRM and assist with addressing comments to the NPRM). It was also decided that the Committee will determine at a later date if members would request additional taskings to complete during the extension period.
- The Committee confirmed the meeting dates for the remainder of 2002 and agreed on the meeting dates for 2003 as indicated below.

2002	2003
--	January 22-23
April 24-25	April 23-24
July 9, 10, 11	July 9-10
October 23-24	October 22-23

- In response to the issue of compiling a list of flammable items in airplanes that were certified but would not now pass flammability standards, the Committee voted 9 to 5 in favor of compiling the list. After further discussion, the Committee decided to resolve the issue by having the FAA provide clarification on what is needed to complete task 9.
- The Committee voted (with 3 abstentions) in favor of creating Working Group 10 to review small transport airplanes.
- The Committee directed Working Group 8 to determine how flight crews (e.g., flight attendants) might be included in training other than in the 6-hour training category. The Committee also advised the WG to remove the reference to hours from the appendix to the

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training document. This was based on the Committee's having determined at the July meeting to emphasize performance-based rather than time-based training.