

**AGING TRANSPORT SYSTEMS RULEMAKING  
ADVISORY COMMITTEE**

**Meeting Minutes**

**Date:** January 17-18, 2001

**Time:** 9:00 a.m.

**Place:** Airbus Training Center  
Miami, Florida

**Administrative**

Mr. Kent Hollinger, the Aging Transport Systems Rulemaking Advisory Committee (ATSRAC) Chair, called the meeting to order at 9:10 a.m. Mr. Charles Huber, Executive Director, read the advisory committee briefing statement, after which Mr. Hollinger noted that Mr. Jim Shaw has been appointed vice chair and the committee looks forward to his continued participation. Following introductions, Mr. Hollinger introduced participants representing Gulfstream, Regional Airline Association, National Air Transport Association, PEMCO (an STC holder) and others that, although not currently members, may play a role in follow-on activities of the committee.

After introductions, the agenda was briefly reviewed (Handout 1). Next, minor revisions were proposed to the October 11-12, 2000 meeting minutes (Handout 2). It was moved and seconded that the minutes be accepted, with minor revisions.

**Training Working Group Presentation**

Mr. Paul Lapwood gave a presentation on Task 5 -- Training (Handout 3). Following an introduction of the working group members, Mr. Lapwood provided an overview of the task, including the curriculum and lesson plans and how they are used. Mr. Lapwood noted that the curriculum and lesson plan is complete, but may have to be revised in light of the intrusive inspection report. Mr. Lapwood estimates that each of the six modules entails 6 hours of training per aircraft type, noting that the more experienced individuals would require fewer hours. The training would be adjusted for the type of airplane and the knowledge and skills of the students. Mr. Lapwood stressed the importance of the course being taught by competent instructors with competent experience.

Participants questioned course content focusing on the framework and curriculum. The members were concerned about training, for example, to address HIRF and lightning and more modern technology. Another participant asked who would be writing lesson plans and how would they be made available to offshore maintenance organizations? Mr. Huber mentioned that that level of detail is not included in the product -- an operator or repair station is expected to provide that level of detail. The FAA would develop an advisory circular that would identify how one would get this level of detail.

Mr. Hollinger cautioned the group that the discussion is leading to implementation of the training plan. Mike Nancarrow asked if we could expect a lot of change to the training report as a result of the intrusive inspection report. Mr. Hollinger responded by asking that the group withhold discussion on any needed changes as a result of the intrusive inspection report until completion of the discussion on this and other reports. The group would then focus on the intrusive inspection report last, including the affect it has on the other reports. He then asked if there were any other questions concerning the training report.

In response to concerns around changes to the training plan, HIRF concerns, etc., Mr. Fred Sobeck suggested that the FAA could publish the curriculum in the Federal Register to allow industry the opportunity to comment. Mr. Huber then suggested incorporating the material in an advisory circular suggesting that this process would become clear during discussion of the implementation plan tomorrow. For example, taking the training program and incorporating it into an advisory circular provides the opportunity to incorporate some of the comments that may not be contained in the actual recommendation.

The discussion continued around wiring awareness and housekeeping issues as it pertains to the hours required for training. Paul Lapwood reiterated to the committee that the number of hours should not be the focus. The training should be tailored to customer needs and the customer would decide on appropriate training modules and number of hours needed in consideration of the participants' level of experience or lack thereof. He further mentioned that the Air Transport Association has scheduled wiring training for July 2001.

In response to a comment that perhaps the module for housekeeping should be expanded, Mr. Hollinger reminded the group that the recommendation is that the instructor would have to consider the skill level of each class and tailor the training to the needs of the participants.

Mr. Sobeck mentioned that we need to understand that this is a training module for those who must accomplish the work. He stressed the need for "management" to understand that wiring has to be given more attention noting that time is needed for training in wiring and to accomplish the work on wiring systems. Another participant echoed Mr. Sobeck's assertions and mentioned that there has to be a change in mindset. Mr. Paul Lapwood mentioned that these points are emphasized in the recommendation. The group agreed that both the repair station and the operator would play a major role in training to ensure that it is adequate for the individuals conducting the work and the type and operation of the aircraft.

In response to Mr. Hollinger's call for other comments related to the training report, an individual asked who would be responsible for updating the document suggesting that it is a living/breathing document. The Chair responded that the committee would forward it to the FAA where it would become a FAA document. Mr. Sobeck, responding to a comment as to how the document would be distributed, informed the group that the

FAA's method of compliance would be in the form of an advisory circular—the module would be something that we would consider transforming into an advisory circular.

