AIRWORTHINESS DIRECTIVE IMPLEMENTATION
AVIATION RULEMAKING COMMITTEE

FINAL REPORT
August 2011

Prepared for

Ms. Margaret Gilligan
Associate Administrator
Aviation Safety
Federal Aviation Administration
Washington, DC

AIRWORTHINESS DIRECTIVE IMPLEMENTATION AVIATION RULEMAKING COMMITTEE

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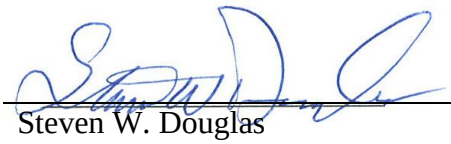

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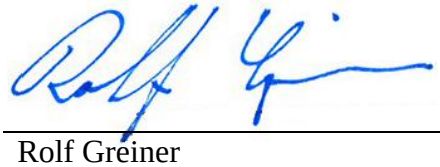

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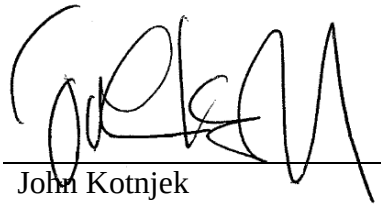

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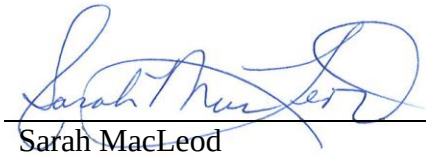

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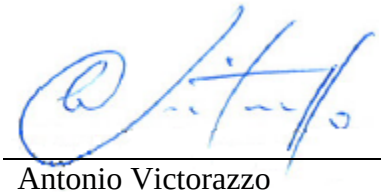

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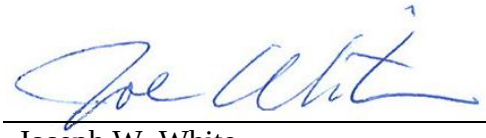

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Acknowledgment

The AD ARC would like to recognize Mr. James J. Ballough, FAA (retired); Ms. Carol Giles, FAA (retired), Mr. Dec Lee, formerly of Delta Air Lines; and Mr. Dave Lotterer, RAA (retired) who contributed to the development of the AD process changes presented in this report.

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LETTER FROM AD ARC CO-CHAIRS

August 20, 2011

Ms. Margaret Gilligan
Associate Administrator for Aviation Safety
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Dear Associate Administrator Gilligan,

In 2009, the FAA charged the Aviation Rulemaking Committee for Airworthiness Directive Implementation (AD ARC) to evaluate and address recommendations related to Airworthiness Directives (ADs) from the Independent Review Team and AD Compliance Review Team. The AD ARC completed its work and has prepared this final report. Its contents include a discussion of implementation proposals developed by the AD ARC working groups, FAA and industry implementation actions, and recommended follow-on activities.

The AD ARC implementation actions reflect diligent work by the AD ARC and its working groups. These actions are the products of careful deliberation by FAA and industry members, combining their collective experience in the aviation community.

On behalf of the AD ARC, it has been an honor and a pleasure to work on this important initiative. We are confident the implementation actions will improve FAA and industry AD development and implementation processes to ensure aviation safety while reducing the potential for fleet wide AD compliance issues.

Sincerely,

Terry McVenes, Director
Operational Regulatory Affairs
The Boeing Company
AD ARC Co-Chair

Ali Bahrami, Manager
Transport Airplane Directorate
Federal Aviation Administration
AD ARC Co-Chair

EXECUTIVE SUMMARY

BACKGROUND

This final report responds to the Federal Aviation Administration (FAA) Administrator's charter to evaluate and address the Airworthiness Directives Compliance Review Team (AD CRT) and Independent Review Team (IRT) recommendations regarding airworthiness directives (AD) processes[1]. The FAA Administrator chartered the Aviation Rulemaking Committee for Airworthiness Directive Implementation (AD ARC) to conduct this evaluation on August 20, 2009.

AD ARC DELIVERABLES

From December 2009 to August 2011 the FAA, airplane manufacturers, industry associations, and U.S. air carrier representatives participated in the AD ARC and/or one of its four working groups. The efforts have resulted in the preparation or publication of new or revised policy and guidance documents as well as associated training and familiarization programs for industry and the FAA.

Given the 2-year charter timeframe, the AD ARC worked within the framework of existing regulations. Of the many AD processes improvements, one of the most significant focused on ensuring only those actions necessary to address the unsafe condition are prescribed in ADs. Newly created criteria for identifying within service bulletins (SB) incorporated by reference in ADs the specific actions required for compliance (RC) will expand the use of existing maintenance programs in accomplishing actions that do not directly affect the unsafe condition.

The AD ARC developed new industry guidance to improve AD management processes and enhance effective AD implementation and compliance, including industry and FAA coordination. New documents emphasize FAA-internal coordination with appropriate organizations in reviewing and determining AD compliance. Other new documents will enhance the processing of alternative method of compliance (AMOC) applications and awareness of approved AMOCs.

[1]Airworthiness Directive 2006–15–15, Process Review Technical Report, A review of the development, implementation, and compliance determinations associated with AD 2006–15–15, June 3, 2009.

Airworthiness Directives, Process Review Technical Report, A review of Title 14, Code of Federal Regulations, part 39 airworthiness directives process for commercial airplanes, July 8, 2009.

Report of the Independent Review Team, Managing Risks in Civil Aviation, a Review of the FAA's Approach to Safety, September 2008.

Report copies are available at http://www.faa.gov/aircraft/air_cert/continued_operation/ad/ad_arc/

In addition, the AD ARC noted that with appropriate resources and on a limited basis, it is possible to apply some of the AD process improvements to existing ADs. Improvements to SBs, such as general notes and RC steps, could be used to support AMOCs to, or revisions of, existing ADs. In addition, communication and coordination process improvements between the FAA and industry will facilitate resolution of compliance concerns for existing and future ADs.

Overall, these improvements will enhance AD process efficiencies and effectiveness by—

- Ensuring more precise AD requirements,
- Reducing the need for and reliance on AMOCs, and
- Reducing risk of service disruptions caused by AD issues.

REMAINING ISSUES

Although the AD ARC evaluated and addressed all of the relevant AD CRT and IRT recommendations, its improvements should reduce but will not eliminate all of the risk for large-scale service disruptions. Applying certain AD ARC improvements to existing ADs that contain overly prescriptive actions may be cost-prohibitive. To a lesser extent, future ADs can expose the FAA and industry to other risks because both operate under a regulatory framework requiring strict compliance with manufacturer-developed SB steps incorporated by reference.

The AD ARC discussed the role an operator's maintenance program plays after installing an AD-mandated configuration change on in-service aircraft versus maintenance of the same configuration installed in production on the same make and model aircraft. The ARC recognized the role of the operator's maintenance program differs for the same make and model aircraft depending on whether the configuration change was incorporated in production or mandated by an AD. Title 14, Code of Federal Regulations (14 CFR) part 43 (which establishes general performance standards for maintenance) provides the operator authority to make determinations of continued airworthiness and make minor changes to the aircraft configuration. On the other hand, the current interpretation of 14 CFR part 39 (which establishes the process for issuing ADs to address unsafe conditions) does not recognize part 43 maintenance for compliance determinations and does not allow the operator to make those determinations on an identical aircraft configuration mandated by an AD. The ARC's process improvements should reduce, but will not eliminate this dichotomy.

Furthermore, as acknowledged by the AD CRT in its task 1 report, there are significant differences between part 39 and part 43 issues. The ARC's process improvements should reduce, but will not eliminate the negative consequences associated with issues that do not impact safety.

AD ARC Recommendation

The AD ARC recommends executing a communication plan to ensure its products are publicized and training is available to all stakeholders. Additionally, the ARC recommends monitoring the implementation and effectiveness of its products, including completion of any open issues. It has proposed a set of metrics and a case study, the analysis of which may identify a need to amend some of the guidance developed by the ARC.

Conclusion

The AD ARC has implemented significant improvements to the processes for AD development and compliance planning and determinations. The improvements should facilitate AD compliance and provide a greater level of flexibility to operators without reducing the high level of safety provided by the current AD system. As the improvements were made under the prevailing interpretation of part 39, future evaluations will determine their effectiveness.

The AD process improvements will not completely eliminate the exposure of industry and FAA to large-scale flight cancellations if operators fail to comply with ADs and part 39 requirements. Recognition that an operator's part 43 maintenance program requires airworthiness may further reduce this vulnerability.

AD ARC Implementation Action Deliverables

The following FAA and industry documents incorporate AD process improvements:

- FAA Order 8900.1, Flight Standards Information Management System:
  - Aviation Safety Inspector Decisionmaking, Volume 3, Chapter 60, Section 1 (April 23, 2011);
  - Aircraft Evaluation Groups, Volume 8, Chapter 2, Section 2 (June 20, 2011);
  - Aircraft Evaluation Group Outreach in the Airworthiness Directives Process, Volume 8, Chapter 2, Section 9 (June 20, 2011);
  - Requesting 24/7 Support for AMOCs , Volume 3, Chapter 59, Section 4 (April 12, 2011);
  - Processing Alternative Methods of Compliance Proposals to Airworthiness Directives, Volume 3, Chapter 59, Section 3 (April 12, 2011);
  - Processing an AMOC Proposal, Volume 3, Chapter 59, Section 2 (April 12, 2011);
  - Evaluating an Airworthiness Directives Management Process; Volume 3, Chapter 59, Section 1 (June 1, 2011); and
  - Risk Management Process, Volume 10, Chapter 3, Section 1 (January 10, 2011).

- FAA Order 8110.103A, Alternative Methods of Compliance[2] (September 28, 2010);
- FAA Order 8110.107, Monitor Safety Analyze Data;
- FAA Order 8110.37E, Designated Engineering Representative (DER) Handbook (March 30, 2011);
- FAA Order 8100.15A, Organization Designation Authorization Procedures (June 10, 2011);
- FAA AD Manual, FAA–IR–M–8040.1C (May 17, 2010);
- AC 39–9, Airworthiness Directives Management Process[3] (June 1, 2011);
- Draft AC 20–xxx, Design Approval Holder Best Practices with Regards to Airworthiness Directives[4] (June 13, 2011);
- Notice N8100.112, Placing Service Information in the Federal Docket Management System (September 28, 2010);
- ATA Specification 111, Airworthiness Concern Coordination Process[5]; and
- ATA iSpec 2200, Information Standards for Aviation Maintenance (May 2011).

[2] The FAA also issued FAA Order 8110.103A, CHG 1 on June 30, 2011.
[3] The FAA plans to issue a Change Notice to this advisory circular (AC) by the end of August 2011.
[4] The FAA plans to issue a final AC by the end of 2011.
[5] ATA plans to issue the updated ATA Specification 111 by the end of October 2011.

1.0 INTRODUCTION

1.1 BACKGROUND

Based on widespread flight cancellations in March and April 2008 as the result of compliance issues found during a Federal Aviation Administration (FAA) oversight audit of airworthiness directives (AD), Mr. Robert A. Sturgell, FAA Acting Administrator, formed the AD Compliance Review Team (AD CRT) to review (1) the circumstances surrounding the flight cancellations and the compliance issues associated with AD 2006–15–15 on MD–80 series airplane wiring (task 1) and (2) the entire AD process for commercial airplanes (task 2). Concurrently, Ms. Mary E. Peters, the Secretary of Transportation tasked an Independent Review Team (IRT) to examine the FAA's safety culture and its implementation of safety management. The IRT evaluated the FAA's AD process as part of its safety review.

In its final report to the Secretary of Transportation[6], the IRT presented 13 recommendations, 2 of which focused on the FAA's management of ADs. The AD CRT submitted two reports to the FAA Administrator detailing its two-part review. The task 1 report[7] on AD 2006–15–15 provided 4 recommendations and highlighted 18 areas in the AD process where the FAA and manufacturers should make improvements. The AD CRT also noted areas that required further study during its task 2 review. The task 2 report[8] on the AD process for commercial airplanes provided 12 recommendations and identified over 35 desired improvements. The AD CRT task 2 report also recommended the FAA and/or industry charter a working group or working groups as appropriate to urgently address the AD CRT task 1 and task 2 reports' recommendations.

1.2 AD ARC CHARTER

On August 20, 2009, Mr. Randall J. Babbitt, FAA Administrator, chartered the Aviation Rulemaking Committee for Airworthiness Directive Implementation (AD ARC). As outlined in the charter, the purpose of the ARC is to evaluate and address the AD CRT recommendations and those IRT recommendations relating to ADs. The charter specifies that the evaluation and implementation of the recommendations adequately consider the needs and objectives of all affected parties and recognizes implementation of recommendations may require rulemaking. The charter further specifies that ARC membership be balanced in viewpoints, interests, and knowledge of the committee's objectives and scope. In particular, membership, consisting of a 5–10-person panel, should represent airplane manufacturers, air carriers, FAA, and other affected aviation industry groups.

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[6] Report of the Independent Review Team, Managing Risks in Civil Aviation, a Review of the FAA's Approach to Safety, September 2008. This report is available for viewing/download

[7] Airworthiness Directive 2006–15–15, Process Review Technical Report, A review of the development, implementation, and compliance determinations associated with AD 2006-15-15, June 3, 2009.

[8] Airworthiness Directives, Process Review Technical Report, A review of Title 14, Code of Federal Regulations, part 39 airworthiness directives process for commercial airplanes, July 8, 2009.

The charter tasks the AD ARC to establish work groups to evaluate and address the AD CRT and IRT recommendations, develop a program plan and implementation schedule, and monitor the progress and status of working group activities. The charter also tasks the ARC to advise and provide written recommendations to its sponsor, Ms. Margaret Gilligan, the Associate Administrator for Aviation Safety. The charter specifies that the ARC co-chairs provide status updates to Ms. Gilligan at 6-month intervals from the effective date of the charter. In addition, the ARC must submit a final report to Ms. Gilligan detailing implementation actions and any recommendations by August 20, 2011. This final report presents the AD ARC's implementation and follow-on actions to include recommendations.

A copy of the charter is contained in appendix G to this report.

1.3 AD ARC Composition and Activity

In accordance with the AD ARC charter, the ARC is comprised of members of the aviation community from U.S. air carriers, FAA personnel from Flight Standards Service (AFS) and Aircraft Certification Service (AIR), U.S. and foreign airplane manufacturers, and aviation industry associations representing air carriers and repair stations. Although not participating as ARC members, the ARC informed engine manufacturers of the ARC's activities through the Aerospace Industries Association thus keeping the ARC membership to a reasonable number. The 11 ARC members are listed on pages ii and iii of this report.

To fulfill its tasking, the AD ARC formed working groups to evaluate and address the AD CRT and IRT recommendations. The ARC grouped similar AD CRT and IRT recommendations (recognizing there is overlap among the recommendations) and formed four working groups, each corresponding to a phase in the AD process, to evaluate those recommendations. The working groups were—

- Service Information,
- AD Development,
- AD Implementation, and
- FAA Organization/Procedures.

The AD ARC defined key objectives for each working group. The details of key objectives and working group assignments are in appendixes A–D to this report.

The working groups' membership representation generally parallels that of the AD ARC with expertise focused on the assigned area. In addition, the ARC invited representatives of foreign aviation authorities to serve as observers on certain working groups. Once established, each working group assigned a focal lead to direct and manage the implementation activities, coordinate activities with other working group leads on areas that overlap, and provide quarterly status updates to the AD ARC. Appendix E to this report contains a list of working group members and observers.

1.3.1 AD ARC Meetings

The AD ARC held its initial planning meeting on December 8 and 9, 2009, at FAA Headquarters in Washington, DC. The ARC subsequently held the following 2-day meetings:

Date	Location
January 20 and 21, 2010	Seattle, WA
March 9 and 10, 2010	Washington, DC
June 3 and 4, 2010	Seattle, WA
September 14 and 15, 2010	Arlington, VA
December 14 and 15, 2010	Seattle, WA
February 15 and 16, 2011	Dallas, TX
April 19 and 20, 2011	Washington, DC
May 17 and 18, 2011	Seattle, WA
June 21 and 22, 2011	Arlington, VA
July 7 and 8, 2011	Washington, DC

In addition, the AD ARC held monthly teleconferences in 2010 through August 2011. The ARC also held ad hoc teleconferences to discuss and resolve difficult issues. ARC program support prepared minutes of the ARC meetings and teleconferences and posted them to the ARC SharePoint site for ARC member review.

1.3.2 Program Plan and Implementation Schedule

The AD ARC established a program plan to document success for addressing each AD CRT and IRT recommendation and to manage timelines, as well as interdependencies among and between working group activities. The ARC's program plan focused on addressing the recommendations and implementing all actions by June 30, 2011. The ARC identified any actions that could not be fully implemented by June 30, 2011, or that require additional work in Chapter 3.0 Follow-on Actions.

AD ARC program support posted the program plan on the ARC SharePoint site. In addition, ARC program support periodically updated the program plan with information from the working group leads and presented quarterly progress updates to the ARC members. The ARC also submitted 6-month status updates to Ms. Gilligan as specified in the AD ARC charter.

1.4 Scope of This Report

This report has 5 chapters. Chapter 1.0 presents the background of AD ARC's tasking, charter, composition, and meeting activities. Chapter 2.0 discusses AD process improvements based on the ARC implementation actions and presents a flowchart of the

updated AD process. Chapter 3.0 contains a discussion the AD ARC's communication plan that includes planned meetings/seminars for FAA and industry to present AD process changes to the aviation community and metrics identified as follow-on actions by the ARC. In addition, this chapter discusses implementation actions not completed by June 30, 2011, and presents projected completion dates for those actions. Chapter 4.0 contains a table of recommendations from the AD CRT and IRT reports and the corresponding AD ARC implementation actions. Chapter 5.0 presents the ARC's conclusions on implementing changes to the AD process based on the AD CRT and IRT recommendations.

This report has 9 appendixes. Appendixes A through D present the record of each working group's assignments, activities, and proposed implementation actions, which were approved by the AD ARC. In addition, the outcome for each of the working groups' proposed implementation actions is confirmed or a description of how the actual implementation differs from the working groups' proposal is documented in these appendixes. The appendixes are organized in chronological order of the working groups' focus on SB/AD development and oversight processes. Appendixes E and F contain administrative information, such as the list of working group members and invited observers, program staff, and a list of acronyms related to this report. Appendix G contains a copy of the AD ARC charter. Appendix H contains a copy of the proposed AD legal interpretation and the requests for the FAA legal interpretation regarding specific aspects of part 39. Appendix I contains a list of primary AD ARC-related deliverables.

2.0 AD Process Improvements—What Has Changed?

The AD ARC is unique in that the FAA Administrator tasked it to evaluate and implement changes; most ARCs are chartered only to make recommendations that are addressed later. The AD ARC's working groups developed 30 proposals to address the AD CRT and IRT recommendations that prompted the implementation of the following improvements to the AD process. These improvements affect manufacturer development of service instructions; FAA AD development and oversight activities; and AD planning, accomplishment, and maintenance by operators. Note that because of the participation of three foreign transport-category airplane manufacturers that are subject to different national regulatory systems and interact with the FAA based on Bilateral Aviation Safety Agreements, the ARC acknowledged and addressed international compatibility aspects of any AD process changes as appropriate.

The AD ARC's implementation actions use the development of new, completely revised, or updated FAA and industry guidance and training as primary implementation tools of the AD process changes. The ARC's success largely depends on the industry adopting the best practices outlined in the published Advisory Circulars (AC) and Air Transport Association of America, Inc. (ATA) specifications. The ARC communication plan, which includes multiple FAA and industry briefings, will encourage the industry to adopt the recommended best practices. In addition, the FAA plans to issue a communication to industry to outline the ARC's activities, implementation deliverables and advocate that the industry follow the best practices regarding ADs in recently issued FAA and industry guidance.

Specifically, the AD ARC actions initiated—

(1) The development of new or revised FAA and industry guidance and training;

(2) The release of FAA policy memoranda on specific AD process issues; and

(3) The issuance of a proposed FAA legal interpretation on part 39.

Chapter 2.0 describes the AD ARC initiated actions. Whether the implementation action policy or guidance is new or revised is indicated in the section heading as "New", "Revised", or "Updated". In addition, expected benefits of process changes are presented.

2.1 AD ARC Process

In December 2009, the AD ARC began to review and analyze each of the AD CRT recommendations and the IRT recommendations related to ADs with planned implementation of those recommendations by June 30, 2011. The compressed timeframe and effort required to evaluate the 18 complex recommendations presented difficulties for the ARC and its 4 working groups. Under normal circumstances an issue would be studied, the solution agreed to by all stakeholders, and then the appropriate material (such as guidance, training, or a rulemaking document) would be drafted and previewed by the interested parties and published for comment. For this effort, the FAA and industry drafted guidance documents and developed training materials as the ARC working groups analyzed and evaluated issues.

Based on agreed concepts within a working group, the working group developed guidance language as it documented a proposed implementation plan. The working group then submitted the guidance language to the FAA or submitted a change request or draft language to ATA to revise certain industry guidance. The FAA incorporated the guidance language into the appropriate FAA documents and published the document for public comments. ATA reviewed the change requests and incorporated the suggested changes in its industry guidance as appropriate.

Although familiar with the working group's concepts to revise an AD process issue, AD ARC members usually did not have an opportunity to review the actual FAA guidance until the public comment process. Members had agreed to this possibility during the initial meetings because it was the only way to evaluate and implement the recommendations by June 30, 2011.

Ultimately, the AD ARC addressed each AD CRT and IRT recommendation and implemented action on most. In the few cases where an AD ARC member disagreed with the final implementation plans (either the AD ARC member disagreed with the original AD CRT or IRT recommendation or with the direction or level of detail taken to implement an action), the position of the AD ARC member's organization is presented.

2.2 Part 39

One of the AD ARC's activities centered on the discussion of whether part 39 needed to be revised (AD CRT task 2 report, recommendation No. 12). Some ARC members believed the effect of any AD process changes would be limited by the broad regulatory framework of part 39 that has permitted increasingly detailed service bulletin (SB) instructions incorporated by reference in ADs, effectively decreasing the role of part 43 maintenance programs in compliance. Other ARC members believed that clarification of part 39 was unnecessary and the AD process changes discussed in detail later in this chapter collectively provide the flexibility sought by operators.

2.2.1 Request for Legal Interpretation

The FAA Organization/Procedures Working Group (FPWG) analyzed recommendation No. 12 and as a result AFS–300 requested a formal legal interpretation from the FAA Assistant Chief Counsel for Regulations (AGC–200) on part 39 to help evaluate and analyze the AD CRT recommendation for the FAA to—

> "Review §§ 39.7 and 39.9, and, if necessary, revise those sections to clarify that AD compliance is an action required of the operator; it is not necessarily determined by a strict comparison of the aircraft to AD-specified configurations."[9]

The primary issues the FPWG discussed are—

(1) The continuing obligation for an operator to maintain an AD-mandated configuration and

(2) The extent of an aircraft operator's obligation to accomplish actions referenced in an SB incorporated by reference in an AD beyond those actions necessary to address the unsafe condition.

A copy of AFS–300's request is contained in appendix H to this report. In addition, see section D2.5 of this report for a detailed discussion of the FPWG's review of this issue.

In addition to AFS–300's interpretation request, the Aeronautical Repair Station Association submitted additional considerations and questions to AGC–200. During its December 2010 meeting, the AD ARC introduced a number of issues about the language of part 39 and asked AGC–200 to review the situation where an AD requires an action that is impossible to accomplish. See appendix H to this report for a copy of these additional requests.

AGC–200 Response

On April 14, 2011, AGC–200 published a proposed AD legal interpretation in the Federal Register[10] for public comment. See appendix H to this report for a copy of the proposed AD legal interpretation. The FAA requested that comments on the proposed interpretation be submitted by May 16, 2011.

Request for Extension of Comment Period

On May 17, 2011, the industry members on the AD ARC requested the FAA extend the comment period for the proposed AD legal interpretation until June 30, 2011, due to the ramifications of scope and extent of the proposed interpretation. The extension request also noted additional time for comment was needed for manufacturers, operators, maintenance organizations, and individual aircraft owner and operators to finish a review of the proposed interpretation. The FAA extended the comment period to June 30, 2011. See appendix H to this report for a copy of the published extension of the comment period.

[9] AD CRT task 2 report, recommendation No. 12.
[10] 72 FR 20898, April 14, 2011.

2.2.2 AD ARC Air Carrier and Repair Station Industry Member Concerns With the Part 39 Framework and Processes

The AD ARC planned to evaluate the FAA's final legal interpretation on part 39 and its implications regarding the AD CRT's general interpretation and concern that:

> "Carried to its extreme, the unique status of AD configuration requirements means that every element of the configuration requirements of every AD applicable to an aircraft must be in the mandated configuration without deviation throughout every flight.[11]"

However, AGC–200 did not issue a final interpretation before the publication of this report. The ARC noted that the AD process improvements and published documents may need to be reviewed upon issuance of a final legal interpretation on ADs.

The AD ARC worked within the regulatory framework of part 39 realizing that its tasking could not be delayed pending an amendment to part 39. That framework assumed the AD CRT's general interpretation of part 39, which was consistent with the proposed interpretation. The FPWG, in a majority opinion, found that actions of the ARC could address the issues underlying recommendation No. 12 without revising part 39. The minority opinion indicated to some ARC members that significant issues with the regulatory language in part 39 and the assumed interpretation remained. See section D2.5 of this report for a detailed discussion of part 39 issues reviewed by the FPWG.

Some AD ARC members believe the part 39 language and assumed interpretation are too restrictive because they treat part 43 maintenance programs as irrelevant to AD compliance determinations. For example, if after flight, an element of an AD (for example, a screw) is found out of its mandated configuration, neither inspections or preventive maintenance performed before flight, nor post-flight corrective actions or planned maintenance alter the fact that the aircraft was, according to the assumed interpretation, operated in noncompliance with the AD. Further, some have asserted that the unsafe condition that necessitated the AD would have been "reintroduced".

As discussed previously, the AD ARC's improvements to processes underlying the broad framework of part 39 should assist in providing greater flexibility while ensuring continued operational safety. These enhancements will reduce the potential for widespread flight cancellations (as occurred in April 2008) and other compliance-related issues. More fundamental change to part 39 or its interpretation and FAA supporting policies and practices may be necessary to further reduce and possibly eliminate this risk.

AD ARC air carrier and repair station industry members presented concepts, as summarized below, that were discussed and documented, but not fully explored by the ARC. These ARC members believe the development of these concepts could further enhance the AD processes and made similar comments to the draft part 39 legal interpretation:

[11] AD CRT Task 2 Report, page 30.

- Part 39 should acknowledge that part 43 maintenance programs are the method by which air carriers/operators must maintain all aspects of airworthiness, including the maintenance of type design as changed by ADs. This approach is the way air carriers have, for years, safely maintained the airworthiness of newly-delivered aircraft, including AD-equivalent design changes installed in production. The approach would allow air carriers to make minor repairs and alterations to ADs (which by definition preclude adverse effects on airworthiness) using the same procedures currently used under part 43 to make changes to safety and other features of the type design. Major repairs or alterations would require FAA-approved data such as an approved AMOC.
- Provide for "terminating action" in AD language that clearly transfers the maintenance of the type design modification to part 43 after the AD is accomplished. Special decision criteria could be developed for providing terminating action to ADs that are workmanship or skill-set intensive.
- Describe AD compliance requirements in terms of the new type design configuration rather than in terms of accomplishment instruction steps. SB instructions certainly are vital tools, but do not describe their objective in a way that can be readily incorporated into practical configuration control or used in realistic compliance determinations. The AD ARC developed guidance for designating certain SB steps as required for compliance (RC) to address the latter of these issues. However, the guidance will require serious evaluation after a period of implementation. The recommended description would focus requirements on the exact configuration needed to address the unsafe condition in a manner similar to design changes installed in production. It would minimize the impact of ADs as "stand-alone", configuration freezes that allow over prescribed requirements, providing a narrower objective for configuration control and compliance determinations and less demand for, and reliance on, AMOCs.

The proposed FAA legal interpretation explains that amendment 39–106 (30 FR 8826; July 14, 1965) authorized the FAA, for the first time, to adopt ADs to correct "unsafe conditions" caused by maintenance.[12] The AD ARC air carrier and repair station members found that this explanation transposes a reasonable concern over maintenance introducing an unsafe condition into an overstated driver of policies and practices under part 39—concerns over maintenance "re-introducing" an "unsafe condition" by allowing any deviation from any element of a mandated configuration. These members believe that risk management principles do not support the outcome of policies that are driven by concerns over reintroduction of an unsafe condition. They further believe that either an enduring new FAA legal interpretation of, or amendment to, part 39 and associated policy changes are needed to acknowledge and re-establish the role of part 43 maintenance programs in providing continuous airworthiness including accomplishment of the safety intent of ADs.

[12] Proposed Airworthiness Directive Legal Interpretation; 76 FR 20899, April 14, 2011.

2.3 Effective and Efficient AD Process (New)

The AD ARC concluded that all of the improvements to the AD process implemented through the ARC and its working groups will contribute to addressing the AD CRT recommendation for a more effective and efficient AD process. The AD process improvements, in conjunction with the current FAA Quality Management System (QMS)[13] and the Transport Airplane Directorate (TAD) internal safety management system processes will help ensure that the AD process is effective and efficient for large transport airplanes. A more efficient and effective AD process will result from (1) the AD ARC implementation of the AD CRT recommendations and (2) continued monitoring and oversight of the internal measures used to evaluate the effectiveness of the ARC-related process enhancements.

2.3.1 Maintenance in ADs

During an AD ARC meeting in September 2010, the ARC assigned to the AD Development Working Group (ADWG) the task of addressing maintenance of mandatory design changes in ADs. The ADWG noted that addressing maintenance in future ADs would clarify the maintenance requirements for mandatory design changes and improve the ability of operators to avoid the unintended alteration of those configurations. Therefore, in future ADs, for certain AD-mandated design changes, the FAA will clearly state when normal maintenance methods, techniques, and practices can be used as long as no element of the AD-mandated configuration is modified.

2.3.2 Later Approved Parts

In discussing ways to make the AD process effective and efficient, the AD ARC assigned the ADWG with the recommendation to minimize the number of AMOCs for ADs that require design changes. The ADWG recommended allowing use of "later approved parts" without the need for an AMOC when appropriate. For example, if an AD requires replacement of a –1 part with a –2 part, and a –3 part is subsequently approved as an alternative to the –2 part, then the objective is to develop a method that would permit the operator to use –3 part without obtaining an AMOC. The ADWG proposed that service information include the following definition of "later approved parts"—

> *Design Approval Holder (DAH) design changes approved after the original issue or revision [X] of the service bulletin.*

DAHs and the FAA will decide whether later approved parts are acceptable without an AMOC during SB and AD development on a case-by-case basis. If the FAA and DAH find the installation of later approved parts acceptable, it would be stated in the specific SB, which will be incorporated by reference in the AD.

[13] The Office of Aviation Safety (AVS) is an International Standards Organization (ISO) certified organization. As outlined in FAA Order 8100.5A, Aircraft Certification Mission, Responsibilities, Relationships, and Programs, the Aircraft Certification (AIR) service within AVS is responsible for the determination and issuance of ADs.

The ADWG also considered allowing later approved service information in FAA ADs. However, because service information incorporated by reference in an FAA AD must be available at the time the AD is issued, the term "later-approved service information" cannot be used in an FAA AD.

2.3.3 Expected Benefits

- Reduction in number of AMOC requests for later approved parts leads to a reduced burden in operator's and DAHs requesting and the FAA processing AMOC approvals.
- Reduction in the number of SBs revised to provide compliance using later approved part numbers.

2.4 FAA GUIDANCE

2.4.1 FAA Order 8900.1, Flight Standards Information Management System (New Chapters)

FAA Order 8900.1, Flight Standards Information Management System[14] is an electronic handbook containing all AFS policy and guidance concerning FAA aviation safety inspector (ASI) job tasks. The order applies to ASI, managers and supervisors, and other FAA operational and administrative employees. The aviation industry may consult this order as a reference only. The FAA revised FAA Order 8900.1 to address AD management, Aircraft Evaluation Group (AEG) roles and responsibilities, AEG outreach efforts, ASI decision making for AD compliance determinations, and the risk management process.

AD Management

The FAA added a new chapter for ASIs to FAA Order 8900.1 covering the AD Management Process, specifically volume 3, chapter 59, section 1. The chapter addresses the IRT recommendation for the FAA to provide timely information about new AD requirements and be responsive to any operator that requests assistance in the form of progress-towards-compliance audits or reviews, in advance of the AD compliance dates.

The AD management process chapter specifies the following six basic elements that an air carrier could include to create its own effective AD management program:

- Planning,
- Support,
- Provisioning,
- Implementing,
- Recording, and
- Auditing.

[14] The order may be viewed or downloaded from http://fsims.faa.gov.

FAA Order 8900.1 also identifies the ASI's role in the AD compliance planning process. The order specifies when the operator brings forth issues, concerns, or clarification requests during AD planning meetings, the ASI's involvement ensures that the appropriate FAA office—AEG and/or aircraft certification office (ACO)—is consulted and their recommendations and guidance are provided as feedback to the operator.

ASI Decisionmaking

The FAA issued a new chapter 60 in FAA Order 8900.1 containing guidance on ASI decisionmaking relative to AD compliance, and the ASI's role in the AMOC process. The guidance requires ASIs to determine the resources needed to solve difficult and controversial issues so as to eliminate single-person and subjective determinations. ASIs are directed to seek guidance and technical assistance from internal FAA resources, including the certificate-holding district office (CHDO), principal inspector (PI), AEG, ACO, Regional Office and/or appropriate FAA headquarters-level branch. The order states ASIs should rely on these resources to gather the appropriate information on which to determine AD compliance and applicability.

FAA Order 8900.1, ASI decisionmaking also includes conducting a detailed risk management/safety assessment as part of the process for resolving aircraft and possibly fleet-wide issues and provides a logic flowchart with systematic procedures that guide decisionmaking. In addition, the order specifies the Risk Management Process (RMP) (which provides Certificate Management Teams and Certificate Project Teams with procedures to manage hazards and associate risks) may be used. The FAA also revised FAA Order 8900.1, volume 10, chapter 3, section 1, Risk Management Process to include a reference for assessing suspected AD noncompliance issues.

The AD ARC noted that the RMP is a tool available to ASIs for evaluating a potential AD noncompliance. The ARC agrees with the IRT recommendation that ASIs should not need to conduct a risk assessment before taking action on an AD noncompliance.

Aircraft Evaluation Group

The AEG[15] provides technical consultation to CHDOs and certificate management offices (CMO) which involves supporting the CHDO and CMO[16] on ADs. ASIs have not typically used the AEG as a resource for resolving AD compliance issues.
FAA Order 8900.1 now contains an ASI decision tool to emphasize the AEG's involvement in compliance determinations. The order also identifies the roles and responsibilities of the AEG and incorporates AEG outreach to AFS field offices in support of AD implementation by encouraging communication among the ACO, AEG, and ASIs.

[15] The AEG is the AFS organization responsible for determining the operational suitability of newly certificated and modified aircraft and plays a critical role in pilot qualifications, flight crew training, minimum equipment lists, acceptance, and approval of ICAs for all aircraft, engine and propeller certifications, and other continuing airworthiness requirements.
[16] For ease of reference CMO is used throughout this report to identify the local FAA office responsible for an air carrier/operator's certificate. However, note that some operators work with an international field office (IFO), CHDO, Flight Standards District Office (FSDO); or certificate management unit (CMU).

In addition, the order contains a new section that relates AMOCs to ADs and specifies actions that would prompt AEG involvement.

Regarding the AD CRT recommendation for an organizational and procedural change to ensure FAA field offices have a direct link to the AEG, the FAA determined the current organizational structure was adequate and deemed an increase in AEG staffing would be more appropriate. The Director of Flight Standards Service (AFS–1) requested and received an increase in AEG staffing to support these processes.

AMOC Process

FAA Order 8900.1 provides guidance to ASIs about their role in the AMOC process. The guidance includes a new section on processing AMOC requests. Specifically, the section provides guidance on how ASIs should coordinate with the AIR and AEG and how the letters of approval/denial for AMOC proposals should be processed. In addition, the order contains a new section on how to process 24/7 AMOC urgent support requests. The order directs ASIs to reference FAA Order 8110.103 for further guidance on the AD and AMOC process to include how to contact AIR for support through the AEG.

The order includes guidance on global AMOCs. The order explains that a global AMOC applies to two or more operators and can be used to obtain an AMOC for multiple serial numbers or makes and models specified in an AD. The guidance states that an AMOC can be useful if the responsible office receives or expects to receive multiple requests for the same AMOC. The order provides various examples of global AMOC proposals.

The order also provides guidance to ASIs on determining that an operator has a defined policy and procedure to identify and determine if an AMOC is necessary. The FAA is in the process of updating that guidance to identify how an operator's AMOC policy can facilitate the development of global AMOCs.

Expected Benefits

ASIs now have clear guidance on decisionmaking which includes the appropriate coordination within the FAA's organizations to assist ASIs with compliance determinations and AMOC requests, if needed, and coordination with the AEG to better resolve noncompliance issues. The guidance emphasizes there should be no single-person decisionmaking on controversial issues.

2.4.2 FAA Order 8110.103, Alternative Methods of Compliance (Updated)

On September 27, 2010, the FAA issued FAA Order 8110.103A. The revision addressed the AD CRT recommendations by—

- Providing AEG coordination criteria for AMOC responses;
- Allowing ACOs to delegate authority to review and approve certain AMOC proposals to DAH structural designees or type certification organization designation authorization (ODA) holder's structural unit members; and
- Providing 24/7 AMOC urgent request support guidance.

On June 30, 2011, the FAA issued Order 8110.103A CHG 1 to—

- Expand delegation authority for certain AMOCs to allow additional structural delegations, including certain global AMOCs, to DAH designees;
- Share AMOCs with DAHs to allow them to identify if global AMOCs are appropriate;
- Add guidance when an AMOC is not necessary; and
- Revise the criteria for 24/7 AMOC urgent requests from "AMOC support is needed to avoid significant air transportation disruptions (i.e., approximately 10 or more aircraft)" to "AMOC support is needed to avoid significant air transportation disruptions or substantial impact to an operator."

Expected Benefits

- Expanded structural delegation of AMOCs is an efficient use of resources to reduce the ACO workload and ensures timely issuance of AMOC approvals.
- Promotes consideration of global AMOCs to reduce the potential for multiple single-airplane/fleet AMOCs, thereby reducing workload for industry and the FAA.
- Operators that have AD compliance issues or questions with a few aircraft can now ask their ASI for an AMOC outside of normal business hours, based on defined criteria. These operators are no longer restricted by "10 or more aircraft" criteria needed to use the 24/7 AMOC process. The 24/7 AMOC process should reduce flight cancellations due to potential noncompliance issues outside of normal business hours.
- Facilitates the issuance of global AMOCs for typographical and administrative errors.

2.4.3 FAA Airworthiness Directives Manual, FAA–IR–M–8040.1C (Updated)

The FAA revised the AD Manual[17] to—

(1) Clarify acceptance of credit for actions accomplished using an earlier revision of the service information than identified in the AD action;

(2) Include updated policy on ex parté communication that clarifies the meaning of an ex parté contact and when it is improper, identifies where to record ex parté communication, and provides helpful precautions and practices during the rulemaking process; and

(3) Emphasize the AEG specialist's early involvement in the AD development process.

[17] Issued May 17, 2010.

Earlier SB Credit (Updated)

Chapter 8 of the AD Manual specifies when it is appropriate to provide credit for actions accomplished using an earlier revision of the service information than that incorporated by reference in an AD. For example, actions accomplished before the effective date of an AD in accordance with the procedures specified in an earlier version of the SB may be considered acceptable for compliance with the corresponding actions specified in the AD. The aviation safety engineer (ASE) will identify on the AD worksheet whether credit can be given for actions accomplished using an earlier revision of the service information. The AD action will then include a compliance paragraph on credit for actions accomplished using an earlier revision of the service information.

Ex Parté Communications (Updated)

Ex parté communications occur when all parties affected by a rulemaking are not present during discussions of an issue directly relevant to the proceeding. The AD CRT found that the FAA's ex parté policy may be poorly understood by FAA employees and operators. Therefore, the FAA revised the AD Manual to provide expanded guidance on the meaning of a proper and improper ex parté contact during the following stages of the AD rulemaking process:

(1) Before issuance of a notice;

(2) During the comment period on the notice;

(3) After the comment period closes; and

(4) After a meeting is announced to the general public.

AEG

The FAA also revised the AD Manual to incorporate AEG coordination on the AD worksheet and during coordination of the AD action. The guidance requires an AEG specialist's involvement earlier in the AD development process so the AEG can better determine when to activate an outreach program to a principal inspector.

Expected Benefits

- Providing credit for earlier SB actions reduces AMOC requests and the corresponding burden for preparing and processing those requests by the operator, DAHs, and the FAA.
- Clarifying ex parté contact should facilitate appropriate FAA and industry communication and information gathering to support the AD development process and promote the proper use of these communications during AD rulemaking.
- Clarifying AEG involvement early in the AD development process ensures that the operational perspective is considered and addressed before AD issuance. This supports AD implementation by reducing the risk for operational issues to be discovered after AD issuance and facilitates outreach to FAA principal inspectors when appropriate.

2.4.4 Other FAA Orders (New and Updated)

FAA Order 8110.107, Monitor Safety Analyze Data (New)

On March 12, 2010, the FAA issued FAA Order 8110.107 that introduced the Monitor Safety/Analyze Data (MSAD) process. The MSAD process is used to—

- Filter, review, analyze, and identify trends in aviation safety data;
- Help the FAA to identify safety issues in the in-service aircraft fleets; and
- Identify corrective actions to mitigate safety risks across the fleet.

The new order defines a process to ensure early AEG involvement in the continued operational safety decisionmaking process. When ASEs need information for a risk analysis from AFS, the ASE must either obtain the information through the responsible AEG or notify the AEG what information needs to be requested directly from ASIs in the field.

FAA Order 8100.15A, FAA Organization Designation Authorization Procedures (Updated)

On June 10, 2011, the FAA issued revised FAA Order 8100.15, chapter 8, section 11 that expanded the delegation of structural AMOCs and delegation of certain global AMOCs for type certificate (TC), ODA holders. A TC ODA holder may be authorized to approve an AMOC for specific ADs with structural aspects (that is, structural ADs or ADs involving other disciplines in which the structure may be affected by a repair, modification, or alteration). In rare circumstances, when the ODA holder has documented a pattern of identical approvals, the ODA holder may be authorized to approve a global AMOC. Additionally, the ODA holder may be authorized to approve global AMOCs for administrative (non-technical) corrections to an SB referenced in an AD.

FAA Order 8110.37E, FAA Designated Engineering Representative (DER) Handbook

On March 30, 2011, the FAA issued FAA Order 8110.37E. Chapter 2, sections 2–6 a(5) and 2–7 c(6) expand delegation of structural AMOCs and delegation of certain global AMOCs to DAH structural designees. The effective date for this policy was May 30, 2011.

Expected Benefits

The FAA updated the orders to expand delegations for approving AMOCs and to include the corresponding changes to the AD process made in other FAA orders. This provides consistent and standardized guidance to FAA personnel.

2.4.5 Compliance Times in ADs (Current/New Policy)

The AD CRT recommended that at a minimum, the first compliance deadline should always be stated in the notice of proposed rulemaking (NPRM) and final rule AD. For NPRMs/ADs with simple compliance times, TAD identifies the compliance times in the regulatory text of the NPRM and the final rule AD. For other NPRMs/ADs, especially

those with complex compliance times, the SB identifies the specific compliance times and this information is incorporated by reference in the AD, which provides limited visibility to the public unless it has access to the SB. In these cases, TAD provides a range of those compliance times (including the first and last compliance times) in the NPRM preamble for transport airplane ADs.

The FAA also issued FAA Notice N8110.112, Placing Service Information into the Federal Docket Management System (FDMS)[18], on September 28, 2010, to require the FAA to post information incorporated by reference in FAA ADs to the FDMS. Posting SBs that are incorporated by reference in final rules will allow the public to view the compliance times in the SB. The notice also allows the FAA to post service information documents that are proposed in an NPRM for incorporation by reference (IBR) if written consent from the DAH is provided.

Expected Benefits

Improving awareness of compliance times in NPRMs and ADs will (1) provide better information to the public so that it can submit timely substantive comments on NPRMs and (2) assist operators with compliance planning.

2.5 Advisory Circulars for Industry

2.5.1 AC 39–9, Airworthiness Directives Management Process (New)

The FAA issued this AC to recommend procedures for operators to develop an AD Management Process. The AC provides best practices for all aircraft operators AD compliance planning and includes information on ASI involvement in air carrier AD management processes and AD prototyping. The AC also provides a means for operators to assess and respond to unsafe conditions and suggests that when developing an AD management process, an operator consider its size, capabilities, resources, and equipment. The AC recommends an operator's AD management process consist of the following elements:

- Planning (ensures awareness and assigns responsibility for AD requirements);
- Support (consists of engineering, material, and configuration control);
- Provisioning (ascertaining abilities and time to complete the AD and obtaining materials and kits from DAHs if available);
- Implementing (accomplishing the AD);
- Recording (documenting the previous elements); and
- Auditing (a process to continually verify and validate AD compliance).

The AC presents operators with industry best practices for implementing ADs including pre-planning, implementation, and AD verification programs. ASI and CMO participation is encouraged for AD compliance planning and aircraft prototyping.

[18] FAA Notices are temporary directives and the FAA will incorporate the information in Notice N8110.112 into the FAA's next revision of the AD Manual, FAA–IR–M–8040.1.

For compliance planning, the AC includes specific recommendations whereby the operator reviews work accomplished before the issuance of an AD to determine the suitability of the method of compliance and/or the need for an AMOC. The AC also suggests the operator prototype the work instructions to ensure the instructions are clear, compliant, and repeatable. Accomplishing a prototype of the AD compliance documentation allows identification and resolution of issues before implementing the instructions on multiple aircraft.

AD Sampling Program and Physical Verification

The AC recommends a sampling program as an effective method for monitoring ADs for continued compliance and for verifying that an unintentional alteration has not occurred. In addition, for an air carrier, its Continuing Analysis and Surveillance System (CASS), sampling program would use the air carrier's existing audit and reliability aspects of its CASS to verify that ADs are evaluated, accomplished, tracked and that no unintentional alteration of an AD configuration occurred. The AC provides an AD Compliance Physical Verification Analysis decision flowchart with instructions to assist operators determining whether physical verification of AD compliance is necessary. The AC further suggests that ADs included in a sampling program be assigned an inspection task on a representative number of aircraft within the operator's fleet to verify continued AD compliance.

AMOCs

24/7 AMOC Process

The AC contains the FAA's policy on processing AMOC requests after business hours to avoid significant air transportation disruptions or substantial impact to an operator due to a potential AD noncompliance.

Global AMOCs

The AC recommends operators—

- Request global AMOCs when appropriate.
- Include a statement permitting the FAA to share the subject of an AMOC request with the DAH for its consideration in obtaining a global AMOC.
- Include language in their AMOC request letters to the DAHs that permits the DAHs to use air carrier fleet AMOC requests as the basis for requesting a global AMOC.[19]

[19] This language was inadvertently omitted from AC 39–9 dated June 6, 2011. The FAA plans to include this information in an upcoming Change Notice to the AC.

Coordination on Controversial AD Compliance Issues

The AC recommends that as part of the operator's AD management process, the operators/air carriers develop a process to coordinate AD compliance matters with the local FAA office. This process may reference a conflict resolution process for circumstances needing immediate resolution. The AC notes that before agreeing with an operator's/air carrier's process, the FAA local office will ensure that the FAA's role, as defined in the process, is consistent with FAA policy.

In addition, the AC suggests air carriers that are members of industry associations consider using established processes such as ATA Specification 111, Airworthiness Concern Coordination Process (ACCP) or similar processes developed by other associations, for significant compliance issues that may be widespread and newsworthy. This could include coordination with associations, regulatory authorities, and DAHs.

Training

AD Awareness. The AC notes that an operator should develop recurrent AD awareness training to address the specific policies and procedures regarding AD compliance. This training should include the awareness of strict compliance with written instructions and the option to propose an AMOC when a deviation from the AD is necessary or desired. The AC recommends when an operator determines that an AD's complexity may affect its implementation, the operator should have a program to determine whether maintenance training is needed using a risk analysis-based assessment.

***Skill-Specific Training*.** The AC recognizes training may also include skill-specific training for particular ADs such as the use of a new nondestructive testing (NDT) technique. The AC also recommends DAHs and operators have an electrical wiring interconnection system (EWIS) training in place that is consistent with the 2007 Enhanced Airworthiness Program for Airplane Systems (EAPAS) rule and with the current version of AC 120–94, Aircraft Electrical Wiring Interconnection Systems Training Program.

Expected Benefits

Although many large operators may have sophisticated AD management processes in place, the AC provides basic guidelines for all operators to follow when implementing and maintaining ADs. The guidance on prototyping, AD sampling, and physical verification are industry best practices that will assist operators in reducing AD noncompliance issues. In addition, the ASI role as an observer and a coordinator between the operator and the AEG and ACO during AD compliance planning provides a feedback mechanism on AD implementation issues and should help reduce future AD noncompliance.

2.5.2 Draft AC 20–xxx, Design Approval Holder Best Practices with Regards to Airworthiness Directives (New)

The FAA issued draft AC 20–xxx on June 13, 2011, which presents the best practices for DAHs of aircraft, aircraft engines, propellers, and articles when drafting SBs that are the subject of an AD. The draft AC addresses a broad range of subjects for DAHs such as guidance on drafting SBs that will be incorporated by reference in a future AD; a new

process for DAHs to check for overlapping/conflicting ADs; maintaining airworthiness; ex parté communications; and global AMOCs as discussed below. After incorporating public comments, the FAA plans to post another draft for comment and issue a final AC by the end of 2011.

Drafting SBs for ADs

Critical Task Differentiation

Guidance on identifying RC items in SBs (that will be incorporated by reference in an AD) is included in the second draft AC 20–xxx. Currently, SBs incorporated by reference in an AD often contain detailed instructions necessary to comprise a complete work package. The SBs may include procedures such as use of a specific part number or material that may not be directly related to correcting the unsafe condition in the AD. The increasing detail in instructions developed over a long period to give operators sufficient information DAHs consider necessary to ensure that, after SB accomplishments, the affected airplane represents the respective DAH's state-of-the-art level of safety and design quality.

A recent approach to coordinate with the FAA SB content, structure, and level of details was the "AD-friendly-SB"[20] initiative involving U.S. and non-U.S. DAHs. The AD-friendly initiative is designed to identify and implement improvements to format and usability of SBs for nontechnical issues. A key purpose of the initiative was to avoid repetition of SB service instructions in ADs, thereby avoiding differences, errors, and duplication of FAA and operator efforts. However, the initiative also is the latest evolutionary step toward making modification SBs detailed, "how to" installation instructions and away from the objective-oriented instructions specified in historical ADs.

The AD ARC noted that the failure to differentiate non-critical tasks[21] from critical tasks results in all steps incorporated by reference in an SB to be accomplished exactly as written. This can cause over prescription of the AD requirements and requires an AMOC for any deviation to those steps, even obvious typographical errors. Failure to obtain an AMOC for any step results in a noncompliance with the AD. The new AD ARC-developed guidance states only those steps in an SB (incorporated by reference in an AD) that have a direct effect on addressing an unsafe condition will be identified as RC.

The AC provides information to help authors and users of the service information understand the safety intent of the design change, the configuration that corrects the unsafe condition, and which tasks are necessary to comply with the applicable AD. This approach separates non-critical tasks such as access to an area in the SB incorporated by reference in an AD from those required to correct the unsafe condition.

[20] See "Agreed Principles and Practices on AD Friendly Service Bulletins Between the Seattle Aircraft Certification Office (SACO), Los Angeles Aircraft Certification Office (LAACO) and Boeing Commercial Airplanes," dated March 31, 2006.

[21] Non-critical tasks are tasks specified in service information from which an operator may deviate and not affect the correction of the unsafe condition.

The AD ARC expects each DAH and regulatory authority will create internal guidance based on the information in draft AC 20–xxx and parallel information in other industry documents such as ATA iSpec 2200[22] and S1000D[23] to ensure the standards for identifying the safety intent, describing the configuration that corrects the unsafe condition, and identifying the applicable RC tasks during the drafting, review, and approval of SBs.

The AD ARC notes that implementation of the RC concept will differ among the various DAHs. AD ARC members from Airbus and Bombardier, for example, stated their companies do not concur with the level of detail contained in the AC to identify RC tasks. Airbus plans to identify the procedure and test paragraphs of its SBs as RC to remove the unsafe condition from the aircraft and not identify specific steps. Among other issues, Airbus cited costs associated with revising its SB authoring system and the lack of a stated need to separate critical tasks from flexible tasks for its non-U.S. customers.

Bombardier holds a similar position in that it has agreed to identify certain paragraphs of its SBs as RC, but it will not identify specific steps. Like Airbus, Bombardier will consider procedure and test paragraphs as critical to ensure removal of the unsafe condition of the airplane. Bombardier stated operators may deviate from job set-up and job closeout instructions without interfering with the safety intent of the AD. Bombardier mentioned similar reasons as Airbus for not adopting the detailed RC approach, one of which is that there is no regulatory requirement to identify steps within an SB as critical to correct the unsafe condition. Both DAHs consider their approach to be an equivalent means to comply with the intent of the recommendation.

The AD ARC further notes that its operator and association members accepted the approach to identify certain actions as RC but preferred an even more detailed application of the RC concept. The industry members of the ARC expect that the FAA will further refine the process for identifying critical tasks as it issues future ADs.