Mr. Hollinger then moved the group to discussion of the intrusive inspection report with regard to task 5 (training) and task 3 (maintenance). He referred the group to an email message concerning an approach to considering the intrusive inspection report. In summary, the intrusive inspection working group was tasked to make specific recommendations to the training and maintenance working groups. The question to this body is whether the recommendations from the intrusive inspection working group would preclude us from approving the work on task 5 with conditions that there is further work that will continue to be done. Mr. Hollinger noted that the proposal from his email (to set the framework) was that after discussion of the working group recommendation, we would accept with caveats (if necessary) the working groups proposals with the stipulation that the FAA considers the affect of the intrusive inspection report conclusions and recommendations. Such a statement would be included in the transmittal letter to the FAA (similar to what was done with recommendations from task groups 1 and 4). The FAA could then include in future tasks to ATSRAC a request to review recommendations in the intrusive inspection document in addition to the new tasks of the working group.

Mr. Jim Shaw supported the chair's recommendation with the caveats listed to move the recommendation forward. After some discussion around the need to harmonize the outcome of the recommendations and integration of all recommendations into training, Mr. Tony Harbottle moved and another member seconded that ATSRAC accept the task 5 report, including additional input (HIRF lessons learned, ALPA comments, intrusive inspection report, etc.) as the document evolves.

Mr. Sobeck agreed with the motion emphasizing the FAA's need to hear the briefings from the other working groups, and any controversial issues that might surface would have to be discussed during a meeting of the committee. His point to the group was that the FAA should not be put in the position of making a decision without the benefit of committee discussion of controversial issues between working groups.

Mr. Hollinger asked for a show of hands of all those in favor of the report. All were in favor of forwarding the final report concerning Aircraft Wiring Systems Training Curriculum and Lesson Plans to the FAA, along with the recommendations of the intrusive inspection report and other comments.

### **Maintenance Working Group Report**

Mr. Tony Harbottle provided a presentation on Task 3 (Handout 4). He began the presentation stating his intent to show the delta of the working group activity since the October meeting. He further stated that the full logic is presented in the final report. He reminded the members that the most significant task of the working group was development of a logical process to enhance maintenance programs for the in-service fleet to place more focus on issues connected with aging wiring. As pointed out by Mr. Harbottle, a second significant task was to develop logic guidelines appropriate for future

aircraft types, future models. With the exception of Chapter 11 addressing recommendations from the intrusive inspection working group and comments from the Air Line Pilots Association, the working group considers its report complete.

Mr. Harbottle pointed out that the comments from ATSRAC members concerning the enhanced zonal analysis procedures have been addressed and changes to the flow diagram have been incorporated into the final report. In particular, he noted that a new question has been added in the EZAP logic to address the concern that even in the absence of combustible material an arcing event could impact continued airworthiness if adjacent systems are flight critical. He pointed out that the working group has also added enhanced guidelines on materials considered combustible. Further, a note has been added that enhanced logic be used for flight compartment and avionics bays, irrespective of potential for combustible material. Finally, Mr. Harbottle emphasized the importance of “awareness enhancement” as an integral part of follow-on activities if the recommendations of the working group are to lead to improvements in the condition of the aircraft.

Mr. Harbottle walked through the revised zonal analysis procedure and responded to questions and concerns raised by the committee and other attendees. The committee questioned whether chafing would be picked-up during a visual zonal inspection and whether the logic would take into account combustible material.

Following the lunch break, Mr. Hollinger asked that Mr. Harbottle finish his slides of the presentation and then the floor would be open for general questions on his report and specific discussion and questions on the flow diagram.

Mr. Harbottle expressed the working group’s desire to address the recommendations of the intrusive inspection working group and any comments or concerns raised during this ATSRAC meeting and submit its final report to the Committee by April. He felt that the working group could address some concerns via e-mail, noting that perhaps one more meeting would be required. After some discussion around what still needs to be accomplished, Mr. Chuck Huber reminded the group that we should not spend too much time massaging the report as this is not the final phase, but rather use this opportunity to move forward with this significant effort. Mr. Harbottle concluded that the group did not see any changes to the logic as a result of the recommendations from the intrusive inspection working group, but did believe that explanations or responses to the recommendations are needed.