Standard Practices

The AC provides guidance on when not to include procedures in an SB because the procedures are already published in other DAH documents. In addition, the guidance suggests standard practices manuals be referenced in the SB. The AC states the phrase "in accordance with" should be used to identify maintenance procedures that must be followed. The phrase "refer to…as an accepted procedure" should be used to identify maintenance procedures that can be used, but for which an operator may use its own accepted equivalent procedure. A general note describing use of "in accordance with" and "refer to" should be included at the beginning of the SB accomplishment instructions.

[22] Information Standards for Aviation Maintenance, Revision 2011.1; May 2011.
[23] International specification for technical publications, Issue 4.0, 2008–08–01.

Flexibility/General Notes

The AC includes guidance on the use of general notes in SBs. Some DAHs use general notes in SBs to provide operators flexibility to use alternate parts, materials, tools, and processes while still meeting design requirements. Without general notes, detailed instructions in SBs often lead to an operator not being allowed to use accepted or approved alternate parts, materials, or processes requiring the operator to submit a request for an AMOC.

The AC explains that general notes are used to provide information related to the SB accomplishment instruction steps. Unless specified otherwise, general notes should also apply to figures, illustrations, and drawings included in the SB. Examples of general notes include referencing alternative parts, material, and processes; describing tolerances and dimensions; warnings or cautions; fastener substitutions; a standard practice; and referring to instances when the specified DAH maintenance documentation must be used.

Streamline Development

The AC suggests each DAH have systems in place to continuously review and implement process improvements in the development and revision of SBs. The AC provides a list of possible tools to implement for continuous process improvements. The tools listed include use of checklists, tip sheets, and boilerplate text; and documented standards and guidance.

Detailed Instructions

The AC notes an SB must be clear on whether a figure, illustration, or drawing is the authoritative instruction or only an installation aid. The AC provides guidance and establishes a standard for illustrations to ensure clarity by employing the following methods:

- Shade/cross hatch important areas;
- Use of phantom lines for items in illustrations that are for reference only; or
- Use of enlarged views in illustrations (currently a DAH standard practice).

The guidance also specifies that the text in the accomplishment instructions should be the authoritative information and that figures, illustrations, and drawings should be used to supplement the accomplishment instructions.

Corrective Action Decision Guidelines

The AD ARC noted an SB specifying numerous compliance times, configurations, conditions, and alternative corrective actions can be difficult to follow. The AC specifies that for such cases, a logic-based diagram could serve as a useful tool to assist owners/operators in choosing the best corrective action path, such as repetitive inspections or terminating repair, based upon the discovered condition and compliance time. The AC contains standards for logic-based diagram format, content, and location noting that the use of such a diagram is only as a supplement to the accomplishment tasks and compliance times text. ATA added parallel specifications to ATA iSpec 2200. See

section 2.6.2. In addition, the Service Information Working Group (SIWG) is communicating with the Civil Aviation Working Group responsible for updating S1000D and will submit a change request in September 2011 to update S1000D to include guidance on inclusion of logic based diagrams in an upcoming revision to S1000D. See section 3.1.2.

The AD ARC noted that DAHs developed different ways to introduce logic diagrams (flowcharts) in SBs. Although all DAHs involved in the AD ARC's activities follow the information included in the current ATA iSpec 2200, the status and the location of a logic diagram within their SBs may differ.

Overlapping/Conflicting ADs

The AC suggests a DAH conduct a review of previously issued ADs and their associated SBs to identify those that may conflict and/or overlap with the pending or new AD. The AC encourages DAHs to develop an SB/AD tracking and management system to identify and address overlaps and conflicts between SB actions. The DAH should search for potential overlapping and/or conflicting AD requirements and determine whether there are any existing/planned ADs in or affecting the area of the pending or new AD. The AC recommends the DAH enable search capability by make/model or part number of affected product(s); major aircraft structural elements such as engine, strut, wing; ATA code; maintenance zones; service information (such as by SB number); and previously issued ADs. The DAH should notify the FAA of the results of its review and resolution of any conflicting issues when submitting the SB for approval.

The FAA will record on the AD worksheet the list of existing ADs affecting/overlapping the newly proposed AD actions that could lead to a noncompliance, confirm that no conflicts exist, and identify whether the DAH confirmed this information.

Maintaining Airworthiness

The AC notes that once a type design is changed by an AD, maintenance can be performed using a combination of the methods, techniques, and practices prescribed in the DAH instructions for continued airworthiness (ICA), and an operator's own maintenance practices developed under § 43.13(c). If these procedures fail to take AD-mandated requirements into consideration, including detailed configuration requirements, the product could become noncompliant with an AD. The AC suggests DAHs perform the following actions:

- During the design change and SB development stages, evaluate the need for changes to ICA to eliminate the potential for undoing a mandated condition or configuration.
- Provide awareness to owners/operators regarding availability of updated ICA documents.
- When drafting SBs, use general notes for flexibility and refer to standard practices as much as possible.

- In an SB, do not duplicate procedures that reside in approved or non-approved (that is, accepted) manuals or other ICA procedures. Place internal flags (only viewable by the service instruction author) in the procedures in non-approved manuals and in approved manuals for the purpose of alerting the service instruction author that the identified data is directly related to an AD.
- Create an SB-to-AD cross reference listing upon release of the AD.

Ex Parté Communications

The AC provides a reference to the FAA AD Manual as well as 14 CFR part 11 for information on ex parté contacts. See discussion of Ex Parté Communications in section 2.4.3 on the AD Manual.

Global AMOCs

Global AMOCs[24] apply to two or more operators and can be used to obtain an AMOC for multiple serial numbers or makes and models specified in an AD. The FAA can issue a global AMOC if the responsible office receives or expects to receive multiple requests for the same AMOC.

To expand the use of global AMOCs, the AC provides guidance for DAHs to consider posting global AMOCs on a Web site accessible by operators as well as reviewing delegated and FAA-approved AMOCs to determine if they are candidates for a global AMOC. The AC states the DAH's Web site should have the functionality to search data on the following fields:

- AD Number,
- Model Effectivity, and
- AMOC approval response or subject of AMOC, as appropriate.

The guidance also specifies that when requesting an AMOC, owners/operators should consider whether to request the AMOC as global or provide permission to share the AMOC approval response with the product DAH for its consideration in requesting a global AMOC. In addition, a permission statement is required for a DAH to consider whether another AMOC requestor's proposal should be a global AMOC. The operator's written consent must be included in the AMOC request submitted to the FAA.

Expected Benefits

The issuance of the final version of draft AC 20–xxx expects to yield benefits in the following areas:

- Critical task differentiation using the RC concept will narrow the scope of the AD requirement thereby reducing the over prescriptiveness of certain new ADs and reducing the need for AMOCs. The reduction in required steps for an AD will

[24] A global AMOC is also known as an AMOC of general applicability.

likely reduce the number of AD compliance questions. Industry may also decide to apply the RC concept to existing ADs using the AMOC process.

- The incorporation of process improvements such as general notes, clarifying the use of figures, and adding flexibility for operators and maintenance providers in the use of standard practices will likely reduce the number AD compliance questions.
- A reduction in AMOC requests because operators, DAHs, and regulatory authorities have clear guidance on when an alternate process or procedure can be used to accomplish certain SB actions.
- Improved processes involving the quality of SBs as well as a reduction in time to develop and revise SBs. The use of general notes allows operators the option to use their engineering authority and reduces the burden on the operator and FAA for processing AMOC requests for steps where operators can use acceptable alternative materials and approved internal procedures without requesting an AMOC.
- The standardized format, content, and location of logic-based diagrams will assist operators with implementing service information accurately and efficiently through repeated use and increased familiarity and reduce potential for AD noncompliance.
- An operator's engineering and administrative resource expenditures should be reduced as more global AMOCs are approved and made widely available to operators.
- The FAA's and DAHs' resource expenditures should be reduced because approving global AMOCs will reduce the number of times the FAA and/or DAH must review and approve AMOC requests for the same issue.
- Improved DAH processes will help ensure operators can maintain their AD-mandated configurations therefore operators should have fewer instances of AD noncompliance.

2.5.3 AC 120–16E, Air Carrier Maintenance Programs, Change 1 (Revised)

The FAA issued Change 1 on June 7, 2011. The AC includes information on industry best practices such as incorporating an AD management process that may help operators ensure the status of ADs on their airplanes remain current. The AC explicitly states an operator may not operate an aircraft that an AD applies to except in strict compliance with the provisions of the AD. The AC recommends operators include a process for evaluating, accomplishing, and verifying ADs in its manual. The AC also notes 14 CFR requires operators to keep a record of the current status of applicable ADs, including the date and methods of compliance, and, if the AD involves recurring action, the time and date when the next action is required.

2.6 AIR TRANSPORT ASSOCIATION GUIDANCE

2.6.1 ATA Specification 111— Airworthiness Concern Coordination Process (Improvements)

The ATA is revising ATA Specification 111 to address issues identified in the AD CRT reports and to develop metrics and means to periodically measure the continued effectiveness of the process. The ACCP is a cooperative process intended to capitalize on operator, DAH, and FAA expertise in the development of service information proposals for issues that may be addressed by ADs. This coordination is valued as the method that addresses potential unsafe condition with effectiveness, timeliness, and efficiency. Its purpose is to produce the effective resolution of a potentially unsafe condition by enhancing communications between the parties that would be most affected by service information or SBs incorporated by reference in ADs. The Lead Airline Process is that portion of the ACCP that involves the lead airline, DAH, and FAA—other portions involve only the DAH and FAA.

ATA Specification 111 had not been updated since 2000 and does not reflect current air carrier and DAH internal processes. ATA is coordinating the update of ATA Specification 111 with AD ARC member DAHs and all affected parties.

During the AD ARC discussions, it was noted that ATA Specification 111 represents a U.S. industry standard whose application is not readily implemented for non-U.S. DAHs and operators. Airbus, Bombardier, and Embraer have implemented corresponding processes adapted to their business and regulatory environments.

The revised ATA Specification 111 process will include—

- Transition to DAH Web-based systems for coordination of the process with the lead airline and communication and of the status of lead airline activities with other affected operators. Status may be conveyed using terms in the ACCP flow chart.
- The DAH initiating the Lead Airline Process at the first stage of service information development in anticipation of FAA's intention to incorporate the service information by reference in an AD.
- Provisions for the lead airline and the DAH to involve repair stations, component manufacturers, maintenance providers, and/or supplemental type certificate (STC) holders in the ACCP if their participation is relevant to an emerging issue.
- Methods for establishing priorities for the depth of lead airline processing and for retaining direct ATA involvement and advocacy in high-priority/impact, urgent, or contentious issues or issues involving multiple-equipment models.
- A standard for providing the individual designated as the lead airline with the text of proposed service information for review and feedback including those related to potential urgent rulemaking. Provisions for coordinating inputs to proposed service information from other potentially affected operators.

- Formalizing provisions for coordinating with FAA Manager, International Branch (ANM–116) potential mandatory continuing airworthiness information (MCAI)-related ADs in lieu of formal U.S. lead airline participation in the development of non-U.S. SBs.
- Revised compliance time recommendations based on timeframes remaining within clear risk management/safety management system (SMS) estimates.
- Coordination with the DAH to prototype or validate a proposed SB and its kit or any special inspection before their approval. The DAH should consider inviting the responsible ACO or Engine Certification Office (ECO) engineer and/or AEG personnel to observe the validation. In certain cases, particularly "high risk" or skill-intensive corrective actions, the development of effective service information will require, in addition to the DAH's validation process, that the lead airline, or an arranged alternate airline, prototype or validate the instructions.
- New metrics to determine effectiveness of the Lead Airline Process. The ATA will poll DAHs, ACOs, and ECOs annually to gather the needed data for the metrics. The following metrics are under consideration:
    - Number of times the lead airline provided feedback on a written draft of the SB accomplishment instructions,
    - Number of times an AD is revised,
    - Number of NPRM comments received for a particular AD,
    - Number of AMOCs issued for an AD, and
    - Number of global AMOCs issued for an AD.
- Emphasis on training, particularly for lead airline designees, in view of the substantial revision of the specification and related AD ARC products.
- A new appendix to address "Crisis Communications" if significant, newsworthy compliance concerns arise. The appendix will address rapid establishment of interfaces with the DAH and FAA and will re-enforce operator awareness of the existence of FAA's internal (only) 24/7 hotline.

ATA will tabulate results from agreed on metrics and measure the results against established standards. The ATA will review the program for potential enhancements for any identified deficiencies within the ACCP.

Expected Benefits

The expected benefits of the original Lead Airline Process declined because the process was not initiated on a consistent basis or resources to conduct the Lead Airline Process were limited with the reduction in operator engineering resources and an increasing number of proposed ADs. The AD ARC expects the improvements to the Lead Airline Process will yield enhanced realization of the originally identified benefits as follows:

- Minimize differences between the coordinated and the proposed or final service information for addressing the unsafe condition;

- Minimize the occurrences of corrections to ADs, including revisions and supersedures of ADs;
- Feedback on proposed general notes and, according to specific criteria, identification of critical steps;
- Appropriate compliance through clear and concise technical data;
- A reduced need for AMOCs and AD compliance time extensions; and
- A mutual understanding and awareness of safety issues, risks, and margins among all stakeholders.

2.6.2 ATA iSpec 2200—Information Standards for Aviation Maintenance (Updated)

The AD ARC working groups submitted a change request to update ATA iSpec 2200 to include general guidance material on critical task differentiation, general notes to provide flexibility, and logic-based diagrams. ATA published the revised document with the requested changes in May 2011.

Expected Benefits

Incorporating the changes to the AD process in revised ATA iSpec 2200 updates the specification with new AD ARC-developed guidance on the format and content of SBs and allow DAHs to provide standardized information to better meet air carrier operational needs.

2.7 Other Guidance

2.7.1 Notice N8100.112, Placing Service Information in the Federal Docket Management System (New)

Notice N8110.112, Placing Service Information into the FDMS[25], explains when to place service information such as an SB, specified in an AD into the FDMS. The notice specifies that service information incorporated by reference in an AD must be placed into the FDMS. Written consent from domestic and foreign DAHs must be provided to the FAA directorate responsible for the product before placing service information documents proposed in an NPRM for IBR into the FDMS. This policy also applies to MCAI-related ADs. The FAA plans to incorporate the policy into the FAA AD Manual by September 2012.

Boeing provided written consent to place its SBs in the FDMS during the NPRM and final rule stages. Airbus, Bombardier, and Embraer independently submitted positions opposing posting their respective service information in the FDMS at the NPRM stage citing that the service information is available electronically via the DAH's Web site before the FAA's NPRM is published. The AD ARC noted, however, public access to DAH Web sites is limited.

[25] Issued on September 28, 2010.

Expected Benefits

Posting service information to the FDMS during the NPRM stage will enable the public to review and comment on the contents of the SB as it relates to the AD action.

2.7.2 FAA Policy Memoranda (New)

AEG

On March 20, 2009, the FAA issued a memorandum to AFS personnel to re-emphasize the role of the AEG and included a reference to its role in AD processes. The memorandum noted that the AEG is available to provide assistance and technical information. In addition, the memorandum endorsed early and frequent coordination with the AEG on technical issues to create a more effective communication network in the interest of safety.

On April 5, 2010, AFS–1 sent a memorandum to the Deputy Associate Administrator for Aviation Safety to request an increase in AEG staffing to support AD and AMOC process improvements and other continued operational safety enhancements. AEG staffing has increased.

24/7 AMOC Process

On March 1, 2010, AFS–1 sent to all AFS regional division managers, all AIR directorate managers, and all AEG managers a memorandum presenting a schedule for briefing the 24/7 urgent request AMOC process in the regional divisions.[26] AFS–1 attached a January 27, 2010, memorandum explaining that the briefings were in support of TAD's 24/7 availability to assist FAA PIs response to urgent requests (after normal business hours and to avoid significant air transportation disruptions) for AMOCs for ADs. The memorandum noted the 24/7 process reinforces the importance of early communication between PIs and the AEG when a technical issue arises from an AD and/or requires an AMOC.

Expected Benefits

The FAA policy memoranda served as an immediate communication to FAA field inspectors on the FAA's policies relating to the AEG and the 24/7 urgent request AMOC process. In addition, the memoranda ensure field personnel understand that the AEG is a key resource for technical issues and continued operational safety. The memorandum requesting an increase in AEG staff resulted in the FAA having the appropriate level of AEG resources to provide technical support and coordination between the ACO and CMO when AD compliance issues arise.

These communications are now formalized and included in the appropriate FAA and industry guidance documents.

[26]The FAA conducted seven field briefings from February 2010 to June 2010.

2.7.3 Air Transportation Oversight System Data Collection Tools (Updated)

The FAA issued a final revision to the FAA Air Transport Oversight System (ATOS) element performance inspection (EPI) data collection tools (DCT) on September 1, 2010, and a temporary revision to the safety attribute inspection (SAI) DCTs on June 23, 2011. The revisions include air carrier AD management best practices and align the elements with the revised FAA Order 8900.1 material. The FAA expects final publication of the SAI DCT by December 31, 2011. Specifically, the FAA revised the following DCTs:

- DCT Element 1.3.1, Maintenance Program;
- DCT Element 1.3.3, Maintenance Facility/Main Maintenance Base;
- DCT Element 1.3.4, Required Inspection Items;
- DCT Element 1.3.6, Airworthiness Directive Management; and
- DCT Element 2.1.1; Manual Currency.

Expected Benefits

The AD ARC expects the updated DCTs to encourage operators to follow the guidance in the new ACs on DAH best practices and AD management. In addition, the update should facilitate transition and change process within the FAA workforce by defining expectations clearly and institutionalizing the new processes and best practices.

2.7.4 FAA Mandatory Continuing Airworthiness Instructions (Revised)

The FAA revised the FAA MCAI[27] comment period from 30 days to 45 days in September 2009.

Expected Benefits

The extension in the comment period provides a consistent comment period for ADs affecting domestic and foreign manufactured transport airplanes.

2.7.5 Miscellaneous

AD Worksheet (Updated)

On May 10, 2011, the FAA issued a revised FAA AD worksheet to specify whether credit can be given for actions accomplished using an earlier revision of the service information. In addition, the FAA revised the AD worksheet to record the list of existing ADs affecting/overlapping the newly proposed AD actions that could lead to a noncompliance, confirm that no conflicts exist, and identify whether the DAH confirmed this information.

AD Templates (Updated)

On May 10, 2011, the FAA revised the AD template to include a compliance paragraph, regarding credit for actions accomplished using an earlier revision of the service information. In addition, the AD templates include a note that after accomplishing

[27] FAA revised the comment period to respond to AD CRT report recommendations before the AD ARC was formed. AD ARC determined no other revisions to the instructions are necessary.

actions, maintenance and/or preventive maintenance under part 43 is permitted provided the maintenance does not result in changing the AD-mandated configuration (reference 14 CFR § 39.7). The AD templates also include new notes that define use of the terms "refer to" and "in accordance with".

The FAA plans to add "required for compliance (RC)" to the template upon FAA issuance of the final version of AC 20–xxx.

Expected Benefits

- Providing credit for earlier SB actions reduces AMOC requests and the corresponding burden for preparing and processing those requests by the operator and the FAA.
- Certain future ADs will clearly state when normal maintenance methods, techniques, and practices are acceptable for AD-mandated design changes. The AD templates have a maintenance header with the following note for use in certain ADs that require design changes:

  Note: After accomplishing the actions required by paragraph (**), maintenance and/or preventive maintenance under 14 CFR part 43 is permitted provided the maintenance does not result in changing the AD-mandated configuration (reference § 39.7).

2.8 TRAINING

2.8.1 FAA Training (New and Updated Courses)

AEG Roles and Responsibilities

The AD process changes prompted one new course on AEG roles and responsibilities for classroom instruction and Web-based training via the Department of Transportation's electronic Learning Management System (eLMS). This course was designed by/for AFS and AIR.

24/7 AMOC Urgent Request Process

The FAA also completed the development of a 24/7 AMOC urgent request process via the eLMS training course for ASIs working in the field. The FAA anticipates the eLMS course will be available to the public via Internet access through a secured server for a fee by 2012.

Foundations for Principal Inspectors

The FAA also updated its training course No. 25704, Foundations for Principal Inspectors to included compliance planning and ASI decisionmaking guidance. This course is mandatory for airworthiness ASIs at all 14 CFR part 121 and 135 operators with 10 or more aircraft.

AD Management

The FAA updated its course (27100009) Airworthiness Directives (AD) Management to incorporate new guidance developed on the AD process.

Training Schedule

The FAA plans to require FAA personnel to attend FAA training related to AEG roles and responsibilities, AMOC processes, and AD management during the fiscal year 2013. This training will apply to the large inspector work force and it will take time to train the entire work force. The prototyping of the courses was completed between June and July 2011, and the first classes are scheduled for September 2011.

Expected Benefits

- The FAA expects the training courses will present information on AD process changes to ASIs emphasizing the FAA's oversight responsibilities and the use of good judgment when making AD compliance determinations and handling large-scale fleet AD noncompliance issues.
- The courses provide a means for receiving feedback from the ASI on the AD process changes.
- AIR ASEs will attend AEG roles and responsibilities training to ensure all involved parties across FAA business lines are appropriately informed of the AD process changes, organizational roles and responsibilities, and interactions.

2.8.2 Industry Training (New)

Industry stakeholders are expected to conduct training on the AD process changes during the fourth quarter of 2011 and throughout 2012. Such training will consist of the following:

- DAH employees. Emphasis on training, particularly for DAH employees involved in preparation, review, and approval of service instructions, focused on the final version of draft AC 20–xxx and ATA Specification 111.
- Lead airline designees. Emphasis on training focused on the substantial revision of ATA Specification 111 and AC 20–xxx, particularly provisions regarding general notes, criteria for determining RC steps, and preclusion of demodification. Other training topics to include AD ARC revisions of iSpec 2200, sections of FAA Order 8900.1 on AEG roles in AD processes, and of the FAA AD Manual. Any forthcoming FAA legal interpretation of part 39 also should be reviewed.
- Operator employees. Emphasis on training, particularly for operator employees involved in engineering and maintenance regulatory compliance, focused on (1) AC 39–9, (2) AC 20–xxx, (3) corresponding AD ARC revisions of sections of FAA Order 8900.1 on AD Management, ASI Decisionmaking, AEG roles in AD processes, AMOCs, and Risk Management Processes, and (4) FAA Order 8110.103A on AMOCs. Training also should include ATA Specification 111 on crisis communications and any forthcoming FAA legal interpretation of part 39.

Expected Benefits

Industry personnel will benefit by becoming aware of tools and process changes to be used by ASEs, ASIs, and the AEG's added roles and responsibilities.

2.9 Summary of Primary Guidance Implementing AD Process Changes

Guidance Organized By AD Process Phase			
Service Instructions	**AD Development**	**AD Implementation**	**FAA Oversight**
AC 20–xxx, Design Approval Holder Best Practices with Regards to Airworthiness Directives[28] • Critical task differentiation • Standard practices • General notes • Flexibility • 24/7 AMOC process • Overlapping/ conflicting ADs • Maintaining airworthiness • Global AMOCs • Ex parté communication	**FAA Airworthiness Directives Manual (FAA–IR–M–8040.1C)** • Earlier SB credit • Ex parté communication • AEG coordination	**AC 39–9, Airworthiness Directives Management Process**[29] • AD compliance planning • AD prototyping • AD sampling/ validation • 24/7 AMOC process • Global AMOCs • ASI participation in compliance planning and AD prototyping	**Order 8900.1, Flight Standards Information Management System (FSIMS)** • ASI decisionmaking • AD management process • AEG outreach • AEG roles and responsibilities • 24/7 AMOC process • Global AMOCs • Risk management process
ATA Specification 111,[30] **Airworthiness Concern Coordination Process** • AD process improvements • Ex parté communication • Metrics	**Notice 8110.112, Placing Service Information in the Federal Docket Management System**	**AC 120–16E, Change 1, Air Carrier Maintenance Programs** • AD management process in manual • AD records	**Order 8110.103A, Alternative Methods of Compliance** • 24/7 AMOC process • AEG coordination • AMOC coordination • AMOC delegation • Global AMOCs
ATA iSpec 2200, Information Standards for Aviation Maintenance • Critical task differentiation • Standard practices • General notes • Flexibility	**AD Worksheets** • Credit for actions accomplished using an earlier revision of an SB • List of existing ADs affecting/overlapping the newly proposed AD action that could lead to a noncompliance		**Order 8100.15A, FAA Organization Designation Authorization Procedures** Expands structural and certain global AMOC delegation for Type Certificate Organization Designation Authorization holders
	AD Templates • Added a compliance paragraph, regarding credit for actions accomplished using an earlier revision of the service information • Noted that after accomplishing certain actions, maintenance and/or preventive maintenance under part 43 is permitted provided the maintenance does not result in changing the AD-mandated configuration. • Included "refer to" and "in accordance with." [31]		**Order 8110.37E, FAA Designated Engineering Representative (DER) Handbook** Expands structural and certain global AMOC delegation
			FAA Training Courses • AD Management • Foundations for PI's Decisionmaking (addresses compliance planning and ASI decisionmaking) • AEG roles and responsibilities • 24/7 process training eLMS
			ATOS Data Collection Tools[32] Updated EPIs and SAIs to include AD process improvements

[28] Draft AC. FAA expects to issue the final AC by the end of 2011.
[29] Upcoming Change Notice to include minor additions.
[30] Draft ATA Specification 111. ATA expects to issue the final version of ATA Specification 111 in October 2011.
[31] RC will be added to AD template upon FAA issuance of the final version of AC 20–xxx.
[32] FAA will issue final SAI DCTs by December 31, 2011, temporary SAI DCTs issued on June 23, 2011; final EPI DCTs issued on September 1, 2010.

3.0 FOLLOW-ON ACTIONS

3.1 ADDITIONAL IMPLEMENTATION ACTIONS

The AD ARC identified an original target date of June 30, 2011, for completing its implementation actions. Because some of the ARC's primary implementation actions were not completed until June 2011 or later, the DAHs and operators needed additional time to incorporate AD policy and guidance changes into their processes and conduct training.

In addition, the FAA identified some guidance material as secondary deliverables which will be published after June 30, 2011. These documents typically are being revised only to reference the primary deliverables that contain AD ARC related guidance and information.

Draft AC 20–xxx was not published as final by June 30, 2011, because material on critical task differentiation in the AC was not fully developed or tested in time to support that schedule. The FAA plans to publish a revised draft AC that includes the discussion on critical task differentiation for public comment. The FAA anticipates the final AC will be issued by the end of 2011. See section 2.5.2 for a complete discussion of AC 20–xxx.

3.1.1 FAA Orders

The FAA will revise FAA Order 8900.1 to include secondary guidance on AD management and compliance planning in the section discussing continuing airworthiness maintenance programs.

3.1.2 S1000D—International Specification for Technical Publications

The SIWG is communicating with the Civil Aviation Working Group responsible for updating S1000D and will submit a change request in September 2011 to update S1000D to include guidance material on critical task differentiation and general notes to provide flexibility and logic-based diagrams. Revisions to S1000D will occur during the next publication cycle in 2012.

3.1.3 Advisory Circulars

The FAA plans to revise the following advisory material (secondary deliverables) to incorporate the revisions to the AD process:

- AC 120–79A, Developing and Implementing an Air Carrier Continuing Analysis and Surveillance System.
- AC 120–16E, Air Carrier Maintenance Programs[33].
- AC 39–7D, Airworthiness Directives.

[33] Although the FAA updated AC 120–16E as discussed in section 2.5.2, the FAA plans to incorporate the six elements of an AD management process and a cross-reference to FAA Order 8110.103 for information on AMOCs in another upcoming revision to the AC.

3.1.4 Maintain Airworthiness — Production versus In-service Aircraft

During its evaluation of the AD CRT and IRT recommendations, the AD ARC discussed the difference in regulatory treatment between an aircraft that has had design changes incorporated during production and an in-service aircraft that has been modified in accordance with an AD to incorporate the same design change. The ARC assigned the analysis of this issue to the ADWG and SIWG for potential resolution. The working groups were unable to resolve this issue. The ARC determined that this issue is outside of the scope of the AD CRT and IRT recommendations. This is an issue the FAA and industry may choose to review later. See sections A2.8 and B2.3 of this report for more information on this issue.

3.2 Communication Plan

3.2.1 Completed/Ongoing Communication Activities

FAA Activities

In support of communicating AD process changes, the FAA conducted seven regional field office briefings from February 2010 to June 2010. The briefings presented the background of the AD ARC and addressed communication among the ACOs, AEG, and CMOs; AEG roles and responsibilities; 24/7 AMOC support process; and RMP.

In addition, from March 2011 through July 2011, AIR conducted an outreach effort at 10 ACOs for ASEs that included a briefing on AD ARC related guidance changes and training.

Currently, the FAA is developing a plan to brief its workforce on AD ARC activity and new and updated guidance and FAA orders.

Industry Activities

Boeing published an article titled Industry Efforts to Improve Airworthiness Directive Implementation and Compliance in its AERO magazine (QTR_02.11). The article highlights the AD process changes and how the success of the AD ARC is expected to improve the current process for developing and implementing ADs.

3.2.2 Future Communication Activities

The AD ARC communication plan consists primarily of presentations to industry and the FAA on the AD ARC's implementation activities. The AD ARC identified part 121 air carriers, industry associations representing air carriers, business aircraft operators, engineers, and repair stations; FAA personnel at FAA headquarters and in the field; DAHs; and labor groups as audiences that would benefit from learning of the AD process changes. The ARC plans to address these audiences during trade shows, conferences, and FAA field briefings. For example, Boeing has scheduled a discussion of the AD process changes during its upcoming Fleet Team Emerging Issues meetings.

The ARC tailored its presentations to its audience noting that one presentation would not be suited for all audiences. The ARC recognized that joint FAA and industry briefings would be most effective as all stakeholders would attend and would gain insight from discussions with one another.

In addition, the ARC identified the following publications for disseminating information on the ARC's efforts:

- ARSA Newsletter/Articles,
- Boeing AERO Magazine,
- AeroSafety World Magazine, and
- Regional Horizons annual maintenance issue[34], and
- An FAA SAIB.

The ARC also established an ARC Web site http://www.faa.gov/aircraft/air_cert/continued_operation/ad/ad_arc/ as a means to communicate information on the AD process changes.

3.3 AD ARC RECOMMENDATIONS

3.3.1 Future FAA/industry Actions

The AD ARC recommends FAA and industry conduct the following activities either jointly or separately to close the AD ARC's activities.

- Assess the impact of FAA and industry training on AD process improvements;
- Pursue part 39 implications if needed;
- Enhance or create additional processes/guidance related to open/controversial issues; and
- Report progress on the implementation of AD ARC products not tracked by metrics to AVS–1.

3.3.2 Metrics

The AD ARC found that metrics are needed to monitor and measure the ARC's successes with the changed AD process. The ARC proposed to collect data on the following counts and/or measures associated with the ARC's key objectives.

- Percent of new SBs published using RC concepts that are anticipated to support ADs (for AD ARC stakeholder DAHs)[35]. (DAHs implementing concepts in DAH AC would collect this data.)

  The AD ARC anticipates an increasing percent of SBs will include the RC concepts.

[34] Regional Airline Association (RAA) publication.
[35] Some DAH will use different levels of RC. See discussion under section 2.5.2.

- Number of errors in ADs (including service information) resulting in a revision to an AD. (The FAA TAD would collect this data.)

  The AD ARC anticipates a trend of decreasing errors in ADs.

- Number of AMOCs issued—

  - To provide flexibility for example use of alternative methods, techniques and practices (such as alternative parts, materials, tools, equipment, test equipment and procedures) or use of alternative sequence of steps when accomplishing tasks;
  - To correct errors in ADs including service information; and
  - Resulting from conflicting ADs for example, new ADs causing demodification of an existing AD (that is AD noncompliance).

  (The FAA TAD and Boeing (only DAH currently delegated AMOC issuance) would collect AMOC data.)

  The AD ARC anticipates a decreasing trend of AMOCs due to the AD ARC enhancements.

- Percent of part 121 air carriers with all six elements of an AD management process in accordance with AC 39–9. (AFS would collect this data.)

  The AD ARC anticipates an increasing percent of part 121 air carriers will include the six elements of an AD management process in its AD management program.

- Number of voluntary disclosures related to AD compliance issues (§ 39.7) for part 121 air carriers. (AFS would collect this data.)

  The AD ARC will review and evaluate the trend data on voluntary disclosures as many variables can affect increasing or decreasing trends.

- Number of Enforcement Investigative Reports (EIRs) related to AD compliance issues (§ 39.7) for part 121 air carriers. (AFS would collect this data.)

  The AD ARC will review and evaluate the trend data on EIRs as many variables can affect increasing or decreasing trends.

- Number of flight disruptions and cancellations for part 121 air carriers due to AD compliance issues (§ 39.7) for example, delays of 60 minutes or greater and flight cancellations. (ATA and Regional Airline Association (RAA) would collect this data from their membership.)

  The AD ARC anticipates that the number of flight delays or cancellations related to AD compliance would be lower given the AD process changes such as 24/7 urgent request process should minimize such disruptions.

Analysis

The AD ARC believes that once the implementation actions are in place, an analysis of the counts and measures above should indicate whether certain AD process implementation actions are having the desired effect. The ARC recommends a review of the data and trend information twice a year. This review should be conducted in an appropriate forum[36] to allow industry to meet with key FAA and industry stakeholders to review the data and recommend any needed adjustments to the AD process changes or withdrawal of any AD process changes that are not working as planned.

In addition, ATA is developing certain metrics in its revision to ATA Specification 111 (see section 2.6.1). ATA may collect data from its membership on the number of times an AD is revised, the number of NPRM comments received for a particular AD, and the number of global AMOCs issued for an AD. ATA noted that the number of AMOCs issued is emerging as a key, relevant metric on the effectiveness of AD and ATA Specification 111 processes.

Case Study

The AD ARC stakeholders also propose to conduct a case study review over a multi-year period to review the actual application of the AD process changes during the phases of service information and AD development and implementation. The case study reviewers will provide feedback to stakeholders and TAD through agreed-on communication channels.

[36] The AD ARC recognized the Joint Management Team (JMT) as a possible forum in which to conduct this review. The JMT is an FAA and industry team comprised of senior industry leaders who meet quarterly to review rulemaking and policy issues related to aircraft certification and flight standards.

4.0 Implementation Action Table

IRT Report	
Recommendation No. 4.1	**Implementation Action**
The FAA should retain the right to ground any plane not in compliance with an applicable AD. Inspectors should not be required or expected to conduct any type of risk-assessment before taking action on AD noncompliance.	Order 8900.1, vol. 3, ch. 60, sec 1, ASI Decision making (April 23, 2011)
Recommendation No. 4.2	**Implementation Action**
The FAA should provide timely information about new AD requirements, in advance of compliance dates, to all relevant FAA field offices. Those offices should then be responsive to any carrier that requests assistance in the form of progress-towards-compliance audits or reviews, in advance of the AD compliance dates. The FAA should revise its workload management systems (including ATOS), so that it can accommodate such requests. The IRT believes that this particular form of collaboration should benefit the air carriers and the FAA, while protecting the traveling public by reducing the chances of major disruptions.	• FAA Order 8900.1, vol. 3, ch. 59, sec. 1, Airworthiness Directives Management Process (June 1, 2011) • FAA Order 8900.1, vol. 8, ch. 2, sec. 9, Aircraft Evaluation Group Outreach in the AD Process (June 20, 2011) • AC 39–9, Airworthiness Directives Management Process (June 1, 2011) • ATOS DCT (DCT Elements 1.3.1; 1.3.3; 1.3.4; 1.3.6; 2.1.1) • AD Management Training Course (2710009) • Updated Foundations for Principal Inspectors (25704)

AD CRT Task 1 Report		
Recommendation No. 1—Compliance Versus Noncompliance Decisionmaking Process	**Finding Nos.**	**Implementation Action**
The FAA should— • Develop a more objective, deliberative decisionmaking process for determining compliance versus noncompliance that can be used in any situation. • Reemphasize to ASIs that they have the authority to use professional judgment to determine whether noncompliance exists. • Develop a decision tool for use by ASIs to assist in using professional judgment when making compliance determinations. • Streamline and improve the process for making compliance determinations and make it impervious to external influence. • Eliminate single-person decisionmaking. • Clarify the roles and responsibilities of the AFS, AIR, OEM, and air carrier in the compliance decisionmaking process. • Review the AMOC process for enhancements and to ensure AEG personnel are included in the process. • Develop a process to raise ASI concerns on compliance determinations to a higher level. • Define and strengthen the communication process flow and make it impervious to external influence.	1, 3, and 5	• FAA Order 8900.1, vol. 3, ch. 60, sec. 1, ASI Decision making (April 23, 2011); includes a logical flowchart that provides systematic procedures that can be followed to eliminate single-person determinations and elevate concerns regarding AD compliance. Also, see AD CRT task 2 report, recommendation no. 8 implementation actions. • FAA Order 8900.1, vol. 3, ch. 59, sec. 2 addresses how to process AMOC requests. (April 12, 2011) • FAA Order 8110.103A, chg. 1, sec. 3–7, Is AEG Coordination Required? (June 30, 2011)

AD CRT Task 1 Report		
Recommendation No. 2—Service Bulletin Process	**Finding Nos.**	**Implementation Action**
The OEM and ATA, as appropriate, should— • Revise the way SBs are written to avoid mandating things that are not required to meet the safety intent of the SB. This would include ensuring air carriers have appropriate guidance and controls when authoring air carrier AD accomplishment documents. • Avoid drafting class 2 SBs. • Revise ATA Specification 111 for improvements to the Lead Airline Process.	2	• ATA revised ATA Spec, 111 to reflect the changes to the Lead Airline Process because of AD process improvements. • The FAA provides guidance to DAHs on compliance terminology for critical steps in service instructions in draft AC 20–xxx, Design Approval Holder Best Practices with Regards to Airworthiness Directives. The FAA plans to issue the final AC by the end of 2011. • iSpec 2200 (May 2011) and S1000D updates to include RC concept. Note: The AD ARC member DAHs have committed to implementing the FAA and ATA guidance as appropriate.

AD CRT Task 1 Report		
Recommendation No. 3— Air Carrier AD Control Process	**Finding Nos.**	**Implementation Action**
Each air carrier should develop processes and procedures to— • Prototype ADs before accomplishment. • Prevent class 2 ADs from being undone during normal maintenance actions. • Ensure AD configurations are maintained. • Ensure that when incorporating an SB anticipated to become an AD that the physical condition of prior work is reviewed when the AD is issued.	2	• The FAA issued AC 39–9, which includes operator best practices for (1) preventing ADs from becoming undone during normal maintenance action; (2) ensuring AD configurations are maintained; (3) prototyping ADs; and (4) ensuring prior service instruction work meets AD requirements. • The FAA issued corresponding changes to FAA Order 8900.1, vol. 3, ch. 59, sec. 1, Airworthiness Directives Management Process to reflect AD compliance planning. **Note:** The AD ARC member air carriers have committed to implementing the FAA guidance and the ATA and RAA will advocate the implementation of the guidance with their membership.

AD CRT Task 1 Report		
Recommendation No. 4—Industry Training Process	**Finding Nos.**	**Implementation Action**
Each air carrier, OEM, and repair facility should— • Implement training on the AD process and AD implementation. • Implement training to reinforce best wiring practices (for example, EAPAS).	4	• The FAA issued AC 39–9, which includes operator best practices for (1) implementing training on the AD process and AD implementation to include training recommendations for complex ADs and wiring practices (such as EAPAS). • FAA Order 8900.1, vol. 3, ch. 59, sec. 1, states operators should determine the need for training and specific labor skills (e.g., avionics, Nondestructive Testing (NDT), structures, etc.).

AD CRT Task 2 Report		
Finding No. 1	**Recommendation No. 1**	**Implementation Action**
The Team found that in some cases, service instructions were not sufficiently user-friendly and complete. These incomplete instructions resulted in widespread air carrier confusion because of the differences in the referenced service instructions and AD instructions. These deficiencies in service instructions have led to an increased demand for AMOCs and AD time extensions and/or exemptions. This has strained limited national aviation authority resources. The Team found that there is an opportunity for expanded use of the FTEI process within the OEM industry. Use of this will ensure air carrier's review proposed mitigating actions and make user-friendly inputs to draft OEM service instructions.	The Team acknowledges the benefits of current AD-friendly SB improvements, but recommends more focus on user-friendly improvements in service instructions as follows: • *Critical task differentiation*. Service instructions should explain the safety intent of the instructions. They should differentiate the critical tasks and task sequences requiring exact conformance from flexible advisory instructions for tasks that are common acceptable air carrier procedures. This differentiation will allow improved understanding of crucial AD requirements and consistent judgment in AD compliance. • *Simplified format*. Service instructions can be written in a simplified format that allows easy translation into an air carrier's work instructions. Standardizing service instruction format will facilitate user effectiveness by repetition in knowing where critical information is referenced. • *Maintaining airworthiness*. Service instructions should be written and traceable to avoid situations where previous AD compliance requirements are inadvertently	• ATA updated ATA iSpec 2200 ATA e-Business change request with "spec ready documentation" and include general notes in service information. Also includes standards for logic-based diagrams; figures, illustrations, and drawings; and guidance for identifying items as RC in SBs that are incorporated by reference in an AD. • ATA updated S1000D (Change Proposal Form (CPF) to include general notes in service information , standards for logic-based diagrams; figures, illustrations, and drawings; and guidance for identifying items as RC in SBs that are incorporated by reference in an AD.) ATA plans to release the revised S1000D in 2012. • The FAA issued draft AC 20–xxx on June 13, 2011, which provides guidance to DAHs on (1) allowing flexibility through

undone or modified through normal air carrier routine maintenance practices. (Refer to class 2 issues AD CRT task 2 report in sec. 2.2.5, finding and recommendation No. 11, for additional information regarding this issue.)

- *Flexibility as appropriate*. When compatible with the corrective action intent of the AD, service instructions should incorporate general notes providing air carriers latitude to use (1) acceptable alternative materials and approved internal procedures without requesting an AMOC on each deviation or (2) where applicable, the option to use their engineering authority[37].
- *Standard practices*. The aviation industry has many processes for performing maintenance and modifications that have been standardized and proven effective. Service instructions should refer to these standard practices in which air carriers have experience, confidence, and training.
- *Corrective action decision guidelines*. In some situations, alternative corrective actions are provided to the air carrier for

the use of general notes; (2) standards for logic-based diagram format, content, and location; (3) using standardized format and content for service instructions that will become ADs; (4) use of unambiguous language; (5) figures, illustrations, and drawings; (6) maintaining airworthiness; and (7) standard practices. The FAA plans to issue a revised draft AC to include compliance terminology for critical steps and address public comments in the near future. The FAA expects to issue a final AC by the end of 2011.

[37] 14 CFR § 43.13: Performance rules (general) allows air carriers to use maintenance instructions in their manual in place of the OEM maintenance instructions when performing maintenance, alteration, or preventive maintenance.

compliance with the AD. Incorporating logic-based decision diagrams in service instructions would assist air carriers in choosing the best corrective action path, such as continued repeat inspection or termination repair, based upon the discovered condition and compliance time.

- *Detailed instructions*. Service instructions must make clear whether a figure or drawing is the authoritative instruction or only an installation aid. Service instruction text and drawings must be in agreement with each other to avoid subjective misinterpretation. In addition, service instructions should no longer contain ambiguous terms, such as "approximately", to define allowable tolerance ranges and performance criteria.

AD CRT Task 2 Report		
Finding No. 2	**Recommendation No. 2**	**Implementation Action**
The Team learned that the AEGs were not playing a significant role in either the AD review process or the operational suitability determinations. This was confirmed through interviews with AEG personnel as well as FAA principal inspectors. The Team recognizes the key role the AEG can play in the review and implementation of an AD.	Strengthen the role of the AEG in developing and implementing ADs. Ensure ASIs know that the AEG is a resource for reviewing the air carrier's AD installation instructions and that the AEG acts as the liaison between the CMOs and the ACO on AD implementation issues. When questions arise, make the AEG part of these processes to make compliance with the AD as seamless as possible. This approach will help to prevent future disagreements between the FAA and the air carrier.	**Guidance** • FAA Order 8900.1, vol. 3, ch. 59, sec. 2, incorporated AIR–ANM–029–WI. • FAA Order 8900.1 vol. 3, ch. 59, sec 4, incorporated AIR–ANM–029–W2 • FAA Order 8900.1, vol. 8, ch. 2, sec. 2, AEG Roles and responsibilities. • FAA Order 8900.1, vol. 8, ch. 2, sec. 9, AEG Outreach • Revised the FAA AD Manual, FAA–IR–M–8040.1C • FAA Order 8110.103A (AMOC) • Updated draft FS Order 1100.1 AFS Organizational Handbook • Updated FS 1100.5C, FAA Organization—Field • FAA Order 8900.1, vol. 3, ch. 60, sec. 1, ASI Decisionmaking • FAA Order 8110.107, MSAD (early AEG involvement in continued operational safety

decisionmaking process.)

Training

- AEG Roles and responsibilities Classroom (21000079)
- AEG Roles and responsibilities Web-based (27100159)
- eLMS Training on the 24/7 AMOC process

Other

- 24/7 AMOC process roadshow (field briefings)
- Issued an AEG staffing memo
- AFS–1 issued a memo on AEG role and reconnect.
- AFS issued a 24/7 AMOC process briefing memo to the FAA field inspectors.

AD CRT Task 2 Report		
Finding No. 3	**Recommendation No. 3**	**Implementation Action**
The Team found the Lead Airline Process supports industry collaboration objectives, but may need to be updated to reflect today's OEM and air carrier supporting internal processes. As the aviation industry business environment has changed, the impact thresholds for activating full network coordination and full-scale prototyping have increased. The Team also observed that the ex parté policy may not be well understood by the FAA and air carriers. Many in the FAA and the industry believe that ex parté communications are restricted to data requests from the FAA after an NPRM is published in the Federal Register. The Team noted that the FAA can communicate with the lead airline after NPRM publication; however, the FAA must document all communications and place them in the rulemaking docket.[38]	The ATA should review and update ATA Specification 111 to address issues brought forward in this report with emphasis on the following items: • A goal of the Lead Airline Process should be to contribute to clear and accurate service instructions that avoid prescriptive processes where standard practices are available and applicable. Ideally these instructions contribute to effective implementation by a technician. The process should lend particular attention to developing service instructions involving previous overlapping ADs or a series of ADs or SBs on (1) the same component, (2) wiring and other actions dependent on workmanship, and (3) class 2[39] type actions that are easily reversible in future maintenance. In these cases, prototyping of proposed service instructions on inservice airplanes is particularly important, and OEM participation should be considered. The process should—	• ATA revised ATA Spec. 111 to reflect the changes to the Lead Airline Process as a result of AD process improvements. The revision also addressed ex parté contacts. • The FAA issued AC 39–9, AD Management Process which includes best practices for operators on AD pre-planning, AD implementation, AD verification programs, and prototyping of work instructions. The AC also suggests inviting ASIs to participate in compliance planning activities. • AC 39–9 [Change] suggests inviting ASIs to participate in prototyping activities. • The FAA issued a section on Evaluating an Airworthiness Directives Management Process in FAA Order 8900.1, vol. 3,

[38] See discussion on Ex Parte Contacts, page 6, FAA Airworthiness Directives Manual, dated January 23, 2007; FAA–AIR–M–8040.1.
[39] This type of AD requires a configuration change that, after implementation, potentially has a higher vulnerability of being undone through the air carrier's standard maintenance practices or operations.

	○ Identify differences in airplane configurations relevant to the proposed service instructions. ○ Ensure lead airlines are selected according to qualifications, capability, and commitment to the process. ○ Predispose service instructions to support AD compliance planning objectives cited in the two bullet points directly below. • The ATA should periodically review the Lead Airline Process to ensure the continuing effectiveness of the process. • The ATA should coordinate the update to ATA Specification 111 with the OEM. This will help to streamline and better integrate the Lead Airline Process with OEM fleet support processes.	ch. 59, sec. 1 which states an operator may request/invite ASIs to the AD planning meeting. • The FAA revised the FAA AD Manual (FAA–IR–M–8040.1C (ch. 3)) to clarify ex parté communication. • The FAA issued draft AC 20–xxx on June 13, 2011, which provides guidance to DAH on ex parté contacts. The FAA expects to issue a final AC by the end of 2011.
	• The ATA should add to ATA Specification 111, or develop a new specification to address (upon adoption of an AD) AD compliance planning that includes the following industry guidelines: ○ Invite the ASI to air carrier compliance planning sessions and AD compliance prototyping for better understanding of issues.	

- Ensure the accuracy and clarity of the engineering order (EO) or other implementation document. The air carrier should consider silent prototyping where a technician prototypes the EO without verbal or other assistance.
- Augment air carrier compliance planning with an AD verification program.

- The ATA, in coordination with the FAA, should takes steps to clarify to the industry and FAA personnel that ex parté communications can take place if the communications are fully documented and placed in the rulemaking docket for public review.

AD CRT Task 2 Report		
Finding No. 4	**Recommendation No. 4**	**Implementation**
The Team found systemic problems in the AD process as follows: • Multiple ADs affecting airworthiness in the same area of the airplane resulting in overlapping and confusing mandates for air carriers. This can lead to inadvertent noncompliance or reversal of previous AD actions. • Occasionally, the OEM's service instructions are not available when the AD NPRM is issued. In addition, copies of service instructions are not included in the Government's electronic regulatory docket system. In either case, this prevents air carriers from having the full comment period to comment on the specifics of the service document. • ADs generally have an aggressive installation timeline. Because of the urgent nature of AD tasks and the need for planning to minimize aircraft out-of-service time, air carriers frequently accomplish service instructions ahead of the AD issuance date. This creates an exposure to	The Team recommends the following related to AD development: • Charter a joint team made up of representatives from the FAA, OEM, and air carriers to resolve finding No. 4. The overarching goal is to ensure that the AD development process is effective and efficient and results in a compliant product for air carriers. • OEMs should streamline service instruction development and revision processes to expedite release to air carriers. • OEMs should review Intellectual Property and Export Compliance policies to allow easier public access to NPRM- and AD-referenced service instructions via the electronic regulatory docket system. • At a minimum, the first compliance deadline should always be stated in the NPRM and AD. • For situations involving multiple structural service documents and ADs, the FAA should explore innovations in AD tracking and management (for example, a zonal approach, where tasks are compiled covering all	The collective efforts of the AD ARC's implementation actions will assist with ensuring the AD process is efficient and effective. In addition, the FAA issued draft AC 20–xxx on June 13, 2011, which includes a discussion of the use of "later approved parts" language in the SB in sec. 5–5, Minimizing AMOCs for Design Changes. The FAA expects to issue a final AC by the end of 2011. Participating DAHs agreed to evaluate the list of process improvements for expediting release of service instructions and documenting the feasibility of implementing the improvements within their organization. These DAHs each submitted a letter to the FAA outlining their review of the process improvements and implementation plans relative to streamlining service instruction development and expediting service instruction release to air carriers.

noncompliance when there are changes in the final AD that differ from the originally released service document. The Team noted that as part of a process improvement effort, in 2006 the FAA signed a working agreement with Boeing Commercial Airplanes on Agreed Principles and Practices for AD-friendly service bulletins related to the Boeing transport fleet. The agreement was developed as part of a joint effort by the FAA and an OEM to identify and implement improvements to the format and quality of service instructions and ADs. The Team acknowledged that the joint effort is a major step in improving the FAA's AD process, provided that certain recommendations in sec. 2.2.2 of the AD CRT Task 2 report regarding service instructions are incorporated to simplify air carrier implementation.	AD requirements for a given area). • Air carriers must have a process in place to continually verify AD accomplishment. (Also see discussion in recommendation No. 3 above and sec. 2.2.4 of the AD CRT Task 2 report).	See section A.2.4. FAA–IR–M–8040.1C, ch. 8 specifies to allow credit when appropriate for actions accomplished using an earlier version of the service instructions than identified in the AD action. On September 28, 2010, the FAA issued Notice N8110.112, Placing Service Information in the Federal Docket Management System (FDMS). The notice specifies that the FAA must post service information incorporated by reference into the FDMS and may post service information at the NPRM stage upon approval from the DAH. This will make compliance times visible to the public. In addition, the FAA plans to include a range of compliance times in the NPRM preamble for those NPRMs that do not include specific compliance times in the regulatory text of the NPRM. The FAA received responses from Airbus, Bombardier, and Embraer, respectively that provided their position for posting service

		information at the NPRM phase. The DAHs did not agree to allow posting of their service information identified in an NPRM citing that the service information is available electronically via the DAH's Web site long before the FAA's NPRM is published. Boeing previously provided permission to post its service instructions at the NPRM phase. The FAA updated the AD Worksheet (domestic only) to list ADs affecting/overlapping the current AD action that could lead to a noncompliance; confirm that no conflicts exist; and identify that the DAH confirmed this information. The AD Worksheet also instructs ASEs to specify whether credit can be given for actions accomplished using an earlier revision of the service information. FAA updated the AD template to include a paragraph on maintenance following certain mandatory design changes. AD templates also include a Compliance paragraph, regarding

		credit for actions accomplished using an earlier revision of the service information. The FAA issued draft AC 20–xxx on June 13, 2011, which provides guidance to DAH on (1) checking for conflicting/overlapping ADs; (2) use of later-approved parts in service information; (3) ex parté communications; and (4) potential process improvements that reduce flow time and improve quality for service instruction development. The FAA expects to issue a final AC by the end of 2011. The FAA issued AC 39–9, which suggests operators have a process in place to continually verify AD accomplishment.