Jim Shaw pointed out that while some of his comments are minor, he does have difficulty with 6.1 scope which says that the findings from task 1 activity (including the intrusive inspections) confirms that there is little evidence that pure aging phenomenon is causing deterioration that might lead to an airworthiness concern. Mr. Harbottle responded by stating that the longer an aircraft is in service the more opportunity there is for damage to wiring due to maintenance contamination. The point being that wiring degradation is not purely an aging issue, but is the result of contamination during maintenance that was not properly cleaned. Mr. Harbottle pointed out that the outcome of the wiring inspections

indicates that corrosion is not the big issue. Mr. Huber asked the question whether it is purely aging related deterioration or contamination during maintenance, does it change the way you inspect these wires—does it matter? Mr. Harbottle responded that it does not matter; we will have detailed inspections looking for cracks and deterioration.

The committee continued to discuss the language in the first paragraph of chapter 6 of the report. The committee expressed concern with language indicating that there is no age related degradation, and settled on the need to revise the paragraph as it pertains to the definition of aging. The committee members recognized that leading edge technology is not yet fully developed to address the breakdown or deterioration of wire over time and that work should continue in the areas of nondestructive testing and arc fault circuit interrupters. Mr. Ed Block reminded the committee that he had previously submitted a proposal in his December dissenting opinion with regards to the FAA nominating a National Resource Specialist and not using defective wiring in new aircraft. After some discussion around which dissenting opinion and whether it is included in the intrusive inspection report, Dr. Smith informed the group that he would be covering this item in his briefing.

After some discussion around the importance of using “suitable” terms that cannot be misinterpreted, the chair instructed the working group to use the original terminology “awareness enhancement” instead of “cultural revolution” to describe the need to overcome learned complacency. A committee member moved and it was seconded to accept the report as is with the inclusion of recommendations from the intrusive inspection working group to be considered in the future, plus any other comments and follow-on work from other working groups. All were in favor of accepting the report.

### **Intrusive Inspection Report**

Dr. Chris Smith briefed the committee on the final product of the intrusive inspection working group. Copies of the report (handout 5) were distributed and Dr. Smith noted that a compact disc (CD) was mailed out to the membership. The CD included a cover letter explaining changes to the report since October 2000, discussion of the dissenting opinion submitted, and an Air Force Report received without sufficient time for the working group to consider or endorse in its final report.

Dr. Smith gave special recognition and acknowledgement to the significant contributions of working group members who were responsible for execution or oversight of all activities enabling the generation of the report. He also recognized the support of FAA affiliates and contractors, adjunct members, inspectors, laboratory personnel, and advisors.

He briefly described the tasks of the Aging Systems Task Force. The group was charged to look at some 80 in-service aircraft extensively, but not particularly intensively. That being recognized as a deficiency, the intrusive inspection task force was charged with looking at fewer, retired aircraft a lot more intensively and were able to do with those aircraft things that you obviously could not do with in-service aircraft. Specific

objectives were to assess the state of wiring in aging aircraft and to assess the adequacy of visual inspection. He described the rigorous protocol addressing 14 characteristic locations across several aircraft types and where possible locations corresponded to the non-intrusive inspection protocol made some comparison with the non-intrusive inspection. The enhanced inspection was intended to assess insulation electrical properties; insulation mechanical properties and other degradation related parameters – a lot better assessment than with visual inspection alone. He then discussed in some detail the Del Test findings, reminding the committee that the details are contained in the report. Numerous other tests conducted were also discussed such as Eclipse and laboratory tests, manual bend testing, modulus profiling and others that focused on degradation related phenomenon.

Following the brief overview of the process used to conduct the intrusive inspections, Dr. Smith focused on Chapter 7, Conclusions and Recommendations. He responded to questions and concerns raised by committee members, emphasizing that visual inspection and maintenance will not be enough. The final report reflects comments and recommendations of ATSRAC members. The most significant changes include: (1) updated laboratory results; (2) Chapter 7, recommendations are more specific and directed to specific organizations (The applicability and limitations of the recommendations are discussed); (3) Chapter 7 also includes a section on research and development recommendations; and (4) Chapter 6 contains a discussion of the seven “reportable significant conditions.” The manufacturers’ responses are also included.

In response to a question concerning what appeared to be an inconsistency between the recommendations in chapter 7 and the summary provided, Dr. Smith pointed out that the remedial actions that can be applied now or in the near future are identified in items 5-1 through 5-6. The long-term research and development actions are in a separate category and will be taken to mitigate wiring problems in the future. After some discussion, the committee decided to use the same words that were used in the presentation, as they were more direct.