AD CRT Task 2 Report		
Finding No. 5	**Recommendation No. 5**	**Implementation Action**
Overall, the Team found that the MCAI process works well. However, the Team noted that addressing the anomalies above will further enhance MCAI effectiveness.	In view of foreign authorities' AD rulemaking processes (for example, foreign national aviation authorities' apparent lack of a comparable Lead Airline Process and reduced comment periods for proposed MCAIs), the FAA should extend the typical comment period for MCAI NPRMs. The comment period should be extended from 30 to 45 days, the standard for noncontroversial FAA NPRMs. In addition, the FAA and foreign national aviation authorities should work to harmonize AD processes.	The FAA extended the comment period from 30 to 45 days for MCAI NPRMs to standardize with domestic NPRMs. The FAA Transport Airplane Directorate also is harmonizing certain terminology used in transport airplane ADs with foreign civil aviation authorities through its business plan process.
Finding No. 6	**Recommendation No. 6**	**Implementation Action**
The Team found that it is important to identify the following through air carrier manuals and FAA guidance material and policy: (1) the elements for effective AD compliance planning and implementation, (2) the specific associated processes and tasks that comprise these elements, and (3) the individuals with authority and responsibility for the elements.	• The FAA should revise the Air Transport Oversight System (ATOS) guidance material for ASIs to align these tools with the above discussion as appropriate.[40] • ATA should review the primary elements for air carrier internal compliance planning discussed above and disseminate like information to the industry. (See above discussion of the Lead Airline Process under section 2.2.2, AD Development, AD CRT	AC 39–9 includes best practices for pre-planning, implementation, AD prototyping, and AD verification programs. The AC includes CMO and Flight Standards District Office (FSDO) participation in compliance planning. CMO and FSDO participation in AD prototyping will be addressed in an upcoming Change notice to AC 39–9.

[40] FAA Safety Attribute Inspection (SAI) Data Collection Tool, 1.3.6 AD Management (AW) and the FAA Element Performance Inspection (EPI) Data Collection Tool, 1.3.6 AD Management (AW).

	Task 2 report.) • The FAA and ATA jointly should develop a policy for CMO participation during the air carrier's AD compliance planning process. CMO participation during the process will educate the ASIs on the air carrier's AD compliance plan recommendations. However, the CMO should not perform a quality control function or require a signoff. Currently, FAA principal inspectors are invited to reliability board meetings at some air carriers but otherwise are not involved in developing EAs. The intent of advance CMO participation is to obviate the need for AMOCs and reduce paperwork violations and infractions. • CMOs should participate in AD prototyping. However, this monitoring should not require a signoff from the CMO or be a required step to completing any work.	ATA notified its membership of the availability of AC 39–9 via email. FAA Order 8900.1, vol. 3, ch. 59, sec. 1 describes the ASI's role in the air carrier's AD compliance planning meetings. Updated ATOS DCTs (EPI final revision issued on September 1, 2010; SAI temporary revision issued on June 23, 2011, with final version expected by the end of 2011).

AD CRT Task 2 Report		
Finding No. 7	**Recommendation No. 7**	**Implementation Action**
During the interviews with principal inspectors, it was clear to the Team that the FAA field offices[41] do not communicate with the AEGs on AD issues. In addition, the field offices do not consistently communicate with the ACOs when AD compliance issues arise.	• The FAA should establish a formal notification and coordination policy on how to handle issues where compliance is unclear. The policy should clearly delineate the AEG's role in assisting with noncompliance determinations, specify who has decision authority, and provide guidelines for elevating issues of disagreement for resolution. (Also see recommendation No. 8 below). Such a policy will enhance overall coordination efforts and help the AEG to better coordinate with the ACO. • The FAA should consider an organizational and procedural change to ensure FAA field offices have a direct link to the AEG. This will help the CMOs obtain technical advice on ADs and all issues concerning certificate management.	See Implementation Action for AD CRT task 2 report, finding No. 2. The FPWG deemed no organizational change was necessary and instead increased AEG staffing levels.

[41] FAA field office refers to (1) the CMOs that specialize in the certification, surveillance, and inspection of major air carriers and part 142 training centers and (2) the Flight Standards District Offices (FSDOs) that conduct certification, surveillance, and investigation of all other types of aircraft operations.

AD CRT Task 2 Report		
Finding No. 8	**Recommendation No. 8**	**Implementation Action**
The Team found that during the events precipitating this review, FAA administration of the AMOC process was reported to be inconsistent and sound technical judgment did not always govern decisions.	Under all circumstances, FAA technical personnel must be consistent in reviewing, approving, and applying the processes under their responsibility. If there are concerns regarding outside undue influence, the affected party must seek guidance from organizations having the appropriate level of ability and authority to provide the guidance required to address the concerns. FAA policymakers must ensure individuals responsible for the control of the AMOC processes are fully aware of the scope of their responsibilities. They should also be aware of the available recourse for appropriate management guidance where required. Educating these individuals will help ensure proper and prompt technical resolution of problems. Specifically, the Team recommends the following: • The FAA should, in coordination with industry, charter a working group to review and develop a means to strengthen the AMOC process. The group's charter should include a review of the following:	<u>Guidance</u> • FAA Order 8900.1, vol. 3, ch. 60, sec. 1, ASI Decision making (includes a logic flowchart that provides step-by-step procedures that can be followed to eliminate single-person determination and to elevate concerns regarding AD compliance.); • FAA Order 8900.1, vol. 10, ch. 3, sec. 1 revised the RMP (January 10, 2011) to include ADs; • FAA Order 8900.1, vol. 3, ch. 59, sec. 2, Processing an AMOC Proposal which provides guidance on how AFS ASI should coordinate with AIR and how approval/denial letters for AMOCs should be processed; • FAA Order 8900.1, vol. 3, ch. 59, sec. 3, Processing AMOC Proposal to ADs which explains the ASI Role in the AMOC process; and

	○ Communication channels; ○ Simultaneous coordination of an AMOC with the ACO and the CMO; ○ Concurrence (that is, ACO expeditiously receives concurrence from AEG on the AMOC, and AEG advises CMO); ○ Further delegation to designated engineering representatives (DER) and authorized representatives (AR), to include AMOCs that address issues in the systems and equipment, payloads, and	• FAA Order 8900.1, vol. 3, ch. 59, sec. 4, Requesting 24/7 Support for AMOCs. Updated the following FAA Orders to promote widespread use of single structural airplane AMOCs and certain global AMOCs. FAA Order 8100.15A, Organization Designation Authorization Procedures (June 10, 2011);

	airplane performance areas; ○ Delegation of AMOCs to other ACOs; and ○ Staff availability on a 24/7 basis (ACO, AEG, and CMO). • The Independent Review Team made a recommendation that "[i]nspectors should not be required or expected to conduct any type of risk-assessment before taking action on AD noncompliance." The Team agreed with this finding as supporting the necessary enforcement needed once an airplane has been determined to be noncompliant. However, the Team developed a supplemental process to help the ASI first coordinate a valid determination of compliance in cases where the condition is not obvious. The Team recommends that the FAA: ○ Develop further guidance and training to assist FAA staff in correctly determining noncompliance. ○ Develop a formal policy regarding ASI decisionmaking. The policy should emphasize the technical authority of the ACO and the FAA's position on the authority of ASIs to use professional	FAA Order 8110.37E, Designated Engineering Representative (DER) Handbook (March 30, 2011), and FAA Order 8110.103A, Alternative Methods of Compliance and Change Notice (September 29, 2010 and June 30, 2011.) **Training** Updated profile for Foundations for PIs (25704) and mandated training for all part 121 and 135 principal maintenance inspectors. **Other** Updated ATOS DCTs (1.3.1; 1.3.3; 1.3.4; 1.3.6; and 2.1.1).

	judgment when determining compliance. To eliminate single-person determinations, the policy should address any conflicts that arise on an AD or AMOC by requiring the CMO to elevate its concerns first to the AEG for resolution. The FAA should develop a decisionmaking flowchart as a guide for ASIs making compliance determinations. An ASI decision flowchart is provided to demonstrate the notion the Team wishes to convey. (See appendix C to AD CRT task 2 report.)	
Finding No. 9	**Recommendation No. 9**	**Implementation Action**
The Team noted that air carriers and CMOs often are not aware of applicable global AMOCs that the FAA has approved. Some air carriers and CMOs misinterpret the requirement that air carriers notify their CMO before implementing a global AMOC as a requirement to gain the approval of the CMO.	The FAA and industry should develop a process to approve all AMOCs as global unless the requesting air carrier specifically states that it does not want the AMOC shared. The global AMOCs would be posted on OEM Web sites accessible to all air carriers in a way that protects the intellectual property rights of the OEMs and the air carriers where appropriate.	• Draft AC 20–xxx, (1) documents original equipment manufacturer (OEM)/DAH best practice of implementing a formal process to review all AMOC requests as candidates for issuance as global AMOCs when applicable and (2) suggests a DAH should consider posting global AMOCs

	The industry and the FAA also should ensure that CMOs do not require air carriers to gain their approval to implement a global AMOC.	issued against their products on a Web site that is accessible by operators; • AC 39–9, Airworthiness Directives Management Process, specifies DAH best practices on AMOCs; • AC 39–9 [Change] specifies for the operator requesting an AMOC to request a global when appropriate, give the FAA permission to share the subject of AMOCs with DAHs so the DAH can determine if the AMOC could be global and when consulting with the DAH on AMOCs, allowing the DAH to use the AMOC request as a basis for a global AMOC. • FAA Order 8110.103A, CHG 1, AMOCs to create a new paragraph 4–3f. Sharing AMOC Requests with OEM/DAHs; and • FAA Order 8900.1, vol. 3, ch. 59, sec. 3, Processing AMOCs to ADs.

AD CRT Task 2 Report		
Finding No. 10	**Recommendation No. 10**	**Implementation Action**
The Team found that although air carriers had access to the ACO, the ACO found it more efficient to collectively address the volume of air carrier issues through the OEM. The ACO often was occupied and not available to individual air carriers. As a result, the OEM was the best positioned to develop an overall picture of developments. In effect, the OEM operated a "war room," orchestrating conference calls for air carriers, CMOs, and ACOs.	Responsive communication and industry collaboration are essential in crisis situations involving widespread AD compliance issues affecting air carriers. The ACO and OEM should develop contingency procedures and disseminate them internally in advance of future events. This will ensure that points of contacts are established for air carrier use in expediting resolution of fleet wide issues. The ATA may facilitate this process provided that air carriers immediately advise the ATA of a significant compliance issue that may be widespread and newsworthy.	• AC 39–9 [Change] includes a recommendation that operators develop a process that may reference a conflict resolution process to coordinate AD compliance matters needing immediate resolution with the local FAA office. In addition, the AC suggests air carriers that are members of industry associations consider using established processes such as ATA Specification 111 or similar processes developed by other associations, for significant compliance issues that may be widespread and newsworthy. This could include coordination with associations, regulatory authorities and OEMs/DAHs. The AC also includes a discussion of 24/7 AMOC support in appendix 1 to the AC. • FAA Order 8900.1, vol. 3, ch. 60, sec. 1 ASI Decisionmaking includes all ASIs should determine what resources are

		needed to solve difficult and controversial issues. ASIs are directed to seek guidance from internal FAA resources, including the CHDO, PI, AEG, ACO, Regional Office, and/or appropriate FAA headquarters-level branch.
		• Draft AC 20–xxx, includes a section on 24/7 AMOC support that specifies to help prevent grounding aircraft due to potential AD noncompliance by an air carrier, a DAH should develop a process for 24/7 support. • ATA Specification 111 will include an appendix on "Crisis Communication" to rapidly establish contact with the FAA and DAH for high-visibility issues of potential noncompliance.

AD CRT Task 2 Report		
Finding No. 11	**Recommendation No. 11**	**Implementation Action**
The Team found that unless otherwise directed, maintenance technicians working in the vicinity of the class 2 installations any time after the AD is implemented, typically employ standard maintenance practices. This raises the risk of inadvertently taking the airplane out of compliance with elements of the AD.	Air carriers should develop practices to address normal maintenance or other actions that could possibly demodify an AD configuration, particularly class 2 ADs. These could include the following: • Process enhancements or physical marking of AD installations for nonstructural ADs. This alerts mechanics to the presence of an AD installation in the area where they are working. • Quality assurance sampling of AD projects to verify the correct setup, and/or a sampling program that physically verifies demodification has not occurred.	AC 39–9, Airworthiness Directives Management Process addresses AD sampling.

AD CRT Task 2 Report		
Finding No. 12	**Recommendation No. 12**	**Implementation Action**
The Team found that the amended regulatory language in §§ 39.7 and 39.9 could be interpreted as requiring every element of every applicable AD to be in strict compliance with the mandated configuration on every flight. This finding adds emphasis to (1) the need for ADs and service instructions incorporated by reference in ADs to clearly state the safety intent and instructions essential to meeting that intent, (2) the use of professional judgment in compliance determinations, and (3) measures to better plan and monitor AD compliance.	The FAA should review §§ 39.7 and 39.9, and, if necessary, revise those sections to clarify that AD compliance is an action required of the operator; it is not necessarily determined by a strict comparison of the aircraft to AD-specified configurations.	• FAA issuance of proposed legal interpretation on §§ 39.7, 39.9, and 39.11; • AC 39–7D Airworthiness Directives (upcoming Change); • AC 39–9 Airworthiness Directives Management Process; • FAA Order 8110.103, AMOCs, CHG 1; • AC 120–16E Air Carrier Maintenance Programs, Change 1, (June 7, 2011); and • AC 120–79A (Continuing Analysis and Surveillance Systems (CASS))

5.0 CONCLUSION

The AD ARC's implementation actions combined with FAA and industry training institutionalize the AD process improvements presented in this report and support the goals of a compliant product and the avoidance of future large-scale disruptions in scheduled air transportation. The ARC expects the AD process improvements to promote better communication and coordination among FAA offices and between FAA and industry stakeholders on AD issues. Specifically, the changes to FAA policy and DAH processes will facilitate AD compliance. For example, in SBs that are to be incorporated in ADs, specifying what items are critical to accomplish to correct the unsafe condition will reduce the scope of the required actions thereby reducing the potential AD noncompliance determinations.

Other improvements such as referring to industry standard practices when possible, using general notes for flexibility, logic diagrams, and clarifying figures that are authoritative versus reference material will standardize SB format, facilitate AD implementation, and serve to reduce potential noncompliance issues. Further, operator-established AD management and compliance planning, and AD verification processes along with ASI participation in air carrier/operator compliance planning and AD prototyping should support early identification of potential AD compliance issues and appropriate resolution prior to the AD compliance deadline, as well as facilitate continued compliance. All of these improvements will mitigate potential AD compliance issues and the resulting operational impacts.

The AD ARC notes it has already received positive feedback from FAA and industry on the 24/7 process changes to request AMOCs and the improved ASI communication and coordination process with other FAA offices and the operator on suspected issues of AD noncompliance. The ARC finds its success largely depends on the industry adopting the best practices outlined in the published ACs. The ARC proposes metrics be analyzed to monitor and measure the success of the changed AD process. Based on the metrics, further process improvements may need to be made or certain practices discontinued if identified as not practicable. In addition, the FAA plans to issue a communication to industry discussing the ARC's activities and advocating the need for industry to adopt the best practices regarding ADs in recently issued FAA and industry guidance.

As an implementation ARC, the AD ARC believes it successfully addressed each of the AD CRT and IRT recommendations, although some of the recommendations may not have been implemented exactly as stated. For example, the FAA did not reorganize the AEG as the AD CRT recommended but made guidance, communication, coordination, and process changes regarding the AEG and increased AEG staffing.

The AD ARC also found it impracticable to approve all AMOCs as global as suggested by the AD CRT because most AMOC requests address unique configuration issues or situations that may not be applicable to other aircraft. The AD ARC instead supported that all AMOC requests that have general applicability be reviewed to determine whether a global AMOC can be issued. The AD ARC did not find the AD CRT recommendation

to delegate AMOCs from issuing ACOs to other ACOs an efficient or effective strategy because other ACOs do not have the information related to the safety issue or a familiarity with the airplane design. However, the AD ARC supported the delegation of structural single-airplane AMOCs and certain global AMOCs to DAH designees.

In addition, only one DAH participating on the ARC agreed to provide permission for posting service information at the NPRM stage to the FDMS as the AD CRT suggested; the other DAHs oppose this practice. For critical task differentiation, all DAHs agreed to differentiate critical tasks in SBs using the RC concept, but for some DAHs (Airbus and Bombardier) the level of detail is less than what the other DAHs agreed to implement.

Finally, the ARC provided suggested revisions to ATA Specification 111 to incorporate the changes to the AD process but the ARC acknowledged that ATA Specification 111 is not used by non-U.S. DAHs which operate under a different regulatory system. These non-U.S. DAHs acknowledge they have corresponding processes to prototype, respectively validate, ADs with their operators.

The AD ARC also notes that although the AD ARC reviewed part 39 as recommended and requested an FAA legal interpretation to clarify AD compliance, the resolution of part 39 issues is incomplete. The FAA's proposed AD interpretation is that after the implementation of an AD every element of that AD must be in the mandated configuration on every flight. As of the release of this report, the FAA has not finished its evaluation of public comments on the proposed interpretation. The ARC recommends that the AD process improvements presented in this report be reviewed for their efficacy upon release of a final legal interpretation and be affirmed, revised, or rescinded if needed.

APPENDIX A—SERVICE INFORMATION WORKING GROUP

A1.0 INTRODUCTION

The AD ARC formed the SIWG to address AD CRT recommendations related to the development of service instructions. The SIWG's key objective was to revise the way service instructions are written to avoid mandating actions not required to meet the safety intent of the AD.

The SIWG's 21 members and 1 observer represented AFS, AIR, foreign aviation authorities, U.S. air carriers, an air carrier association, U.S. and foreign airplane manufacturers, and repair stations. The SIWG held monthly meetings and teleconferences to evaluate and develop implementation actions for its assigned recommendations. The SIWG co-leads tracked its progress using project plates that contained the assigned recommendation, the expected outcome/deliverables, and individual milestone tasks. The SIWG co-leads provided status updates to the AD ARC members at the AD ARC meetings noting if the working group would meet its schedule to complete its review and analysis of the assigned recommendations or had encountered difficulties.

A2.0 ASSIGNED TASKS

The AD ARC assigned the SIWG the following 14 recommendations to evaluate and develop implementation actions:

- Write service information to avoid mandating things not required;
- Avoid drafting class 2 SBs;
- Critical task differentiation;
- Simplified format;
- Maintain airworthiness;
- Flexibility as appropriate;
- Standard practices;
- Corrective action decision guidelines;
- Detailed instructions;
- Streamline service information development and revisions;
- Revise ATA Specification 111;
- Use Lead Airline Process to develop service instructions;
- Review Lead Airline Process to confirm effectiveness; and
- Coordinate update to the Lead Airline Process.

The SIWG documented its evaluation of each recommendation and the implementation action in a summary sheet report. The SIWG addressed the 14 recommendations in 9 summary sheets combining recommendations where possible.

The SIWG also documented a separate assigned task to address maintenance of mandatory design changes in a summary sheet. The SIWG evaluated a proposal from the ADWG that depended on the development of new Airworthiness Limitations (AWL) to protect safety-critical configurations mandated by an AD.

The complete unedited working papers that documented the AD ARC's working groups' review, analysis, and decisions are available for viewing and download from the AD ARC Web site at http://www.faa.gov/aircraft/air_cert/continued_operation/ad/ad_arc/. Each assigned task, its implementation action, and outcome are excerpted from the SIWG summary sheet reports and presented below.

A2.1 Corrective Action Decision Guidelines

Task

The SIWG evaluated the following AD CRT recommendation:

> The Team acknowledges the benefits of current AD-friendly SB improvements, but recommends more focus on user-friendly improvements in service instructions as follows:
>
> - *Corrective action decision guidelines*. In some situations, alternative corrective actions are provided to the air carrier for compliance with the AD. Incorporating logic-based decision diagrams in service instructions would assist air carriers in choosing the best corrective action path, such as continued repeat inspection or termination repair, based upon the discovered condition and compliance time period.
>
> (AD CRT task 2 report, recommendation No. 1, bullet No. 6)

Review of Issue/Problem

Logic-Based Diagrams

The SIWG noted that service instructions are occasionally and necessarily complex. A complex service instruction specifies multiple airplane configurations and corrective actions, multiple alternative corrective actions, and complex compliance times. This complexity can result in confusion regarding what work needs to be accomplished and what work already has been accomplished to be in compliance with an AD. This complexity can also make it difficult for the FAA to enforce the actions defined in the service instructions.

The SIWG found some DAHs include logic-based diagrams to assist air carriers/operators in choosing the best corrective action path for complex service instructions. However, before 2008, limited documentation, guidance, and standards for creating logic-based diagrams existed. This resulted in a wide variation in format,

content, and location of the diagrams. In 2008, one DAH worked with the FAA's TAD to identify issues and develop standards and document guidance for logic-based diagrams in future service instructions. Based on the issues identified and their solutions, the SIWG concluded—

(1) Each DAH participating on the AD ARC include logic-based diagrams at least as a secondary source of information in its complex service instructions, considering the format, standards, and guidance previously created and

(2) Each DAH will be responsible for incorporating these standards into its internal processes for creating service instructions.

Logic-Based Diagram Standards

The SIWG determined the following standards should be used when including logic-based diagrams in service instructions.

- The DAH will determine when to include a logic-based diagram in service instructions. The DAH will use judgment to determine when the service instruction is complex and a logic-based diagram should be included. The DAH should also consider a request from air carriers/operators and FAA personnel on whether a logic-based diagram would be helpful.
- The logic-based diagram should not be a required portion of the service instruction. It should be provided as an aid to help air carriers determine the necessary tasks in accomplishing the service instruction.
- Logic-based diagrams should be located as an appendix to the service instruction.
- Logic-based diagrams should include tasks and times for when to do those tasks.
- The logic-based diagram should not be the primary source for compliance information. The diagram should be provided as a supplement to the information in the compliance and accomplishment instruction paragraphs.
- The service instruction should make it clear that the logic-based diagram is not the authoritative source for tasks. It should be clear the logic-based diagram is only a supplement to the tasks described in the accomplishment instructions and the times specified in the compliance paragraph of the SB. A general note in the accomplishment instructions paragraph and on the logic-based diagram should delineate this requirement.
- Use consistent terminology within the logic-based diagram.
- Use descriptive and concise terminology in the logic-based diagram.

Implementation

The SIWG's implementation action to address the recommendation included documenting the standards for logic-based diagram format, content, and location. The SIWG drafted the proposed documentation and submitted it to through the FPWG to the FAA which reviewed the draft documentation, and incorporated the guidance in draft AC 20–xxx.

The SIWG also worked, in parallel, with ATA and representatives from the S1000D Civil Aviation Working Group to request the standards for logic-based diagrams be incorporated into industry specification documents (that is, ATA iSpec 2200 and S1000D). Each DAH participating on the SIWG reviewed their internal documentation for creating service instructions and has committed to incorporate the standards into their documentation during upcoming revision cycles. DAHs, operators, and regulatory authorities need to provide training to all personnel who author, review, approve, implement, and enforce service instructions. The SIWG also developed and provided potential training material to the FAA.

Outcome

The SIWG's implementation actions successfully address the AD CRT recommendation by—

- Incorporating logic-based decision diagrams in FAA and industry service instructions;
- Documenting the standards for logic-based diagram format, content, and location in draft AC 20–xxx, ATA iSpec 2200, and S1000D;
- Developing training material; and conducting training.

In addition, the DAHs on the SIWG committed to include logic-based diagrams in complex service information.

The SIWG's anticipated effect of incorporating logic-based decision diagrams in service instructions is that logic-based diagrams will assist operators in selecting the optimal corrective action in complex service instructions. The standardized format, content, and location of the diagrams will increase users' familiarity through repetition on the location and content.

A2.2 Critical Task Differentiation

Task

The OEM and ATA, as appropriate should—

- Revise the way SBs are written to avoid mandating things that are not required to meet the safety intent of the SB. This would include ensuring air carriers have appropriate guidance and controls when authoring air carrier AD accomplishment documents.

(AD CRT task 1 report, recommendation No. 2, bullet No. 1)

- *Critical Task Differentiation.* Service instructions should explain the safety intent of the instructions. They should differentiate the critical tasks and task sequences requiring exact conformance from flexible advisory instructions for tasks that are common, acceptable air carrier procedures.

This differentiation will allow improved understanding of crucial AD requirements and consistent judgment in AD compliance.

(AD CRT task 2, recommendation No. 1, bullet No. 1)

Review of Issue/Problem

Service information incorporated by reference such as an SB in an AD, often contains all of the steps to accomplish the necessary inspections, repairs and/or modifications. Although these SBs may include detailed instructions necessary to complete the work package including access and close-up steps, not all of these steps may be directly related to correcting the unsafe condition that prompted the AD. In some cases, tasks included in the SB can be accomplished using acceptable operator procedures. In other cases, tasks must be accomplished in accordance with the procedures specified in the SB to ensure that the unsafe condition is appropriately addressed. The failure to make the distinction can cause confusion among DAHs, operators, and regulatory authorities when determining whether approval of an AMOC is necessary to deviate from the SB incorporated by reference in the AD.

Implementation

The SIWG proposed new guidance material for a DAH AC to provide information to help creators of service information as well as users of the service information understand the safety intent of the design change, the configuration that corrects the unsafe condition, and which tasks are necessary to comply with the applicable AD. The SIWG developed objective criteria to help determine which tasks should be labeled as RC. General guidance material and a series of questions was developed to assist in defining and evaluating the type design change as well as assist in defining objective criteria that could be consistently used when making the determination whether to label a task as RC. The general guidance material and the series of questions created should help to define the specific design change that was created to correct the unsafe condition and will assist in determining whether a task is a direct part of detecting, preventing, correcting, or eliminating the unsafe condition that prompted the SB and the consideration of an AD.

The SIWG proposed acceptance of “refer to” and “in accordance with” to differentiate when the prescriptive procedure must be followed precisely versus when an air carrier could use their own accepted equivalent procedure. The SIWG also discusses the use of “refer to” and “in accordance with” under section A2.10 Standard Practices.

After the new AC is published, AFS–300 will review FAA Order 8900.1 to determine if corresponding language should be added to the order for ASIs. The FAA also will update the AD template to include the new notes that define use of the terms “refer to”, “in accordance with”, and “required for compliance (RC)”. In addition, the SIWG submitted a request to update ATA iSpec 2200 and S1000D to include guidance material on RC, “refer to”, and “in accordance with”.

The SIWG expects that each DAH and regulatory authority will create internal guidance material based on the information in the industry documents to ensure the standards for identifying the safety intent, describing the configuration that corrects the unsafe condition, and identifying the applicable tasks as RC are met during the authoring, review, and approval of SBs. Training of DAH SB authors, AD writers, DAH and FAA engineers and FAA inspectors must be developed before implementation of changes to SBs and ADs. After guidance has been published and training has been conducted, DAHs can implement the proposed SB changes and the FAA can implement corresponding AD changes.

Outcome

The SIWG's proposed implementation actions successfully address the AD CRT recommendation to revise the way SBs are written to specify the safety intent of an SB incorporated by reference in an AD and avoid mandating things that are not required to meet the safety intent of the AD. The new RC concept separates AD requirements from other material and should facilitate AD compliance determinations.

The FAA revised the AD template to include new notes that define use of "refer to" and "in accordance with".

The SIWG noted that implementation of the RC concept will differ among the various DAHs. Airbus and Bombardier agreed to identify certain paragraphs such as procedure and test paragraphs of their SBs as RC, but will not identify specific steps as RC. These DAHs consider their approach to be an equivalent means to comply with the intent of the recommendation. See section 2.5.2 for more information.

Note: The FAA plans to issue a revised draft AC 20–xxx, which contains information on the use of the RC concept and the objective criteria for identifying RC items. After incorporating public comments, the FAA plans to issue the final AC by the end of 2011. In addition, the FAA plans to add notes on RC to the AD template upon final issuance of the AC.

A2.3 Detailed Instructions (Clarify Figures)

Task

> *Detailed instructions*. Service instructions must make clear whether a figure or drawing is the authoritative instruction or only an installation aid. Service instruction text and drawings must be in agreement with each other to avoid subjective misinterpretation. In addition, service instructions should no longer contain ambiguous terms, such as "approximately", to define allowable tolerance ranges and performance criteria.
>
> (AD CRT task 2 report, recommendation No. 1, bullet No. 7)

Review of Issue/Problem

Service instructions often contain detailed figures/illustrations to clarify the task. However, the detail provided in the figures/illustrations may make it difficult to determine what parts of the figure/illustration are required for compliance versus reference only information when an AD mandates accomplishment of the service instructions.

A solution is needed to ensure the intent of figures/illustrations in service instructions is clear to include distinguishing between compliance requirements and information provided for reference only.

Implementation

After considering 12 options that included the use of RC coding, color coding, and text on the illustration, the SIWG recommended 3 options for implementation that provide guidance and set a standard on what methods can be used in illustrations to ensure clarity. The options are—

- Shade/cross hatch on important areas;
- Use phantom lines[42] for items in illustrations that are for reference only; or
- Use enlarged view illustrations (currently a standard practice).

In addition, the SIWG developed the following definitions for clarification purposes:

- Illustration—A pictorial graphic.
- Figure—A part of a service document that includes an illustration, photograph, chart, graph, table, form, note, symbol, callout, text, or dimension (or any combination) that supports or clarifies the written instructions.
- Drawing—A document created by an OEM/DAH Engineering department to define configuration. Drawings may include other engineering information such as specifications, dimensions, materials, and processes.

The SIWG recommended that the FAA create an AC to document the recommended solutions and include guidance on detailed instructions to provide basic instructions to be used when creating illustrations. The AC also should specify the need for dimensions and tolerances in the illustrations to remove ambiguity. The FAA documented the SIWG's guidance in draft AC 20–xxx, issued on June 13, 2011.

The SIWG also recommended each OEM/DAH implement methods to prevent use of ambiguous terms in service documents. The methods include—

- Training—Provide training to authors of service documents to stress the effect of using ambiguous terms and the importance for providing clarity and accuracy.

[42] Phantom lines are lines drawn by alternating a long dash, followed by two short dashes.

- Tools—Such as computing tools or checklists to prevent or search for and eliminate the inclusion of ambiguous terms.
- Processes—Implement processes used during the authoring, review, validation, and approval of service documents that will prevent the use of ambiguous terms.

The SIWG provided additional flexibility on the use of figures/illustrations/drawings under A2.2 Critical Task Differentiation.

The SIWG also submitted change requests to have the suggested guidance material included in ATA iSpec 2200 and S1000D documentation. The SIWG recognized that ATA iSpec 2200 and S1000D allow for some flexibility on how each DAH implements the standards described and therefore, different formats of service instructions result.

The SIWG noted training will be accomplished by the affected organizations as needed. In addition, each DAH plans to incorporate the concepts and general guidelines developed into its internal documentation as policy for creating service instructions.

Outcome

The SIWG's implementation guidance successfully address the AD CRT recommendation to address ambiguity in terms, distinguish between compliance requirements and information provided for reference only, and ensure figures in service instructions and text agree. The draft and final versions of AC 20–xxx and the updated ATA iSpec 2200 and S1000D (anticipated to be issued in 2012) reflect these process changes.

A2.4 Expedite Service Information Development

Task

> OEMs should streamline service instruction development and revision processes to expedite release to air carriers.
>
> (AD CRT task 2 report, recommendation No. 4, bullet No. 2)

Review of Issue/Problem

According to DAH representatives from Airbus, Boeing, Bombardier, Embraer, and Learjet on the SIWG, there is no singular or set of process improvements that could be implemented with each DAH's internal process and in parallel through their primary regulatory authority's approval process. The SIWG noted because each DAH has the responsibility to address design changes, it becomes more imperative to ensure proper coordination when safety issues are identified.

In addition, each DAH has systems in place to continuously review and implement process improvements. These systems are used to improve processes to enhance the quality of the deliverables to the regulatory agencies and customers as well as reducing flow time to produce those deliverables. Each DAH must continue to use those systems to investigate and implement future improvements to improve the quality of the deliverables while reducing the flow time.

Implementation

The SIWG identified the following existing process improvement projects that have enhanced (or have the potential to enhance) service instruction development specifically to reduce flow time and improve quality.

- Quality Improvement Process, such as—
  - Safety Management System—A system or process to make sure the action described in service instructions, including proposed compliance periods, are soundly based on risk management principles;
  - Lean Management System—A system which incorporates tools, principles, training, and a common language to improve productivity;
  - Statistical Process Control—Application of statistical methods to monitor and control a process to ensure that it operates at its full potential to produce a conforming product; and
  - Six Sigma Improvement Processes—A data driven process used to improve processes and products.
- Use of checklists—Implemented to assist authors in making sure requirements are met before documents are sent for approval.
- Use of tip sheets—Implemented to assist authors in understanding requirements.
- Use of boilerplate text—Implemented to standardize the location and content of text in service documents and to reduce variation.
- Documented standards—Implemented to document standard practices, formats to reduce variation.
- Documented guidance—Implemented and used by individuals within an organization to document, understand, and manage information used to create and publish service information.
- Dispute Resolution Process—A formal process used to resolve differences between a regulatory agency and the DAH during development of service information.
- Compliance Recommendation Process—A formal process used by a DAH to develop and communicate recommended compliance action to a regulatory agency.
- Validation Processes—A formal process used to validate that procedures in service information are accurate, complete, and can be accomplished.
- Air Carrier Review Process—A formal process in which a copy of service information is sent to an air carrier prior to publication. The air carrier then reviews the information and submits comments back to the DAH for consideration.
- Partial Revision Process—A process in which only changed information in a service document is sent to affected customers.

- Temporary Revision Process—A process in which only changed information in a service document is sent to affected customers. The information is later included in the next revision to the document.
- Contingent Approval Process—A process in which an organization approves a document contingent upon changes being made prior to publication.
- Prioritization Process—A process in which service documents are prioritized and work is accomplished based on those priorities and the national authority is kept apprised.
- Delegated Approval Process—A process in which a regulatory agency will delegate certain functions be accomplished by the DAH.
- Electronic Signature Process—A process which allows a DAH to use electronic signatures for certain types of documents
- Information Exchange Process—A process in which a DAH shares information used to develop service information, for example, posting proposed solutions, proposed compliance times, estimated part availability dates, and other information regarding plans for correcting an unsafe condition. Air carriers can then view the information and provide feedback back to the DAH.
- Airworthiness Concern Coordination Process (ATA Specification 111)—A process in which a DAH, air carrier operators, and a regulatory agency work together to develop and accomplish service instructions necessary to correct an unsafe condition.

Each DAH reviewed the above list and evaluated the possibility of implementing items from the list, or identified alternatives/equivalents that would improve the availability of service instructions and the development and delivery of ICA that result from design changes. Each DAH sent a letter to the AD ARC stating it evaluated the list and provided what items it will implement or if not, an explanation as to why not.

Outcome

The SIWG's implementation actions successfully address the AD CRT recommendation for OEMs to streamline service instruction development and revision processes to expedite release to air carriers by DAHs evaluating the list of process improvements and documenting the feasibility of implementing the improvements within its organization. The AD ARC noted the participating DAHs submitted letters to the FAA[43] outlining their review of the process improvements and implementation plans relative to streamlining service instruction development and expediting service instruction release to air carriers.

In addition, the FAA issued draft AC 20–xxx, Section 3–11, Streamlining Development and Revisions of SBs, which includes the majority of the process improvement projects listed above that reduce flow time and improve quality. The FAA plans to issue the final AC by the end of 2011.

[43] The participating DAH provided letters to the FAA on the following dates: Airbus, June 29, 2011; Boeing, April 22, 2011, Bombardier, August 19, 2011; and Embraer, July 7, 2011.

A2.5 Flexibility

Task

> *Flexibility as appropriate*. When compatible with the corrective action intent of the AD, service instructions should incorporate general notes providing air carriers latitude to use (1) acceptable alternative materials and approved internal procedures without requesting an AMOC on each deviation or (2) where applicable, the option to use their engineering authority.
>
> (AD CRT task 2 report, recommendation No. 1, bullet No. 4)

Review of Issue/Problem

Service instructions contain detailed step-by-step instructions necessary to perform the inspection, repair, modification, and/or testing to perform tasks described in the service instructions. However, these detailed steps often lead to an air carrier/operator not being allowed to use accepted or approved alternate parts, material, tools, or processes. This results in an air carrier/operator having to submit a request for an AMOC each time it wishes to use alternate parts, material, tools, or processes. Some DAHs currently include general notes in service instructions that give an air carrier/operator some flexibility to use alternate parts, materials, tools, and processes, but still meet the design requirements for the aircraft. However, not all DAHs include these types of notes in their service instructions. In addition, air carriers/operators have identified several cases that are not addressed by current notes. The SIWG reviewed the notes that currently exist in various DAH service instructions.

Implementation

The SIWG documented existing and new agreed-upon general notes. Each DAH will evaluate the notes and incorporate the applicable notes or appropriate similar notes into their service instructions. Each DAH will need to work with their respective regulatory authority to obtain concurrence for including the notes that allow air carriers/operators flexibility.

The SIWG expects each DAH will develop and include guidance for use of general notes in their internal service instruction preparation documents. In addition, a high-level recommendation is included in ATA iSpec 2200 recommending general notes that provide flexibility be included in service instructions. The SIWG is communicating with the Civil Aviation Working Group responsible for updating S1000D and will submit a change request to update S1000D by September 30, 2011, to recommend general notes that provide flexibility be included in that specification document. The SIWG also developed training material on the use of general notes.

Outcome

The SIWG's implementation actions successfully address the AD CRT recommendation by providing a list of general notes to DAHs for inclusion in service instructions. The general notes enable air carriers/operators to use acceptable alternative materials and

approved internal procedures without requesting an AMOC and provide air carriers/operators the option to use their engineering authority. In addition, DAHs agreed to include applicable notes in their service instructions. On June 13, 2011, the FAA issued draft AC 20–xxx, Section 3–7, General Notes, which provides information related to the accomplishment instruction steps. The FAA plans to issue a final AC by the end of 2011.

A2.6 Lead Airline Process

Task

(1) Revise ATA Specification 111 for improvements to the Lead Airlines Process.

(AD CRT task 1 report, recommendation No. 2—
Service Bulletin Process)

(2) The ATA should review and update ATA Specification 111 to address issues brought forward in this report with emphasis on the following items:

- A goal of the Lead Airline Process should be to contribute to clear and accurate service instructions that avoid prescriptive processes where standard practices are available and applicable. Ideally, these instructions contribute to effective implementation by a technician. The process should lend particular attention to developing service instructions involving previous overlapping ADs or a series of ADs or SBs on (1) the same component, (2) wiring and other actions dependent on workmanship, and (3) class 220 type actions that are easily reversible in future maintenance. In these cases, prototyping of proposed service instructions on in-service airplanes is particularly important, and OEM participation should be considered. The process should—
  - Identify differences in airplane configurations relevant to the proposed service instructions.
  - Ensure lead airlines are selected according to qualifications, capability, and commitment to the process.
  - Predispose service instructions to support AD compliance planning objectives cited in the following two bullet points.
- The ATA should periodically review the Lead Airline Process to ensure the continuing effectiveness of the process.
- The ATA should coordinate the update to ATA Specification 111 with the OEM. This will help to streamline and better integrate the Lead Airline Process with OEM fleet support processes.

(AD CRT task 2 report, recommendation No. 3, bullet Nos. 1, 2, and 3)

Review of Issue/Problem

Under part 39, the FAA issues ADs to mandate action by airplane owners/operators to correct "unsafe conditions". Experience has shown that the most effective and efficient means of identifying and responding to potential safety-related problems, and determining and resolving unsafe conditions, requires aggressive fact finding and coordination among equipment manufacturers, airplane operators, and the government airworthiness authority. Note that foreign equipment manufacturers and/or DAHs will use their respective processes as appropriate.

The ATA published Specification 111 to provide a method to coordinate the resolution of unsafe conditions. The ACCP is a cooperative process that allows the commercial aviation industry to capitalize on the expertise of equipment manufacturers, air carrier operators and the FAA to address an unsafe condition with optimum effectiveness, timeliness, and efficiency. The purpose of the process is to produce the most effective resolution by enhancing communications between the principle parties that could be affected.

Currently, ATA Specification 111 states that an ACCP starts with the identification of a "potential airworthiness concern" and the gathering of related data and information. Subsequently, when the concern is determined to be a "safety-related problem" that the FAA decides to resolve by AD, the FAA is subject to ex parté constraints and the "Lead Airline Process", a subcomponent of the ACCP, begins with the OEMs and air carriers collaborating to develop corrective service instructions. At any time during an ACCP, concluding with the release of an AD NPRM or urgent AD, the FAA may request data or information, including requests from those participating in Lead Airline Process subcomponent.

Although ATA Specification 111 processes can and have been performed in coordination with other DAHs (production approval holders and supplemental type certificate holders), those efforts are best addressed with ad-hoc arrangements. The majority of AD initiatives involve only airplane or engine DAHs.

A primary objective of the process is to develop, to the greatest extent possible, OEM service instructions and/or other approved service instructions that will be incorporated by reference to accomplish the technical, maintenance, logistic, and other requirements of ADs, and the needs of operators in implementing those requirements. The involvement of principle parties early in the development of service instructions is crucial in meeting this objective.

Ideally, the process facilitates FAA development of an AD through straightforward IBR of service instructions. The SIWG acknowledged ATA Specification 111 has not been updated since 2000 and does not reflect today's DAH and air carrier internal processes.

Implementation

The SIWG's implementation action included—

- Reviewing and updating ATA Specification 111 to address issues identified in the AD CRT task 1 and task 2 reports;
- Developing metrics and a process to periodically review the Lead Airline Process to ensure continued effectiveness of the process; and
- Coordinating the update of ATA Specification 111 with OEMs and all affected parties.

The SIWG noted each OEM, air carrier, and regulatory authority will determine which portions of the specification it chooses to implement and how to accomplish the tasks recommended in the specification. In addition, the ATA will make the specification available to aviation organizations normally not involved with Lead Airline Process so that they may arrange similar process specifications, as necessary.

The SIWG also noted air carriers, DAHs, and regulatory authorities should provide training to organizations and individuals that implement the process.

Outcome

The SIWG successfully addressed the AD CRT recommendation by providing its draft revision of ATA Specification 111 to ATA. ATA and the ATA Airworthiness Committee plans to publish the revised specification by October 31, 2011. If effectively coordinated, the revised process will yield benefits not originally realized with ATA Specification 111. The following are considered specific objectives and measurements of the success of the process:

- Foster mutual understanding and awareness of safety issues, risks, and margins.
- Foster appropriate compliance through clear and concise technical data.
- Minimize differences between the coordinated and the final service instructions required to address the unsafe condition.
- Minimize differences between the manufacturer's service instructions and instructions in the AD.
- Minimize occurrences of corrections to ADs, including corrective revisions and supersedures of ADs.
- Minimize the need for AMOCs, and AD extensions and exemptions.
- ATA plans to sponsor training, particularly for lead airline designees, focused on the substantial revision of the ATA Specification 111 and related AD ARC products, and the FAA part 39 legal interpretation.
- In addition, ATA plans to coordinate training, particularly for operator employees involved in engineering and maintenance regulatory compliance, for AC 39–9, the final version of AC 20–xxx, and the FAA part 39 legal interpretation.

A2.7 Maintaining Airworthiness

Task

OEMs and the ATA, as appropriate, should avoid drafting class 2 SBs.

(AD CRT task 1 report, recommendation No. 2, bullet No. 2)

Maintaining airworthiness. Service instructions should be written and traceable to avoid situations where previous AD compliance requirements are inadvertently undone or modified through routine air carrier maintenance. (Refer to class 2 issues in section 2.2.5 and finding and recommendation No. 11, for additional information regarding this issue.)

(AD CRT task 2 report, recommendation No. 1, bullet No. 3)

Review of Issue/Problem

Air carriers use service instructions such as SBs to initially comply with an AD. Subsequent maintenance is performed using a combination of the methods, techniques and practices prescribed in the DAH's instructions for continued airworthiness and an operator's own maintenance practices developed under § 43.13(c). If these procedures fail to take the AD-mandated requirements into consideration, the operator could become out-of-compliance with the AD. To decrease that chance, the DAH's and operator's procedures need to be updated to support AD-mandated changes to ensure the AD configuration and other requirements are taken into account during normal maintenance. DAH's procedures and ICA[44] should also clearly show the relationship to any AD or to the AD-mandated service instruction such as an SB.

Implementation

To avoid situations where previous AD compliance requirements are inadvertently undone or modified through routine air carrier maintenance, the SIWG proposed the following improvements:

(1) Increased review of service information documents by air carriers and DAHs during SB development to evaluate the need for changes to ICA to eliminate the potential for undoing a mandated condition or configuration,

(2) DAHs providing awareness to the air carrier regarding availability of updated ICA documents,

(3) DAHs utilizing the flexibility provided in general notes and referring to standard practices as much as possible in SB instructions that will be incorporated by reference in ADs,

[44] ICA consists of documentation that provides methods, techniques and practices for accomplishing maintenance and preventative maintenance including inspections that are essential to the continued airworthiness of an aircraft.

(4) DAHs avoiding duplication of entire procedures from non-approved manuals in SBs by listing only the specific requirement that must be met in the SB and placing internal flags in those manuals to trace the requirement if compliance is required by an AD or is expected to be required by an AD in the future,

(5) DAHs creation of an SB-to-AD cross-reference listing upon release of the AD, and

(6) DAHs and operators support proposals to prevent the inadvertent undoing of ADs submitted by other working groups.

The solutions presented above will be included in AC 20–xxx. Each DAH will be responsible for developing processes and training the affected personnel on how it plans to adopt any of the recommended best practices.

Outcome

The SIWG successfully addressed the AD CRT recommendations to avoid situations where previous AD compliance requirements are inadvertently undone or modified through routine air carrier maintenance by the FAA's issuance of draft and final versions of AC 20–xxx. The AC provides guidance to DAHs in chapter 6 on maintaining airworthiness that includes the SIWG suggested improvements on general notes, ICA, use of internal flags in non-approved manuals, and the creation of an SB-to-AD cross-reference listing to help owners/operators avoid inadvertently undoing or modifying AD-mandated type designs through routine maintenance.

A2.8 Maintain Airworthiness—Production versus In-service Maintenance

Task

The AD ARC assigned a new task to the ADWG concerning maintenance of design changes that are required by an AD. The ARC asked the ADWG to consider including a section in ADs, and possibly the AD Manual, AD worksheet, and/or AD template, to address maintenance of mandatory design changes. The ARC asked the SIWG to work with the ADWG to create a method in which a mandated design configuration is maintained.

Review of Issue/Problem

The issue concerning maintenance of mandatory design changes was identified during FPWG discussions concerning recommendation No. 12, involving proposed revisions to §§ 39.7 and 39.9. The FPWG identified two main issues in its summary sheet (see section D2.5 of this report) on this subject:

(1) The difference in regulatory treatment between an aircraft that has had design changes incorporated during production and an aircraft that has been modified in accordance with an AD to incorporate the same design change. In the first instance, the maintenance program can handle any deviations from the configuration under § 43.13, while in the latter instance, deviations must be handled through the AMOC process.

(2) There were discussions of whether the product or article could return to the operator's maintenance program (i.e., be maintained or altered under part 43) after a terminating action was accomplished.

The ADWG proposed new AD text to address maintenance of design changes mandated by ADs. For these types of design changes, the new AD text was intended to:

- Require operators to incorporate any new AWLs that are needed to prevent reintroducing the unsafe condition. (Note that the SIWG considered the process for identifying new AWLs).
- Allow the design change to be maintained using normal maintenance activities (that is, acceptable methods, techniques, and practices) provided all applicable AWLs are complied with.

The proposal depends on the development of new AWLs to protect safety-critical configurations that are mandated by AD. The new AWLs would supplement Appendix H to part 25—Instructions for Continued Airworthiness, limitations to prevent previous AD compliance requirements from becoming undone or modified during normal maintenance activities or during airplane operation. The new AWLs would apply to airplanes that incorporated the design change in production as well as airplanes that incorporated the design change in service through AD compliance, thereby addressing the FPWG issue No. 1 described above. FPWG issue No. 2 described above is addressed in a discussion under Maintenance in ADs in section B2.2, Effective and Efficient AD Process.

The SIWG understood that because the regulation that requires a DAH to provide AWLs for structural inspection procedures approved under § 25.571, critical design configuration control limitations, approved under § 25.981 for the fuel tank system, and mandatory replacement of EWIS components as defined in § 25.1701; the creation of new AWLs outside the scope of § 25.571, § 25.981, and § 25.1701 would be voluntary.

The DAH participating on the SIWG discussed their practices to evaluate all changes to type design, including those related to ADs, for follow-on maintenance requirements. Those requirements, when applicable, are included in the existing or supplemental ICAs. Therefore, some SIWG members believed that those ICAs should be sufficient for maintaining the design configuration.

To support the solution proposed by the ADWG the SIWG was tasked to develop a process for determining appropriate AWLs to prevent previous AD compliance requirements from becoming undone or modified during normal maintenance activities or during airplane operation for design changes required by ADs. The process should identify AWLs that are needed to protect safety-critical features in these designs from changes to these designs through maintenance activities or normal operation of the aircraft. The AWL process should involve DAHs proposals for new AWLs during certification when AD-related design changes are proposed to the FAA, followed by FAA review and approval of the new AWLs as part of the amended type design.

The SIWG could not agree on the creation and use of AWLs outside of the requirements of appendix H to part 25 to protect safety critical configurations from changes to designs through maintenance activities or airplane operation. The concept of creating AWLs would require that a DAH identify the detailed critical elements of the design change in an SB, and identify the steps necessary to label those critical elements as RC. However, DAHs have stated they will not identify the critical elements at the detailed level. Therefore, it was felt by some SIWG members that it would be difficult to create AWLs if the detailed critical elements are not identified in the SB.

The SIWG also reviewed 10 recently published ADs to determine if an AWL-type task would be required to prevent previous AD compliance requirements from becoming undone or modified during normal maintenance activities or during airplane operation. The SIWG found that 8 of the 10 ADs reviewed would require some sort of AWL to prevent the previous AD compliance requirements from becoming undone or modified during normal maintenance activities or airplane operation. The SIWG also considered 11 alternatives and presented pros and cons for each alternative before it concluded its review.

Implementation

Because the SIWG could not reach consensus on the proposed solution, no implementation is planned concerning development of new AWLs intended to prevent previous AD compliance requirements from becoming undone during normal maintenance activities or airplane operation.

Outcome

The SIWG was unable to resolve the AD ARC's task to create a method in which a mandated design configuration is maintained. The AD ARC later determined that the task was outside the scope of the AD CRT and IRT recommendations.

A2.9 Simplified Service Bulletin Format

Task

> The Team acknowledges the benefits of current AD-friendly SB improvements, but recommends more focus on user-friendly improvements in service instructions as follows:
>
> *Simplified format*. Service instructions can be written in a simplified format that allows easy translation into an air carrier's work instructions. Standardizing service instruction format will facilitate user effectiveness by repetition in knowing where critical information is referenced.
>
> (AD CRT task 2 report, recommendation No. 1, bullet No. 2)

Review of Issue/Problem

The aviation industry currently has specifications to define the format, content, and location for material in various service documents. These industry specifications are contained in ATA iSpec 2200 and S1000D. These two documents are used by the DAHs supporting the AD ARC and are used to standardize the location, content, and format of the material in their service documents. Following the standards defined in those specifications will help to facilitate user effectiveness by repetition in knowing where critical information is referenced and the type of content to be included.

Each DAH has its own processes for creating, approving, and distributing service documents. Each participating DAH committed to consider the implementation of standard format and layout as given in iSpec 2200 and S1000D. In addition to this, all of the SIWG's recommendations as part of the AD ARC activity will positively influence the overall quality and clarity of service instructions distributed to operators.

The SIWG's recommendations below are specific to SBs listed as the means of compliance for an AD.

A summary of recommendations and the proposed solutions are listed below; details on the solution for each is provided in the section discussion for that specific recommendation.

- Only the safety-related issue must be addressed. Service bulletins will not include extra tasks that are convenient to do while in the work area. Critical task differentiation concept will be applied. The FAA will ensure that items in the SB that are required for compliance to an AD are clearly identified. This will allow other actions to be accomplished using an air carrier's procedures or common industry practices. See section A2.2.
- ICAs should be published before or at the same time as the SB. This will ensure an operator fully understands and administers the post SB incorporation of ICAs before completion. See section A2.7.
- Lead Airline Process will be reviewed/updated as needed. The updated process will provide a method for a "Lead Airline" to review and comment on SB instructions before the DAH publishes them. This will improve the ability for air carriers to accomplish the modification and reduce the need for submitting requests for AMOCs. See section A2.6.
- When acceptable, general notes will be added to the SB to allow air carriers to use (1) acceptable alternative materials and approved internal procedures without requesting an AMOC on each deviation or (2) where applicable, the option to use their engineering authority. This will provide air carriers flexibility to accomplish tasks in an SB that are not required by the AD, that incorporates the SB by reference, or use common industry practices without the need for an AMOC yet, remain in compliance with the applicable AD. See section A2.5.

- When needed, logic-based decision diagrams will be added in service instructions to assist air carriers in choosing the best corrective action path, such as continued repeat inspection or termination action, based upon the discovered condition and compliance time period. Logic Diagrams will be added as an aid to better understand complex modifications and choose the solution that works best for each air carrier. See section A2.1.
- It is agreed that the illustrations will be secondary to the text and that differences between an illustration and the associated text must be avoided. The use of ambiguous terms such as "approximately" must not be permitted where defining allowable tolerances and performance criteria. See section A2.3.
- DAHs will adopt a continuous improvement philosophy concerning streamlining service instruction development and revision process to expedite release to air carriers. See section A2.4.

Implementation

Implementation of the solutions (such as separating critical tasks from non-critical flexible advisory tasks, referring to industry standard practices when possible, including general notes in SBs to provide flexibility, including logic based diagrams in complex SBs, and clarifying whether information in figures is authoritative or reference only) are addressed by the implementation of the tasks in this section. Each DAH will also evaluate each of the applicable recommendations proposed by the SIWG and work with its regulatory authority to incorporate the recommendations into their products and processes.