Mr. Collier asked what is next in terms of correlation between metrics of breaches per 1,000 feet—small breaches to significant breaches of airworthiness. Dr. Smith replied that the breaches per 1,000 feet are suggestive of the fact that we have an issue that we should be addressing aggressively. He did not believe the FAA would be using that conclusion to write rules and regulations, but rather as encouragement to press on with the established research program.

In response to another comment concerning nondestructive testing methods and existing guidance material provided by the FAA, Dr. Smith pointed out that the FAA is encouraging the aviation community to use NDT resources currently available and extend them into their programs. For existing reliability programs that use electrical testing equipment to validate the integrity of the wire, consider modifying the use of that equipment to address safety issues as well.

Mr. Block asked if his dissenting opinions would be incorporated into the report. After considerable discussion and input from a number of participants, the committee agreed to include in an appendix, Mr. Block's October opinion and the working group's response. The committee also agreed to include Mr. Block's 12 January 2001 opinion as part of the transmittal of the report to the FAA. The committee then agreed to forward the report to the FAA after editorial changes were incorporated.

Mr. Hollinger then postponed discussion of implementation and the ASTF review of intrusive investigation for discussion tomorrow.

### **OEM Lessons Learned Communication**

Mr. Mike Nancarrow briefed the committee on a proposal to address Design Lessons Learned (handout 6a) and then turned to Mr. Patrick Glapa for a presentation of Airbus Lessons Learned (handout 6b). The proposal presented by Mr. Nancarrow had been briefed to the committee at previous meetings. He reiterated that the proposal had been developed and approved by the FAA in response to comments made in the July meeting by Ms. Erickson. Following the brief overview setting the scene, Mr. Glapa talked about the Airbus plan. Boeing has done something similar and Mr. Don Anderson spoke of some of the communications recently sent out by Boeing.

Mr. Huber advised the group that the FAA had conducted an independent evaluation indicating that there were no significant findings causing or warranting immediate airworthiness action.

Both Boeing and Airbus reported their service history reports and actions to date. The ATSRAC action to widely distribute the information to operators has been accomplished. Mr. Vic Card observed that the actions to date by Airbus and Boeing have resulted in an improved product and improved internal processes. As a regulator, he posed a question "how do we ensure other part 25 manufacturers will work to the same level of safety?" Mr. Hollinger responded that his question is a great segway into the next agenda item. Another individual asked if there were plans for a lesson's learned exercise based on the intrusive inspection report similar to what was done for the non-intrusive inspections. The response was that the intrusive inspection report would be widely distributed for consideration by the operators. Boeing may not specifically put out lessons learned, but the information will be passed on to the operators.

### **Documentation of Design Best Practices**

Mr. Hollinger reminded the committee that he had raised this issue back in October 2000 and had tabled it for the current meeting. The concern is that improvements are being made and Boeing and Airbus have agreed to change their design handbooks or guidance; however, there is no consolidated documentation that can be pointed to as ATSRAC changes and lessons learned that can be made public. The document would ensure that all engineers, STC holders, could use these. The question is do we want to create such a

document and where would such a document reside. Should it be an SAE document, advisory circular, or some other document?

Mr. Huber offered a suggestion to update SAE document 5088-1, which already defines some best practices. ATSRAC could submit a laundry list to the FAA for inclusion in that document. Mr. Sobeck questioned how all manufacturers would know to consider this document. Another participant asked if there are existing advisory circulars that cover this subject that could be updated. The committee continued discussion of pros and cons of using advisory circulars, SAE documents, MIL specifications, etc., as alternative locations for this information. There also was discussion on whether these practices should be mandatory. Mr. Hollinger summarized the committee's desire to incorporate chapter 11, portions of advisory circular 43-13, and 5080.81 into AC 25-16. After tomorrow's discussion of new tasks, the committee would decide whom this work would be assigned to.

### **Continuation of Wire Type Discussions**

Mr. Hollinger opened this discussion reminding the committee that at previous meetings there had been wire-type discussions that were tabled concerning advisory circulars that advise against mixing wires. The committee asked FAA to find out the original and current philosophy of the advisory circulars.