Outcome

The SIWG successfully addressed the AD CRT recommendation by identifying industry specifications ATA iSpec 2200 and S1000D as the standard reference for service information format and content and directing each DAH to evaluate the SIWG implementation actions for each task in this section and incorporate them into their products and processes as applicable.

In addition, on June 13, 2011, the FAA issued draft AC 20–xxx, which provides guidance on format and content for service instructions as discussed in this section. The FAA plans to issue a final AC by the end of 2011.

A2.10 Standard Practices

Task

> Standard Practices. The aviation industry has many processes for performing maintenance and modifications that have been standardized and proven effective. Service instructions should refer to these standard practices in which air carriers have experience, confidence, and training.
>
> (AD CRT task 2 report, recommendation No. 1, bullet No. 5)

Review of Issue/Problem

Operators often have their own acceptable procedures that can be used to accomplish some of the SB actions. Some confusion and unnecessary AMOCs may be avoided by ensuring that AD-mandated SBs specify which procedures must be followed exactly and which can be accomplished using an air carrier's equivalent procedures.

Implementation

The SIWG noted that in 2006, one DAH signed an agreement with the Seattle Aircraft Certification Office (SACO) and the Los Angeles Aircraft Certification Office (LAACO) to implement "AD-friendly SBs". This agreement contained numerous principles and practices that were developed by a DAH/FAA team. Some of the agreements implemented were:

- The phrase "in accordance with" will be used to identify procedures that must be followed.
- The phrase "refer to…as an accepted procedure" will be used to identify procedures that can be used, but for which an air carrier or maintenance provider may use their own accepted methods, techniques, and practices.
- A general note describing use of "in accordance with" and "refer to" will be included at the beginning of the SB accomplishment instructions.

Implementation of this AD-friendly SB improvement initiative has helped by allowing operators to use their own accepted procedures, without having to request an AMOC, in cases where DAH's procedures are not required to address the unsafe condition. There has been some concern that there is not adequate guidance for the DAHs and the FAA to determine whether procedures should be identified by the phrase "in accordance with" or by the phrase "refer to…as an accepted procedure". There has also been concern that in some cases, ASIs tasked with ensuring that air carriers are in compliance with ADs may not be aware of the allowable differences in the accomplishment of ADs for procedures identified with these two phrases. The SIWG determined that a general note describing use of "in accordance with" and "refer to" will be included at the beginning of the SB accomplishment instructions.

General Note

One DAH currently includes a general note that gives air carriers some flexibility to use alternate processes or procedures, but still meet the design requirements for the aircraft. One DAH also currently includes guidelines in their SB development process to determine when to use the note. However, not all DAHs include this type of note in their SBs or have guidelines when it is appropriate to use the note.

The SIWG reviewed one of the general notes that currently exists in at least one DAH's SBs related to the use of an air carrier accepted equivalent processes or procedures. The SIWG believed there was merit in making the note, or a similar version of the note, available for use by all DAHs. Each DAH will review the note and incorporate it into its SBs and will review the guidelines for appropriate use of the note and incorporate those guidelines into their SB development process and documentation. The suggested note is as follows:

> These work instructions refer to methods, techniques, and practices described in other (*Design Approval Holder name*) documents. When the words "refer to" are used and the air carrier has other acceptable methods, techniques, and practices (including tools, equipment, and test equipment) those acceptable methods, techniques, practices (including tools, equipment, and test equipment) can be used to complete the work. When the words "in accordance with" are included in the instruction, the methods, techniques, and practices specified (including tools, equipment, and test equipment) in the (*Design Approval Holder name*) document must be used.

"Refer To" and "In Accordance With"

The SIWG proposed using the following guidelines for determining when to use "refer to" or "in accordance with."

- Provide maximum flexibility for the operator when determining if a referenced process or procedure may be followed or must be followed and
- Processes or procedures that may be followed provide more flexibility to the operator than processes or procedures that must be followed. Use "in accordance with" when referring to a process or procedure which must be followed exactly to correct the unsafe condition and comply with the anticipated AD, otherwise use "refer to."

Refer To

Use "refer to" when referring to standard practices in which an air carrier may use methods, techniques, and practices accepted by their regulatory authority. Examples of accepted methods, techniques, and practices include:

- Airplane Maintenance Manual (AMM) procedures for access, removal/installation, and test;
- Standard Overhaul Practices Manual procedures;
- Standard Wiring Practices Manual (SWPM) procedures;
- Overhaul Manual and Component Maintenance Manual (CMM) for disassembly, assembly and test procedures;
- Structural Repair Manual chapter 51 procedures that provide common industry practices (such as drilling holes or installing fasteners);

- Fault Isolation Manual procedures; and
- Generic or common NDT manual procedures not developed for a specific service instruction application.

In Accordance With

In a situation in which standard practice must be followed exactly to correct the unsafe condition and comply with the anticipated AD, then accomplish the following:

- Use "in accordance with" when referring to the process or procedure.
- Consider repeating the steps of the process or procedure in the SB.
- Consider internally identifying the process or procedure in the standard practice documentation's management system as related to a safety issue for a specific airplane configuration with a note not to change the process or procedure without full consideration of the consequences.

As part of this proposal, each DAH will review the note and incorporate it, or an appropriate similar note, into the SBs as appropriate. In addition, each DAH will review its SB development process and documentation and incorporate the guidelines for the use of the note as appropriate or develop similar guidelines for the use of the note.

Each DAH will evaluate the suggested note and the guidelines and incorporate the note and the guidelines or an appropriate similar note and or guidelines into its SBs and its SB development process. The SIWG expected that each DAH would develop and include guidance for use of the note and guidelines in their internal SB preparation documentation.

In addition, ATA will include a high-level recommendation in ATA iSpec 2200 that the general note that provides flexibility in the use of processes and/or procedures be included in SBs. A change request will be submitted to the Civil Aviation Working Group responsible for maintaining S1000D to recommend a general note providing flexibility in the use of processes and/or procedures be included in that specification document. Guidance material, including the note and guidelines, will be included in the draft and final versions of AC 20–xxx.

Use of the concept to use "refer to" and "in accordance with" terminology has been discussed with the European Aviation Safety Agency (EASA) and the National Civil Aviation Agency of Brazil (ANAC). These regulatory authorities have agreed with the concept for using the specified terminology and will work with their respective DAHs to implement the solution. The solution has been discussed with Transport Canada but they have not provided a response. The SIWG did not anticipate that Transport Canada will have concerns with the concept and believed Transport Canada would support the solution.

Outcome

The SIWG successfully addressed the AD CRT recommendation to reference industry standard practices in which operators have experience, confidence, and training by formalizing the use of "refer to" and "in accordance with" (currently an AD-friendly principle) in advisory material and FAA guidance.

In addition, on June 13, 2011, the FAA issued draft AC 20–xxx, which provides guidance on the use of "refer to", "in accordance with" as discussed in this section. The FAA plans to issue a final AC by the end of 2011.

A3.0 CONCLUSION

The SIWG addressed each recommendation assigned by the AD ARC. The implementation actions discussed above improve the process for developing service instructions and prevent requiring actions that do not meet the safety intent of an AD. The improvements in the development of service instructions are as follows:

- Created and documented standards for logic-based diagram format, content, and location to assist operators in choosing the best corrective action for complex service instructions. The FAA documented the standards for logic-based diagrams in draft AC 20–xxx. ATA included high-level standards for logic-based diagrams in ATA iSpec 2200. A change request will be submitted to include the high level standards in S1000D.
- DAHs committed to include logic-based diagrams in complex service information.
- Provided a list of general notes to DAHs for inclusion in service instructions to enable operators to use acceptable alternative materials and approved internal procedures without requesting an AMOC and provide operators the option to use their engineering authority.
- Created guidance to understand the safety intent of the design change, the configuration that corrects the unsafe condition, and the tasks necessary to comply with an AD. Developed criteria to help identify tasks that should be labeled RC.
- Finalized the use of "refer to" and "in accordance with" to differentiate when a prescriptive procedure must be followed exactly versus when an operator can use its own accepted equivalent procedure.
- Set a standard for the use of shading, phantom lines, and enlarged views to be used in illustrations to ensure clarity; developed definitions for the terms "illustration"; "figure"; and "drawing" for clarification purposes; and recommended DAH's prevent the use of ambiguous terms in service information through training, computing tools or checklists; and the implementation of processes during the drafting, review, and approval of service documents.
- Identified existing process improvements that enhance service instruction development to reduce flow time and improve quality.

- Revised the Lead Airline Process and developed metrics to periodically review the Lead Airline Process to ensure its continued effectiveness.
- Developed process improvements for DAH to ensure operators maintain airworthiness through evaluating the need for ICAs, making operators aware of updated ICAs, using general notes to provide operator flexibility and standard practices in SBs when possible, and creating an SB-to-AD cross-reference listing.
- Established guidance on format and content in service instructions.

APPENDIX B—AD DEVELOPMENT WORKING GROUP

B1.0 INTRODUCTION

The AD ARC formed the ADWG to address AD CRT recommendations related to the development of ADs. The ADWG's key objective is to ensure the AD development process is effective and efficient.

The ADWG is comprised of 16 members representing AFS, AIR, foreign aviation authorities, U.S. air carriers, U.S. and foreign airplane manufacturers, and repair stations. The ADWG met on three occasions and held monthly teleconferences to evaluate and develop implementation actions for its assigned recommendations. The ADWG co-leads tracked the working group's progress using project plates that contained the assigned recommendation, the expected outcome/deliverables, and individual milestone tasks. The ADWG co-leads provided status updates to the AD ARC members at the ARC meetings noting if the working group would meet its schedule to complete its review and analysis of the assigned recommendations or had encountered difficulties.

B2.0 ASSIGNED TASKS

The AD ARC assigned the ADWG the following seven recommendations to evaluate and develop implementation actions:

- Clarify ex parté communications;
- Resolve finding 4 (AD CRT identified systemic problems in the AD process);
- Ensure AD process is effective and efficient (address ICA);
- Post NPRM/FR service information for public access;
- Include the first compliance deadline in the AD NPRM and final rule AD;
- Develop AD tracking and management for multiple SBs and ADs; and
- Extend comment period for MCAI NPRMs to 45 days and harmonize FAA/foreign national aviation authorities (NAA) AD Processes.

The ADWG documented its evaluation of each recommendation and the implementation action in a summary sheet report. The ADWG addressed the seven recommendations in seven summary sheets. The complete unedited working papers that document the AD ARC's working groups' review, analysis, and decisions are available for viewing and download from the AD ARC Web site at http://www.faa.gov/aircraft/air_cert/continued_operation/ad/ad_arc/. Each assigned task, its implementation action, and outcome are excerpted from the ADWG summary sheets and presented below.

B2.1 Earlier Service Bulletin Credit

Task

ADs generally have an aggressive installation timeline. Because of the urgent nature of AD tasks and the need for planning to minimize aircraft out-of-service time, air carriers frequently accomplish service instructions ahead of the AD issuance date. This creates an exposure to noncompliance when there are changes in the final AD that differ from the originally released service document.

Charter a joint team made up of representatives from the FAA, OEMs, and air carriers to resolve finding No. 4. The overarching goal is to ensure that the AD development process is effective and efficient and results in a compliant product for air carriers.

(AD CRT task 2 report, finding No. 4, bullet No. 3 and recommendation No. 4, bullet No. 1)

Review of Issue/Problem

Operators often accomplish actions in an SB when the DAH initially releases the bulletin or upon FAA issuance of the NPRM. In doing so, operators risk noncompliance with the final rule AD if the mandated SB revision level is not the same as the one accomplished. In such cases, an AMOC must be approved to address differences between the various revision levels of the SB and additional work may be required to comply with the AD.

Implementation

The latest FAA revision to the AD Manual, chapter 8, specifies when appropriate, to allow credit for actions accomplished using an earlier revision of the service information than identified in the AD action.

The ASE will identify on the AD worksheet whether credit can be given for actions accomplished using an earlier revision of the service information. In addition, the AD template includes a compliance paragraph, regarding credit for actions accomplished using an earlier revision of the service information.

Outcome

The ADWG found the implementation actions successfully address AD CRT task 2 report, finding No. 4, bullet No. 3 with the FAA's issuance of revisions to the AD Manual, and implementation of the standardized AD worksheet and template in August 2010.

B2.2 Efficient and Effective AD Process

Task

> The overarching goal is to ensure that the AD development process is effective and efficient and results in a compliant product for air carriers.
>
> (AD CRT task 2 report, recommendation No. 4, bullet No 1, part 2)
>
> Minimize the number of AMOCs for ADs that require design changes.
>
> (AD ARC, March 2010)
>
> Consider including a section in ADs, and possibly the AD Manual, AD worksheet, and/or AD template, to address maintenance of mandatory design changes.
>
> (AD ARC, September 2010)

Review of Issue/Problem

The ADWG reviewed, analyzed, and evaluated the assigned tasks as described above and addressed the following concerns from the AD ARC and operators.

When ADs require installation of a specific design, operators must currently request AMOCs to install later approved designs, even if the DAH develops and the FAA approves the designs. To reduce the resources needed to request and approve AMOCS, the AD ARC asked the ADWG to consider options for minimizing AMOCs for ADs requiring design changes.

Operators also requested clarification on when a product or article can return to the operator's maintenance program, that is, be maintained or altered under part 43 after a terminating action in an AD is accomplished.

Implementation

Effective and Efficient AD Process

The ADWG concluded that all of the improvements to the AD process as implemented will contribute to a more effective and efficient AD process. The ADWG found that the AD ARC's proposed AD process improvements, in conjunction with the FAA's QMS, will help ensure that the AD process is effective and efficient.

In addition, the results of the FAA's oversight activity are evaluated for continual improvement. The TAD will continue to review the measures used to evaluate the timeliness of AD processes, including the timeliness of processing AMOCs, and to oversee compliance with the process through regularly scheduled audits or assessments. As the TAD establishes an internal SMS (in support of continuous improvement), it will provide increased focus on the required safety controls of the process; the relation of the process to the FAA's safety goals and objectives; and control of the potential hazards associated with performing the process.

Later Approved Parts

The ADWG concluded that the end goal of the AD ARC's recommendation to minimize the number of AMOCs for ADs that require design changes is to allow use of "later approved parts" without the need for an AMOC. For example, if an AD requires replacement of a –1 part with a –2 part, and a –3 part is subsequently approved as an alternative to the –2 part, then the objective would be to develop a method that would permit use of the –3 part without the need of an AMOC. The ADWG proposes to allow "later approved parts" in service information that is incorporated by reference in an AD. The service information language would allow installation of a DAH's parts that are approved after the release date of the service information. The ADWG proposes transferring implementation of the "later approved parts" language in the service information with the following considerations:

- The decision whether "later approved parts" are acceptable without an AMOC should be considered on a case-by-case basis.
- Because operators may not have easy access to information concerning the date a part is approved, the ADWG recommends that the service information for the "later approved parts" include some type of recognition that the part complies with the applicable AD. This will ensure operators know which parts are acceptable for installation per the AD.

Maintenance in ADs

The ADWG proposed new AD text to address maintenance and/or preventive maintenance of design changes or repairs required by ADs that do not impose post-modification requirements (such as post-modification repetitive inspections). For these types of ADs, the new AD text is intended to allow certain aspects of the design change to be maintained using normal maintenance activities (that is acceptable methods, techniques, and practices). The new text will be included in the AD template and should be included in certain ADs that require design changes or repairs and that do not impose post-modification requirements. An example of this text is as follows:

(g) Required Modification or Repair

Maintenance

Note: After accomplishing the actions required by paragraph (g), maintenance and/or preventive maintenance under part 43 is permitted provided the maintenance does not result in changing the AD-mandated configuration (reference § 39.7).

The ADWG also proposed a solution to an issue the AD ARC raised concerning a difference in regulatory treatment between an aircraft that has had design changes incorporated during production and an aircraft that has been modified in accordance with an AD to incorporate the same design change. In the first instance, the maintenance program can address any deviations from the configuration under § 43.13, while in the latter instance, deviations must be addressed through the AMOC process. To address this discrepancy, the ADWG proposed new AD text to permit maintenance under part 43 after accomplishing a mandatory design change or repair. This proposal depended on the development of new AWL to protect safety critical configurations mandated by an AD that would apply to airplanes that incorporated the design change in production as well as airplanes that incorporated the design change in-service through AD compliance.

The proposed AWLs would supplement part 25 Appendix H, *Instructions for Continued Airworthiness,* limitations to address maintenance of design changes required by AD. Therefore, development of these AWLs would be voluntary for DAHs. The AD ARC considered the voluntary nature of this proposal to be a significant limitation to its success.

The AD ARC asked the SIWG to review and consider implementation of the proposal for new AWLs in coordination with the ADWG. The SIWG reviewed the AWL proposal, and was not able to reach consensus on implementation plans (see section A2.8 of this report). Therefore, the ADWG proposal regarding AWL will not be implemented as part of the AD ARC activity.

Outcome

The ADWG's implementation actions successfully address AD CRT recommendation and AD ARC tasks. The collective efforts of the ARC's implementation actions will assist with ensuring the AD process is efficient and effective.

In addition, allowing certain later approved parts to be installed without the operator requesting an AMOC contributes toward the effectiveness and efficiency of the AD process. On June 13, 2011, the FAA issued draft AC 20–xxx, which includes a discussion of the use of "later approved parts" language in the SB in section 5–5, Minimizing AMOCs for Design Changes. The FAA plans to issue a final AC by the end of 2011.

Finally, allowing certain aspects of the design change to be maintained using normal maintenance activities (that is acceptable methods, techniques, and practices) instead of operators requesting an AMOC to maintain any aspect of AD configuration also increases the efficiency and effectiveness of the AD process.

B2.3 Ex Parté Communications

Task

> The ATA, in coordination with the FAA, should take steps to clarify to the industry and FAA personnel that ex parté communications can take place if the communications are fully documented and placed in the rulemaking docket for public review.
>
> (AD CRT task 2 report, recommendation No. 3, bullet No. 5)

Review of Issue/Problem

The AD CRT requested clarification about ex parté communications during AD rulemaking,

As stated in appendix 1 to 14 CFR part 11, "[a]n ex parte contact involving rulemaking is any communication between FAA and someone outside the Government regarding a specific rulemaking proceeding, before that preceding closes." Appendix 1 to part 11 specifies the requirements for ex parté contact with the public during any rulemaking process. In particular, ex parté contacts are improper if they affect the basic openness and fairness of the rulemaking process. Therefore, if such a communication is made, the FAA is directed to place a summary of the discussion in the docket to ensure the public is aware of the contact and its outcome.

Implementation

The May 17, 2010, revision to the AD Manual, chapter 3, clarifies the meaning of an ex parté contact and when it is improper; identifies where to record ex parté communication; and provides helpful precautions and practices during the rulemaking process (that is, prior to issuance of notice, during the comment period, after the comment period closes, and after a meeting is announced to the general public.) Although the AD Manual is available to both the FAA and public through the Regulatory and Guidance Library Web site, http://rgl.faa.gov, the FAA is the primary audience for the AD Manual. As such, the FAA included a reference to the section in the AD Manual on ex parté communications in a new AC on DAH best practices with regards to ADs. In addition, ATA revised ATA Specification 111 to include a discussion of ex parté contacts in Appendix B.

Outcome

The ADWG's implementation actions successfully address AD CRT recommendation with the FAA's issuance of chapter 3 of the AD Manual, and the draft and final versions of AC 20–xxx. Chapter 2 of the AC references ex parté communications. In addition, ATA revised ATA Specification 111 to include a discussion of ex parté communication in Appendix B based on the above FAA guidance.

B2.4 First Compliance Date

Task

> At a minimum, the first compliance deadline should always be stated in the NPRM and AD.
>
> (AD CRT task 2, recommendation No. 4, bullet No. 4)

Review of Issue/Problem

Historically, the FAA's TAD specified compliance times in detail in the regulatory text of transport AD final rules. However, because SBs may involve complex compliance times that affect multiple aircraft configurations restating these times in the regulatory text of an AD often requires revising the compliance time terminology presented in the SB to ensure the language used in the AD is legally enforceable. In restating compliance times, the FAA might inadvertently introduce errors. In addition, restating those compliance times from the SB can result in very lengthy ADs. Therefore, as part of the AD-friendly SB initiative,[45] certain manufacturers have agreed to develop SBs using regulatory compliance terminology so that ADs can simply state the appropriate compliance section of the SB rather than restating the compliance times. Because the public may not have access to certain SBs, it would not have access to detailed compliance times for the associated ADs. Therefore, the AD CRT proposed "at a minimum, the first compliance deadline should always be stated in the NPRM and AD."

Implementation

TAD developed written internal procedures that outline its process for handling compliance times. For many ADs, especially those with simple compliance times, TAD identifies the compliance times in the regulatory text of the NPRM and the final rule AD. For certain ADs, especially those with complex compliance times, the SB identifies the specific compliance times and this information is incorporated by reference in the AD. In these ADs, TAD provides a range of those compliance times (including the first and last deadlines) in the NPRM preamble.

[45] For a discussion of AD-friendly SBs see "Agreed Principles and Practices on AD Friendly Service Bulletins Between the Seattle Aircraft Certification Office (SACO), Los Angeles Aircraft Certification Office (LAACO) and Boeing Commercial Airplanes," dated March 31, 2006.

The FAA also issued Notice N8110.112, Placing Service Information into the FDMS,[46] on September 28, 2010, to allow the FAA to post information incorporated by reference in FAA ADs to the FDMS. Posting SBs that are incorporated by reference in final rules will allow the public to view the compliance times in the SB. The notice also allows the FAA to post service information documents that are proposed in an NPRM for IBR if the DAH provides written consent.

Outcome

The ADWG's implementation actions successfully address the AD CRT recommendation through—

(1) TAD internal procedures for documenting compliance times in NPRMs and ADs;

(2) The FAA's posting of service information incorporated by reference in an AD at the NPRM stage making compliance times visible to the public as specified in Notice N8110.112; and

(3) The FAA's plan to include a range of compliance times in the NPRM AD preamble for DAHs that do not provide permission to post information not incorporated by reference or SBs at the NPRM phase.

B2.5 Harmonization

Task

> "The FAA should extend the typical comment period for MCAI [Mandatory Continuing Airworthiness Information] NPRMs. The comment period should be extended from 30 days to 45 days, the standard for noncontroversial FAA NPRMs. In addition, the FAA and foreign national aviation authorities should work to harmonize AD processes.
>
> (AD CRT task 2 report, recommendation No. 5)

Review of Issue/Problem

The AD CRT noted differences in NPRM comment periods between foreign (MCAI) ADs and domestic ADs, and proposed standardizing the comment periods to 45 days.

The AD CRT also recommended that the FAA and foreign NAAs harmonize AD processes. The ADWG noted that AD processes used among aviation authorities are inherently different because they operate under different legislative authority. Therefore, harmonizing AD processes is not always possible.

[46] FAA Notices are temporary directives and the FAA will incorporate the information in Notice N8110.112 into the FAA's next revision of the AD Manual, FAA–IR–M–8040.1.

Implementation

In September 2009, TAD implemented the AD CRT proposal to standardize AD comment periods between foreign (MCAI) and domestic ADs. Comment periods for both types of ADs are now 45 days.

Also in 2009, TAD began to focus on working with the EASA to identify common, legally enforceable terminology for use by both agencies in transport ADs. TAD is currently working to share and assess the AD terminology used by both authorities and to agree on specific standards to the maximum extent possible.

TAD also has initiated this same effort with Transport Canada Civil Aviation (TCCA) and ANAC of Brazil to launch the same effort. Because the majority of foreign (MCAI) ADs apply to products certificated by ANAC, EASA, and TCCA, the efforts to harmonize with these authorities are appropriate. The FAA may consider expanding these efforts to include other authorities in the future.

These ongoing initiatives allow changes to AD terminology to adapt to evolving regulatory needs. These initiatives will improve working relationships and communication among and between the FAA and other aviation authorities with regard to ADs.

Outcome

The ADWG's implementation actions successfully address the AD CRT recommendation through the FAA's extension of the comment period on MCAIs from 30 days to 45 days and TAD's current and future harmonization initiatives.

B2.6 Overlapping ADs

Task

> Multiple ADs affecting airworthiness in the same area of the airplane resulting in overlapping and confusing mandates for air carriers. This can lead to inadvertent noncompliance or reversal of previous AD actions.
>
> For situations involving multiple structural service documents and ADs, the FAA should explore innovations in AD tracking and management (for example, a zonal approach, where tasks are compiled covering all AD requirements for a given area).
>
> (AD CRT task 2 report, finding No. 4, bullet No. 1; recommendation No. 4, bullet No. 5)

Review of Issue/Problem

The AD CRT recommends tracking AD-related design changes to ensure they do not conflict with other mandatory approved designs to avoid potential noncompliance. The ADWG noted the DAH is in the best position to minimize the effect of multiple ADs requiring overlapping or conflicting actions in the same area of the aircraft. Both the

regulatory agency and the DAHs should establish procedures that identify previously issued ADs that could create overlapping and/or conflicting actions that could result in a noncompliance before a new AD is issued.

When the DAH provides the results of its investigation of AD-related service information in the area of the newly proposed AD action, the FAA must consider the effects of possible overlaps or conflicts to ensure that the newly proposed AD action will not lead to a noncompliance.

A prime objective of the FAA's AD-friendly initiative, developed in collaboration with operators and DAHs, is to minimize differences between the service information provided by the DAH and the AD actions that are required to address the unsafe condition. To achieve the objectives of both the AD-friendly initiative and the AD CRT recommendation, the DAH must address the effects of overlapping and/or conflicting service information during the SB development process and the FAA also must evaluate and appropriately address those effects before the FAA drafts the AD.

Implementation

For domestic products, FAA processes have been revised to record on the AD worksheet the list of existing ADs affecting/overlapping the newly proposed AD actions that could lead to a noncompliance, confirm that no conflicts exist, and verify whether the DAH confirmed this information. The new process is used to evaluate planned ADs (that is, the process will not be retroactive). The FAA's draft AC 20–xxx, chapter 4 explains this process and provides best practices for DAHs to identify and avoid conflicting requirements in AD-related SBs. The FAA plans to issue a final AC by the end of 2011.

For Airbus, Embraer, and Bombardier products, those DAHs will work with their respective civil aviation authorities to address any conflicts or overlaps in their ADs. For imported products, the FAA will continue to follow FAA Order 8040.5, Airworthiness Directive Process for Mandatory Continuing Airworthiness Information, which relies on issuance of foreign ADs before drafting and issuing FAA ADs.

Outcome

The ADWG's implementation actions successfully address the AD CRT recommendation by DAH/FAA implementing a system to identify overlapping/conflicting SBs/ADs that could lead to noncompliance. The FAA changed the AD worksheet to include a section on ADs affecting or overlapping the current AD action, confirming no conflict exists, and identifying whether the DAH confirmed the information. In addition, the FAA documented the DAH process as a best practice in draft AC 20–xxx, Chapter 4, Avoid Overlapping and Conflicting SBs dated June 13, 2011. The FAA plans to issue a final AC by the end of 2011.