Mr. Huber explained that advisory circulars do not contain preamble material making it difficult to research the history of an advisory circular. Chuck Huber's comments paraphrased: Additionally, the authors of the advisory circular are no longer with the FAA. However, with regard to AC 25-16 concerning mixing of wire types, Mr. Huber pointed out that the statement follows discussion on kapton wire. He further stated that the intent was not necessarily around mixing wire types and bundling properly installed where wires run parallel to each other with wire ties on them. In this case, the difference in movement of wire is very limited. He stated the intent was meant more to address wires at angle to each other.

An example was shown in the intrusive inspection report where a kapton wire and another type wire at 90 degrees that was not properly tied. Another reason for the statement in AC 25-16 is to get individuals to think ahead on how wires are installed in certain locations. The intent was to minimize mixing different wire types that have different abrasion characteristics. This is not to say that it is an unsafe condition--it must be installed properly. We are not stopping here. We have learned a lot from the intrusive inspections and the experts here in ATSRAC, and are continuing a research and development program to assess this directly. Additionally, a number of manufacturers have different test methods of wire abrading against each other. One of the problems is that no one has figured out the best test method representing what we see in the real world.

There was extensive discussion around the history of mixing wires and advisory circular 25-16. Mr. Hollinger recaptured discussion from the July 2000 meeting that included

discussion on whether or not ATSRAC should be the body to address the subject of mixing of wire types. At that time, the committee decided to table the discussion until ATSRAC receives the intrusive inspection results. The committee continued discussion on this issue, stating that the intrusive inspection was inconclusive on the subject of mixing wires thus this is still an open issue. The committee agreed that the FAA should pursue research and development in this area. In response to a question as to what ATSRAC proposes with regard to AC 25-16, Mr. Shaw stated that ATSRAC could neither refute nor support the AC without more data.

Mr. Hollinger completed the session, stating that agenda items concerning the SSID Program and ASTF review of intrusive investigation would be covered on the second day.

Mr. Hollinger opened day two of the meeting noting that the results of the previous day brings to conclusion the initial taskings of the first two years of ATSRAC. He commented on the tremendous amount of input from various sources of expertise noting manufacturers, associations, mechanics, pilots, various regulators, independent associations, and airlines. He thanked everyone very sincerely for the time and effort. ATSRAC work was recognized as being a voluntary effort that was done outside of regular jobs, and to accomplish all this work in addition to all the other tasks really was a tremendous accomplishment. He also thanked the public that attended the meetings on a regular basis who made a lot of valuable input.

Mr. Hollinger set the stage for the work of the day picking up agenda items from yesterday. He indicated that the committee would change its mindset from reviewing working group products and giving guidance to the working groups to implementation. He introduced Fred Sobeck who would provide lessons learned from implementation of the structures program.

### **Lessons Learned from the Aging Structures Program**

Mr. Fred Sobeck, National Resource Specialist for the Aging Aircraft Program, briefed the committee. (handout 7). He spoke of the Aging Aircraft Task Force (not unlike ATSRAC) a group composed of regulators, airlines, and OEM's all working together toward a common goal. He spoke of general principles such as clear definition of the problem, including expectations and impact of external drivers. He also stressed the importance of management commitment, both within FAA and industry. He spoke of use of airworthiness directives and when they are necessary. Additionally, he spoke of the complexity and enormity of the program and the importance of partnering, voluntary initiatives, and compliance with jointly developed rules and guidance.

In response to a comment concerning guidance versus regulatory actions, Mr. Sobeck explained the baseline program and the airworthiness directives process. He pointed out inefficiencies of any one process, explaining the rigid, labor intensive AD and rulemaking processes as opposed to the operating rules and the flexibility of the operations specifications.

A committee member asked what are the obvious differences between the Aging Structures Program and SSID program. Mr. Huber responded that one major difference is that we do not intend to implement the program by airworthiness directives to get compliance.

### **Aging Systems for All Part 25 Airplanes**

Mr. Huber opened the discussion acknowledging that the focus of ATSRAC to date has been on heavy transports, primarily because it was the highest priority. Now that the data has been collected, the next step is working towards implementation and part of that is determining who should be required to use the data. Clearly it is the aircraft operated under Part 121, but not so clear are the airplanes operated under Part 135 and commuter airplanes. The last recommendation from the NTSB essentially recommended review of aging systems on commuter airplanes. The FAA has interpreted the recommendation to mean a review of the smaller part 25 airplanes. We agree with the Board and believe we need to address this issue. A number of operators of small airplanes have been invited to attend this meeting today to help in the discussion. I invite discussion on smaller airplanes; do we need an intrusive inspection program on these airplanes?

Mr. Sobeck pointed out that if there is a part 121, 125 or 129 rule change, any airplane operated under part 121 whether its ten-passenger certificated to part 23 or SFAR 41, it would be affected by the part 121 rule change. So part 121 operation is no longer airplanes operated at 75,000 pounds maximum gross weight.

Another individual asked if we would be amending part 25 or an operating rule? Mr. Huber responded that we are considering certification and operating rules and SFARs, which will require manufacturers to revise type design or certification data. The commenter, while acknowledging the safety improvements, expresses concern that in changes to operating rules, the costs roll down to the lowest denominator, the part 91 operator. Numerous concerns were raised around the differences in aircraft type and operating and maintenance criteria. Mr. Huber acknowledged that from a data driven standpoint, data has not been collected on smaller part 25 airplanes, and posed the question do we need to?

Mr. Hollinger explained for the group that when the tasks began two years ago the focus was on eight models using a set of criteria and a definition of aging aircraft. At the time the committee decided to look at aircraft beyond their design service objective (20 years). The committee also felt the certification process, CMRS, etc. would take care of the aircraft for the first 20 years and the committee would look beyond that point. The tasks up to this point have focused on the eight models. The discussion today is extending our vision to other things and the appropriateness of this body to address the new tasks. Discussion ensued around the possibility of extending the standard maintenance practices discussed yesterday to all aircraft. There was also concern around other priorities and resources available to support this effort. Some members expressed concern for going beyond implementation of the existing recommendations. Another

member recommended that the committee first listens to the proposed new tasks and then decide how much ATSRAC might want to take on.

### **FAA Enhanced Airworthiness Program for Airplane Systems Overview and New Taskings for ATSRAC**

Mr. Huber briefed the committee on the agency's Enhanced Airworthiness Programs for Airplane Systems (handout 8). He reiterated that a lot of what was discovered in the Aging Systems Program is not necessarily due to pure age degradation. EAPAS encompasses maintenance, installation and pure aging aspects or phenomenon. The ATSRAC taskings are completed and we are transitioning to an implementation phase that will be embodied in EAPAS. The committee entertained discussion around whether there is agreement that the wiring concerns go beyond aging systems and thus supports an enhanced airworthiness program.

Mr. Huber presented the framework of EAPAS noting that it will include essential corrective actions such as airworthiness directives. There are near-term safety improvements that can be accomplished quickly and provide safety improvements using the existing system; and long-term safety enhancements that institute enhanced methods for airworthiness of airplane systems. There are also research and development aspects of this program. Specifically, the FAA will issue advisory material and promote better maintenance procedures, increasing knowledge through training and guidance for FAA engineering and sharing information with industry and other aviation authorities. Near term actions are expected to be complete by the end of 2001. Long-term actions include rulemaking and implementing guidance for design, certification, maintenance, continued airworthiness, training and wire reporting.

Mr. Huber then discussed in general the proposed future tasks of ATSRAC once it is re-chartered through January 2003. The committee discussed in detail the proposals and how the work of OEM's and the Aviation Rulemaking Advisory Committee might be considered in this effort. The concern is that ATSRAC understand similar actions ongoing within the FAA and in other advisory committees.

Mr. Huber also mentioned that the FAA is in the process of determining exactly what it will do with regards to the recommendations from the Office of Aviation Systems Safety. However, in regards to subchapter 97, common JASC codes standpoint—we will be implementing those along with the ATA and the six digit format. From the coding that is used in the SDR system, we are committed to using subchapter 97. We are taking new data elements and adding them to the list in the SDR rule. The advisory circular will identify a method of a carrier to report wire failure problems. It will not be a requirement at this point but may be in the future. We are looking at ways to do trend analysis on reports that we get in. That is predicated on getting good data and we have to determine whether the data received under the SDR rule is good enough to conduct trend analysis. This effort will be part of our R&D effort. We also have three or four programs on arc fault circuit breakers. We are also putting together a test program to look at aging circuit breakers. This is not an exhaustive list. We are also looking at developing guidance on

what the FAA feels are appropriate wire separation performance requirements. Mr. Huber stated that these are what he sees as possible new taskings to ATSRAC. The charter will be extended to January 2003--which coincides with when we would like to see

NPRMs and other activities. January 2003 may seem like a long time; however, it would be faster than action on the fuel safety rule. There is a lot of work to be done.

In response to a question from a committee member concerning special regulations for the eight models, Mr. Huber responded that it would apply to all models. Some models already have a MSG-3 revision program. The logic would have to be added to it. If a maintenance program has not been developed using the MSG-3, of course it will require a lot more work. Mr. Sobeck added that certain airplanes have never had an MRB and are not subject to MSG. For those airplanes, the manufacturers will have to develop an enhanced zonal inspection program that may require establishment of an MRB for that airplane. Another commenter suggested that it would be difficult if an MRB has never been done on an airplane. Mr. Hollinger suggested to the group that it might be getting into discussion of a working group, reminding everyone that the intent of the discussion is not to solve the problems.

The committee then discussed whether the new taskings should be handled in ATSRAC or ARAC. Industry expressed concerns around duplication of efforts being done in both ATSRAC and ARAC. One committee member expressed concern that industry would not like to see the FAA head down a path that is not harmonized with Transport Canada and the Joint Aviation Authorities (JAA). He specifically asked that the authorities work together on this effort. He further pointed out some of the differences between the FAA and JAA systems such as STC/OEM linkage. Mr. Huber assured the group that this effort would be harmonized. Mr. Huber then discussed the process and schedule for developing the rulemaking and advisory material. He emphasized that ATSRAC would be expected to develop reports that the FAA would use to develop the regulatory documents. He also presented the schedule for the taskings.

Mr. John Hickey responded to a committee member's question "what happens if ATSRAC does not accept the new tasks?" He emphasized the need to get industry involvement stating that the agency does not have all the answers; recognizing that industry has the expertise and that the agency fully recognizes the difficulty of doing these tasks--but this is the necessary evil. The consequence of not supporting this effort is that we, the FAA, will have to do this ourselves. While we can get your input during the comment period, we do not have all the knowledge that you do. Mr. Hickey responded that the briefing essentially is a high level, overall far reaching strategy of how the FAA thinks it needs to change things over the next 5 years. He further emphasized that there will be changes in the design, operation and maintenance of airplanes. We will try to make these changes within the confines of the existing system, but we are going to change things. We have outlined a proposal that addresses the future airplanes through rulemaking, but there will be changes to operations specifications as well. If we do not get your support, we will do it ourselves—and you probably will not like that.

The committee members expressed the need to receive the actual tasks and discuss them with their respective management—understanding the schedule, commitment and resources needed to accomplish the tasks. They further discussed the possibility of using existing working groups to accomplish follow-on tasks and the need to develop an overall strategy. Mr. Hollinger summarized what he believes will happen in the next few months—

- General concurrence of the new tasks today that ATSRAC would be willing to accept the new tasks
- The FAA will issue formal tasks
- ATSRAC will formally accept/decline (or at least portions of) the tasks
- Add new members as appropriate to the committee
- Define the working groups so that they know their taskings
- Select working group chairs and members
- Working groups would meet, make assignments, and accept schedules
- Working group chairs would make presentations to ATSRAC in April

Mr. Huber asked that the committee members review the operating procedures, which covers establishing working groups and roles and responsibilities.

Following lunch, Mr. Hollinger reminded the group that FAA is looking for concurrence that ATSRAC would be inclined to accept the new tasks and asked for any discussion. The group also suspended earlier in the day the discussion on whether there should be an ATSRAC B and whether back-to-back meetings would be useful. Another member suggested another meeting to discuss the terms of reference before deciding to accept the task. Several members expressed concern for the committee's ability to complete the eight steps above within a very short timeframe, particularly with respect to covering so many issues via email. Mr. Hollinger suggested and the committee members discuss holding a special meeting in February provided the tasks are made available in advance of the meeting. The goal of the meeting would be acceptance of the tasks and discussion of the eight items listed above, new members, defining working groups and considers volunteers interested in participating on the working groups.

Mr. Nancarrow reiterated the need for an integration plan to ensure the success of these new tasks, recognizing that the new tasks are more complex than the work over the last two years. He suggested discussion of an integration plan during the April meeting.

In response to concerns raised by another committee member, Mr. Sobeck explained that there is a major/minor working group that has not presented its final report to ARAC and we may want to consider what they have done and consider them for possible tasking. Mr. Hollinger then deferred discussion of ATSRAC A/B until the April meeting when the committee will have a better understanding of the taskings. He invited RAA, ATA, TC representatives, NATA to attend the April meeting where we will discuss future members. Another member recommended inviting ARAC members as well.

Mr. Hollinger reopened earlier discussion on whether the ASTF working group should review the work of the nonintrusive inspection or should new tasks be established on this issue. The consensus of the group was to have ASTF continue this effort.

### **Wire Reporting Discussion**

Mr. Hollinger then reopened discussion from an earlier meeting on Wiring Codes. He noted that this has been an item on the agenda for the last few meetings and that it was complicated by the FAA position on JASC codes rather than ATA codes when reporting SDR data. There have been meetings on this subject since the last ATSRAC meeting. The discussion today is intended to be an update to the committee on where the FAA stands and where we are headed.

Mr. Sobeck stated that the FAA does not intend to provide a briefing to ATSRAC at this time, but rather sometime in the near future. He stated that there was a public meeting in December 2000 concerning an advisory circular that is intended to go along with the SDR rule. The public meeting enabled the FAA to understand the concerns of the aviation industry. We have all the comments and have not dispositioned them yet. We have not revised the advisory circular to reflect comments received. From that standpoint, it would be inappropriate for the FAA to brief the committee at this time. Once the advisory circular is complete we can then brief ATSRAC.

Concerning the SDR meeting, Mr. Collier stated that the fundamental difference between the FAA and industry is that a lot of industry's concerns are addressed in the preamble. However, when complying with a rule, industry looks to the four corners of the advisory circular. In speaking with an FAA official last month, Mr. Collier was advised that the draft advisory circular should be available in about one month. The draft advisory circular would be available for comment. Industry will comment at that time. The main issue is interpretation of the advisory circular, which could be very costly if every structural crack must be reported. Mr. Hollinger recollected that ATSRAC was more concerned with the coding, JASC vs. ATA coding. The task of this group is to look at reporting of wiring problems. Mr. Collier stated that industry did not get into this issue because the public meeting was held to go over the industry assertions with regard to costs.

Mr. Collier recollected two other meetings that included Delta Airlines which resulted in a determination that ATA would be able to amend its codes in accordance with subchapter 97. The meeting did not resolve what would happen with the JASC codes. Mr. Hollinger restated that the committee had a discussion and a vote to ask ATA to change its code. The committee came to a consensus that it would be the third and fourth digit, second grouping and that ATA would proceed along those lines until such time as the SDR rule came out with the JASC codes in it. Where does that leave this committee? We had a task to improve wire reporting using a database, we had a method of doing that and now that method is perhaps impractical. Where do we go from here to try to fulfill that tasking? Mr. Sobeck stated that the JASC codes include a subchapter 97. Following

a more detailed explanation from Ms. Carol Giles, Mr. Hollinger emphasized that this is good news.

### **Action Items**

Mr. Hollinger reviewed the action items from past meetings and completed new action items as a result of this meeting. The committee tentatively scheduled future meetings (see action items below).

### **Adjournment**

The meeting adjourned at 3:20 p.m. on January 18, 2001.

Kent Hollinger  
Chair  
Approved:

## **ACTION ITEMS AND KEY DECISIONS AND CONCLUSIONS**

1. Contact engine manufacturers about wiring and have them provide someone to make a presentation at the **April 2001** meeting. (Bob Robeson) **Original action from July 2000 meeting.**
2. Future meetings: 2/8-9/01 (Postponed to 3/13/01); 4/25-26/01 (Bessie Coleman Room); 7/25-26/01; 10/24-25/01; 1/23-24/02; 4/24-25/02; 7/24-25/02; 10/23-24/02.
3. Research possibility of including handouts from ATSRAC meeting on the web as part of meeting minutes. (Courtney)
4. Prepare “Key Decisions and Conclusions” reached at ATSRAC meeting in advance of draft meeting minutes. (Courtney)
5. Research possibility of placing ATSRAC reports on the website. (Courtney)
6. Task 5 – Aircraft Wiring Systems Training Curriculum and Lesson Plans Report: The ATSRAC unanimously agreed to forward the report to the FAA with comments.
7. Task 3 – Maintenance: ATSRAC unanimously agreed to forward the report to the FAA with inclusion of maintenance recommendations from the Intrusive Inspection Report, and ALPA and other comments.
8. Intrusive Inspection Report – Working group instructed to correct the title of the October 2000 response to the dissenting opinion and include both the dissenting opinion and the response as an appendix to the report. The January 12, 2001 dissenting opinion will be included in the cover letter transmitting the report to the FAA. The working group was instructed to make other editorial changes.
9. Following extensive discussion on best practices regarding wire-type, ATSRAC agreed to continue research and development effort on mixing wires.