B2.7 Posting Service Information

Task

Occasionally, the OEM's service instructions are not available when the AD NPRM is issued. In addition, copies of service instructions are not included in the Government's electronic regulatory docket system. In either case, this prevents air carriers from having the full comment period to comment on the specifics of the service document.

OEMs should review Intellectual Property and Export Compliance policies to allow easier public access to NPRM- and AD-referenced service instructions via the electronic regulatory docket system.

(AD CRT task 2 report, finding No. 4, bullet No. 2; recommendation No. 4, bullet No. 3)

Review of Issue/Problem

After an AD is issued, § 21.99(a)(2) requires the DAH to make available the descriptive data for required design changes to all operators of the product. Although DAHs typically provide this data via service information to operators before AD issuance, the FAA does not make the information available directly to the public. Placing the service information associated with correcting an unsafe condition in the FDMS at Web site http://www.regulations.gov would ensure public access.

Additionally, the FAA is under scrutiny from the Office of the Federal Register (OFR) for not making IBR material readily available. The OFR has indicated that materials that are not readily available to the regulated public do not qualify for IBR approval under 1 CFR § 51.7(a)(4). If the FAA were not allowed to include IBR material in ADs, then ADs would become significantly lengthy and potentially confusing because the FAA would have to include the corrective action procedures in the AD.

Implementation

The FAA issued Notice N8110.112, Placing Service Information into the FDMS, on September 28, 2010. This notice requires service information that is incorporated by reference to be placed into the FDMS. For service information that is not incorporated by reference, written consent is required from the DAH before placing the service information in the FDMS. The Delegation & Airworthiness Programs Branch, AIR–112, sent letters to Airbus, Bombardier, and Embraer requesting their positions for posting service information required to address an unsafe condition at the NPRM stage into the FDMS. Each DAH provided its position on this issue. Boeing has given its consent to post service information at the NPRM stage that is not incorporated by reference in an AD to the FDMS.

Outcome

The ADWG's implementation actions successfully address the AD CRT's recommendation for OEMs/DAH to review intellectual property and export compliance policies to allow easier public access to NPRM- and AD-referenced service instructions via the FDMS. The ADWG recognizes that the proposed solution may not fully address the AD CRT's concern that service instructions are not available when the FAA issues an NPRM given that a DAH's permission is necessary to place service information proposed for incorporation by reference in an AD into the FDMS at the NPRM stage and it may choose to decline. In addition responses received from Airbus, Bombardier, and Embraer state that their companies do not agree with posting AD-related service information to the FDMS because their service information is available electronically via their respective Web sites well in advance of the FAA publication of an AD NPRM. However, the ADWG considers FAA issuance of FAA Notice N8110.112 to be an acceptable solution to the AD CRT recommendation. In accordance with FAA policy, the notice will be formally incorporated into FAA guidance, specifically the AD Manual by September 2012.

B3.0 CONCLUSION

The ADWG successfully addressed recommendations assigned by the AD ARC. The implementation actions discussed above meet the key objective to help ensure the AD development process is effective and efficient. The improvements in the AD development process are as follows:

- Addressed earlier SB credit and ex parté communications in the AD Manual in chapter 3.
- Standardized domestic AD worksheet (May 2011) addresses potential overlapping/conflicting ADs and credit for earlier service information.
- Standardized domestic AD template (May 2011) addresses maintenance expectations for certain ADs and credit for earlier service information.
- Issued draft AC 20–xxx, dated June 13, 2011. The AC contains information on ex parté communications and new processes to check for overlapping/conflicting AD actions and use of "later approved parts" in SBs/ADs. The FAA expects to issue a final AC by the end of 2011.
- Issued Notice N8110.112, Placing Service Information in the FDMS dated September 28, 2010. Posting service information to the FDMS removes the need to include initial compliance times in NPRM and final rule ADs.
- Developed TAD guidance to include a range of compliance times in the NPRM preamble for NPRMs that do not include specific compliance times in the regulatory requirements.
- Standardized 45-day comment period for both domestic and foreign (MCAI) NPRMs.

- Continue harmonization initiatives through TAD business plan processes.
- Developed FAA/DAH process to avoid overlapping/conflicting AD-related SBs and ADs.

APPENDIX C—AD IMPLEMENTATION WORKING GROUP

C1.0 INTRODUCTION

The AD ARC formed the AD Implementation Working Group (AIWG) to address AD CRT recommendations related to air carriers/operators implementing ADs and maintaining compliance with ADs. The AIWG's key objective is to identify and develop air carrier guiding principles, processes, and procedures, and best practices for implementing and maintaining compliance with ADs to ensure a safe product.

The AIWG is comprised of 18 members representing AFS, AIR, U.S. air carriers, U.S. and foreign aircraft manufacturers, and repair stations. The AIWG met on six occasions and held monthly and weekly teleconferences to evaluate and develop implementation actions for its assigned recommendations. The AIWG lead tracked the working group's progress using project plates that contained the assigned recommendation, the expected outcome/deliverables, and individual milestone tasks. The AIWG lead provided status updates to the AD ARC members at the ARC meetings noting if the working group would meet its schedule to complete its review and analysis of the assigned recommendations or had encountered difficulties.

C2.0 ASSIGNED TASKS

The AD ARC assigned the AIWG the following seven recommendations to evaluate and develop implementation actions:

- Approval all AMOCs as global;
- CMO approval not required to implement an AMOC;
- AD Compliance—Crisis process;
- Prevent Class 2 ADs from being undone/Process or marking of AD installations.
- Maintain AD configurations—continually verify AD accomplishment, sampling of AD projects to ensure demodification has not occurred;
- Implement training on AD process and to reinforce best wiring practices; and
- Air carrier control process.

The AIWG documented its evaluation of each recommendation and the implementation action in a summary sheet report. The AIWG addressed the seven recommendations in eight summary sheets. The complete unedited working papers that documented the AD ARC's working groups' review, analysis, and decisions are available for viewing and download from the AD ARC Web site at http://www.faa.gov/aircraft/air_cert/continued_operation/ad/ad_arc/. Each assigned task, its implementation action, and outcome are excerpted from the AIWG summary sheets and presented below.

C2.1 AD Installation and EWIS Training

Task

Each air carrier, OEM, and repair facility should implement training—

- On the AD process and AD implementation.
- To reinforce best wiring practices (for example, EAPAS).

(AD CRT task 1 report, recommendation No. 4, bullet Nos. 1 and 2)

Review of Issue/Problem

The AIWG noted that any operator that is responsible for performing maintenance, preventive maintenance, or alterations required by an AD should have processes in place that consider the training of aviation maintenance technicians (AMTs) before accomplishment of work. There should be a basic AD compliance training course that establishes an awareness of the AD processes and why it is essential to properly perform the work required by an AD and to maintain those requirements. Training of AMTs will ensure the proper emphasis on the critical nature of potential failure modes leading to the defined unsafe condition. In addition, AD initial compliance may be affected by a previously installed modification, by an STC, or by other work in the area. AD-specific training should include an assessment of the AMT's knowledge and capability and the awareness of the details necessary for conformity to the requirements mandated by the AD.

For complex ADs, the operator's training program should provide a risk assessment of the training needs as well as "site-specific" restrictions for accomplishment of particular actions. These considerations can be used to limit the variability introduced by accomplishment across a system and/or leverage the use of maintenance locations where knowledgeable personnel, appropriate tooling, and other capabilities are available. Further, before AD implementation, the operator should have a program in place to determine, based upon a risk assessment, whether specific maintenance training is needed. In some cases, the AD will require specific training for personnel and in those cases the training must be accomplished and documented before AD implementation. Complex ADs as well as those involving new wiring practices or avionics may require specific training that is not generally available to the AMT therefore it is incumbent upon the operators to consider the technician's qualifications and training before assigning tasks that have safety implications such as AD accomplishment.

The AIWG found that the 2007 EAPAS effort developed extensive training in the new lessons learned for the design, certification, installation, maintenance, and inspection of aircraft wire systems. The AIWG believed this is another opportunity to stress the need for AMTs, including those working specifically for air carriers, DAHs, and repair stations to receive wiring training that is guided by AC 120–94, Aircraft Electrical Wiring Interconnection Systems Training Program.

Implementation

The AIWG submitted draft language for the AD management AC to the FAA addressing the issues discussed under its review of the issue/problem above. The AIWG assumes the ATOS EPI and SAI documents affected by the draft AD management AC will be revised as appropriate. Although not specifically required under § 121.375, Maintenance and preventive maintenance training program or § 121.1111, Electrical wiring interconnection systems (EWIS) maintenance program; air carriers, DAHs, and repair stations should have an EWIS training program in place.

Outcome

The AIWG's proposed implementation actions successfully addresses the AD CRT's recommendation to implement training on the AD process, AD implementation, and best wiring practices by operators establishing a basic AD compliance training course that establishes an awareness of the AD processes and why it is essential to properly perform the work required by an AD and to maintain those requirements. Guidance for operators to establish such training is contained in AC 39–9, appendix 3 on Air Carrier Training. The appendix provides best practices for reinforcing AD awareness and the development of skill-specific training such as NDT and EWIS. In addition, the FAA has revised the EPIs and has issued a temporary revision to the SAIs to reflect the guidance in AC 39–9.

C2.2 Air Carrier AD Compliance Process

Task

- ATA should review the primary elements for air carrier internal compliance planning discussed above and disseminate like information to the industry. (See discussion of the Lead Airline Process under section 2.2.2 AD Development, AD CRT Task 2 report.)
- The FAA and ATA jointly should develop a policy for CMO participation during the air carrier's AD compliance planning process. CMO participation during the process will educate the ASIs on the air carrier's AD compliance plan recommendations. However, the CMO should not perform a quality control function or require a signoff. Currently, FAA PIs are invited to reliability board meetings at some air carriers but otherwise are not involved in developing EAs[47]. The intent of advance CMO participation is to remove the need for AMOCs and reduce paperwork violations and infractions.
- CMOs should participate in AD prototyping. However, this monitoring should not require a signoff from the CMO or be a required step to completing any work.

  (AD CRT task 2 report, recommendation No. 6, bullet Nos. 2, 3, and 4)

[47] Engineering authorizations.

Review of Issue/Problem

Based on the strict interpretation of AD compliance, the industry has developed best practices to help with consistent implementation of AD-related actions. For this reason, it is important to identify the following through air carrier manuals and FAA guidance material and policy: (1) the elements for effective AD compliance planning and implementation; (2) the specific associated processes and tasks that comprise these elements; and (3) the individuals with authority and responsibility for the elements.

In addition, ASIs are often not familiar with operators' AD compliance plans, which can raise questions and concerns as to how an operator is complying with a particular AD. Having ASIs participate in the operator's AD planning process will give the ASI the opportunity to comment on any potential compliance issues, as well as provide the ASI opportunity to offer guidance and suggestions. ASI participation is not mandatory. As such, the draft documentation will advise that it is a best practice to invite the local FAA to the operator's compliance planning meeting.

ASIs also are not always familiar with what is involved in accomplishing AD tasks. ASI participation in the prototype process fosters a culture of open and honest communication with the goal of improving continued operational safety.

Implementation

The AIWG proposed to develop industry best practices for operators to follow in response to ADs. The AIWG's implementation plan includes pre-planning, implementation, and AD verification programs. These best practices also include ASI and CMO participation in AD compliance planning and on-aircraft prototyping. The FAA incorporated the AIWG's suggested wording into AC 39–9. The AIWG also proposed language for FAA Order 8900.1 to identify the ASI's role in the air carrier's AD compliance planning process. The FAA incorporated the AIWG's suggested wording in FAA Order 8900.1.

The AIWG also recognized that upon issuance of AC 39–9, the FAA will revise the EPI and SAI DCTs to include a reference to the new AC for industry best practices. Revision of the EPI and SAI DCTs will encourage operators to use these practices and the AC and promote an industry standard method of processing ADs to comply with the applicable regulations.

Outcome

The AIWG's proposed implementation actions successfully address the AD CRT's recommendation to develop policy for CMO participation during the air carrier's AD compliance planning process and AD prototyping. The FAA issued AC 39–9 that includes appendix 1 on Air Carrier Compliance Planning that provides focus areas for consideration during the AD compliance planning process and includes guidance to invite the CMO or Flight Standards District Offices (FSDO) to attend the operator's final document review meeting as part of the AD compliance coordination phase.

In addition, the AC includes appendix 4 on Air Carrier Prototyping to help ensure the accuracy of the implementation document. Appendix 4 contains best practices on silent prototyping, prototyping roles and responsibilities, feedback, outbrief meetings, and support systems to address technical concerns.

The FAA also issued a section on Evaluating an Airworthiness Directives Management Process in FAA Order 8900.1 that states an operator may request/invite ASIs to the AD planning meeting. Thus, the operator may develop a process for notifying and inviting its CHDO/ PI or local FSDO prior to AD planning meetings.

A [Change] notice to AC 39–9 and Order 8900.1, chapter 58 also more directly discusses ASI participation in operator prototyping activities.

AC 39–9 also contains an extensive discussion of the primary elements for air carrier internal compliance planning. This indirectly addresses the AD CRT recommendation for ATA to review the primary elements for air carrier internal compliance planning discussed above and disseminate like information to the industry as the AC targets the AD management process for industry. ATA also will reference AC 39–9 in ATA Specification 111. See discussion in section 2.6.1 of this report.

Finally, the FAA has issued updated EPI and SAI DCTs in either temporary or final form incorporating the AD process improvements.

C2.3 All AMOCs Global

Task

> The FAA and industry should develop a process to approve all AMOCs as global unless the requesting air carrier specifically states that it does not want the AMOC shared. The global AMOCs would be posted on OEM Web sites accessible to all air carriers in a way that protects the intellectual property rights of the OEMs and the air carriers where appropriate. The industry and the FAA also should ensure that CHDOs do not require air carriers to gain their approval to implement a global AMOC.
>
> (AD CRT task 2 report, recommendation No. 9, issue 1)

Review of Issue/Problem

The AD CRT task 2, recommendation 9 consists of two separate recommendations: (1) approving all AMOCs as global and posting these on a Web site for ease of accessibility to all air carriers and (2) clarify the role of the ACO and the PI (principal maintenance inspector (PMI) or principal avionics inspector (PAI)) in AMOC approval and implementation. The AIWG addresses the first part of the recommendation in this section.

There was a strong consensus within the AIWG that it is impracticable to approve all AMOCs as global because most AMOC requests address unique configuration issues or situations for specific serial number aircraft that would not be applicable to other aircraft. However, all requests that have general applicability should be reviewed to determine whether a global AMOC can be issued.

FAA Order 8110.103, Alternative Methods of Compliance defines a global AMOC and the AMOC approval process. A global AMOC applies to two or more air carriers and is used to obtain approval for multiple serial numbers or makes and models as specified in the AD. The AMOC approval process, whether for a single aircraft or for a fleet, allows anyone to request an approval from the FAA. Once compliance has been shown, the FAA issues the approval. In practice, the vast majority of AMOCs are approved by DAH delegated organizations or personnel within the DAHs. Of the AMOCs submitted directly to the FAA, a majority come from the DAHs for items they are not delegated to approve but are reviewed by delegated personnel with a recommendation for approval. The remaining requests typically come directly from air carriers or aircraft owners.

In reviewing the requests, the FAA determines if the AMOC addresses the unsafe condition and demonstrates compliance with the applicable regulations. Often this demonstration includes design data, analysis, and validated inspection methods that may be considered proprietary information by the requestor. Global AMOC requests must account for the fact that there may be many different configurations. Every global AMOC proposal must be compatible with every aircraft covered under the AMOC. Because in most cases the DAHs have the design data for each individual configuration, they are in a unique position to determine the need for and often request global AMOCs. In fact, the vast majority of global AMOCs are issued to the DAHs. As both the requestor and holder of the global AMOC, the DAH is best suited to making this information available to its customers and has an incentive to do so.

If several different air carriers submitted similar requests for AMOCs directly to the FAA with the necessary substantiating data, the FAA will issue an AMOC individually to each of those air carriers. However, to make a determination of whether a global AMOC can be issued for that same issue, the FAA would need to know if there are other configurations of that design in the field. The FAA does not have this data readily available and does not have the resources to obtain and interpret the data. The FAA typically relies on the DAH to conduct this analysis and then makes a determination based on the DAH's request and the data presented. If an air carrier or other party requests the global AMOC, it would be incumbent on the requestor to demonstrate applicability for the entire fleet. If this has not been demonstrated, the FAA does not have the resources to make this finding

The AIWG considered many options in developing solutions and noted there are legal issues associated with sharing of proprietary data among the air carriers, FAA, original equipment manufacturer (DAHs[48]), and other requestors for AMOCs.

Implementation

The AIWG solutions include a shared implementation approach where the air carriers, DAHs, and FAA have responsibility in expanding the use of global AMOCs.

FAA Policy Memo.

(1) Document DAHs best practice of implementing a formal process to review all AMOC requests as candidates for issuance as global AMOCs when applicable. The criteria for the formal process review of AMOC requests should include the following: review each AMOC request as a candidate for global, including requests for the same AMOC from two different air carriers, and review AMOCs issued by the ACO for possible global AMOC candidates. The FAA Policy Memo will also document DAHs best practice of posting global AMOCs on their respective Web sites and provide periodic notifications of their release. The memorandum includes the type of information to be posted.

(2) Document ARSA, ATA, and RAA best practices of posting links to DAH Web sites.

AC 39–9, Airworthiness Directives Management Process. The FAA included in the new AC on AD Management a section recommending air carriers include statement permitting the FAA to share the subject of the request with the DAH or to use the information to issue a global AMOC. The AC also recommends air carriers include language in their AMOC request letters to the DAHs that permits the DAHs to use air carrier fleet AMOC requests as the basis for requesting a global AMOC. The FAA published AC 39–9 on June 1, 2011.

FAA Order 8110.103, Alternative Methods of Compliance. The FAA revised Order 8110.103 to create a new paragraph 4–3 f, Sharing AMOC, Requests with DAHs. This paragraph requires the FAA AMOC approving office to provide the DAH a list of the AMOCs requests that have included permission to be shared. The DAH's global AMOC database allows air carriers to search previously approved AMOCs that may apply to their aircraft. To assist DAHs in identifying AMOCs that might be candidates for a global AMOC, air carriers may include a statement in the AMOC request letter that permits the approving ACO or directorate office to share the subject of the AMOC with the DAHs. The approving office will periodically share with the DAH the subject of all AMOC requests that include the following permission statement; "Air carrier XYZ grants the FAA approving office permission to share the subject of this AMOC request with the DAH for the article or product for their consideration in asking the FAA to issue a global AMOC for on this subject."

[48] DAH as used in this section it is intended to refer to manufacturers of transport airplanes and the engines installed thereon. It is assumed that some small business DAHs might not have the same capabilities as larger businesses such as engineering departments.

Outcome

Although the AIWG found it unfeasible to make all AMOCs global, the AIWG's implementation actions successfully address the first part of the AD CRT recommendation by expanding the use of global AMOCs and having DAHs post global AMOCs on their Web sites and provide notification to subscribers of their release. In addition, in place of a policy memo, the FAA issued draft AC 20–xxx to include section 5–2, Sharing AMOC Proposals which contains a statement for operators to provide permission to DAHs to make an AMOC global and section 5–4, Posting Global AMOCs on Web site. The FAA also revised FAA Order 8110.103 [CHG 1] and AC 39–9 [Change 1] as noted above to support the expanded use of global AMOCs.

Although the FAA decided it would not address the best practice of associations posting links to DAH Web sites in its guidance, ARSA, ATA, and RAA may post links to DAH Web sites on their respective association Web sites.

C2.4 ASIs and AD Prototyping

Task

The ATA should add to ATA Specification 111, or develop a new specification to address (upon adoption of an AD) AD compliance planning that includes the following industry guidelines:

- Invite the ASI to air carrier compliance planning sessions and AD compliance prototyping for better understanding of issues.
- Ensure the accuracy and clarity of the engineering order (EO) or other implementation document. The air carrier should consider silent prototyping where a technician prototypes the EO without verbal or other assistance.
- Augment air carrier compliance planning with an AD verification program.

(AD CRT task 2 report, recommendation No. 3, bullet No. 4)

Review of Issue/Problem

ASIs are often not familiar with operators' AD compliance plans, which can raise questions and concerns as to how an operator is complying with a particular AD. Having ASIs participate in the carrier's AD planning process will provide ASI visibility of any issues with complying with the AD, the plan for accomplishment, as well as provide them the opportunity to provide guidance and offer suggestions to facilitate compliance.

Compliance documents are sometimes difficult to understand or can contain errors that are not detected during the paperwork review. An on-aircraft prototype of the work instructions would ensure accuracy of the instructions and the ability to accomplish the work as written. This is an actual prototype of the air carrier's implementation document that resides outside of the ATA Specification 111 service instruction prototyping process. The ATA Specification 111 prototype may not capture all of the specific issues, concerns, or configurations that an air carrier may experience. Some ADs are capable of being undone during normal maintenance activities. Consideration to how an AD can be undone, or continued verification of configuration, should be included in the AD compliance planning process.

Implementation

The AIWG proposed to develop industry best practices for operators to follow in response to ADs. The implementation plan includes pre-planning, implementation, and AD verification programs, as well as prototyping of the work instructions. Prototyping the work instructions will ensure that the instructions are clear and compliant and can be repeated. The AIWG expected this suggested wording be incorporated into a new AC on AD management.

The AIWG recognized that upon issuance of the proposed AC, the FAA will revise the EPI and SAI DCTs to include reference to the new AC for industry best practices. Revision of the EPI and SAI DCTs will encourage the use of these practices and the AC and promote an industry standard method of processing ADs to comply with the applicable regulations.

The AIWG also proposed to develop language for FAA Order 8900.1 to identify the ASI's role in the air carrier's AD compliance planning process. The suggested wording is intended for incorporation in a revision to FAA Order 8900.1, or into a policy letter for ASIs. The AIWG assumed that the FAA may not always attend the AD compliance planning meetings or prototypes when invited.

Outcome

The AIWG's proposed implementation actions successfully address the AD CRT's recommendation to develop policy for CMO participation during the air carrier's AD compliance planning process and AD prototyping. The FAA issued AC 39–9, Airworthiness Directives Management Process which includes Appendix 1 Air Carrier Compliance Planning that provides focus areas for consideration during the AD compliance planning process and includes guidance to invite the CMO or FSDO to attend the operator's final document review meeting as part of the AD compliance coordination phase.

In addition, the AC includes Appendix 4 Air Carrier Prototyping to help ensure the accuracy of the implementation document. Appendix 4 contains best practices on silent prototyping, prototyping roles and responsibilities, feedback, outbrief meetings, and support systems to address technical concerns. The AC also contains development of an AD verification process as part of the planning phase. Appendix 5 contains the specifics for establishing a sampling program to identify ADs that require verification.

In addition, the FAA issued a section titled Evaluating an Airworthiness Directives Management Process in FAA Order 8900.1 which states an operator may request/invite ASIs to the AD planning meeting.

AC 39–9, Change 1 and Order 8900.1, chapter 58 also more directly discuss ASI participation in operator prototyping activities. The FAA also has issued updated EPI and SAI DCTs in either temporary or final form incorporating the AD process improvements.

Finally, ATA has revised ATA Specification 111 to reference AC 39–9. See discussion under section 2.6.1 of this report.

C2.5 CMO Role in AMOC Process

Task

> The FAA and industry should develop a process to approve all AMOCs as global unless the requesting air carrier specifically states that it does not want the AMOC shared. The global AMOCs would be posted on OEM Web sites accessible to all air carriers in a way that protects the intellectual property rights of the OEMs and the air carriers where appropriate. The industry and the FAA also should ensure that CHDOs do not require air carriers to gain their approval to implement a global AMOC.
>
> (AD CRT task 2 report, recommendation No. 9, issue 2)

Review of Issue/Problem

The AIWG discussed that the lack of clarity of the PI's role does not appear to be as pervasive as the AD CRT recommendation indicates. However, the AIWG found there is an opportunity to improve awareness and guidance addressing PI's s role in the AMOC process.

AFS has no published guidance material for use by its ASIs that defines their role in the process. FAA Order 8110.103A is primarily written for "Aircraft Certification Service Personnel responsible for AMOCs."

The intent of § 39.19[49] is for the PI to be aware of the request so that appropriate information can be provided to the ACO that will approve the request. The PI is to be notified but not approve the request. The PI should provide comments to the ACO regarding information such as the requestors' fleet configuration, operational impact, environment, or maintenance practices that might be useful to the ACO in evaluating the request.

Many air carriers request technical support from the DAHs. DAHs often obtain third party AMOCs from the ACOs on behalf of the air carriers. Sometimes these AMOCs are serial number specific and other times they are global (that is, they apply to the entire fleet). Air carriers must notify their PI (PMI or PAI) of these AMOCs prior to use but no further approval is required from the PI.

Some air carriers complain that they are required to receive PI approval before implementing an AMOC. Some air carrier's general maintenance specifications may include language requiring PI approval. In this case, PI approval would be required; however having PI approval included in general maintenance manuals is not a regulatory requirement.

There is an industry-wide perception that PIs are not standardized in their interpretation of the approval/notification requirements of § 39.19 and their role in the AMOC process.

Implementation

- Increase PI's awareness and understanding of their role in the AMOC process through a series of regional briefings. The FAA completed regional briefings in June 2010 and included a slide in its presentation to directly address this issue.
- Create language in FAA Order 8900.1 providing guidance on the PI's role in the AMOC process. This change is intended to establish policy for future training and use by FAA field inspectors.
- Reword ATOS SAI 1.3.6 (reference Question 1.8) "FAA approval" to "FAA approval by the manager of the FAA office identified in the AD."

Outcome

The AIWG's proposed implementation actions successfully address the AD CRT's recommendation to ensure that CHDOs do not require air carriers to gain their approval to implement a global AMOC. The FAA issued AC 39–9, Airworthiness Directives Management Process which states the AD identifies the responsible ACO/ECO that approves/disapproves AMOC proposals. In addition, the FAA issued chapter 59 to FAA Order 8900.1 that states the PI may add comments to the AMOC proposal, but cannot approve/disapprove it. The PI must forward a copy of the AMOC proposal to the manager of the FAA office identified in the AD, or its delegated representative.

[49] 14 CFR § 39.19 defines alternative methods of compliance (AMOCs) to ADs and how these are to be transmitted to the FAA. In general, it requires requestors to either submit it directly to the principle inspector (PI) for comment and transmittal to the appropriate Aircraft Certification Office (ACO) or the AMOC request can be transmitted to the PI and the ACO simultaneously.

In addition, the FAA completed regional briefings on the ASI role in the AMOC process at various locations throughout the United States from January through June 2010.

Note: The FAA will publish updated EPI and SAI to match any FAA guidance during its next publication cycle in September 2011.

C2.6 Communication and 24/7 AMOC Process

Task

> Responsive communication and industry collaboration are essential in crises involving widespread AD compliance issues affecting air carriers. The ACO and OEM should develop contingency procedures and disseminate them internally in advance of future events. This will ensure that points of contacts are established for air carrier use in expediting resolution of fleet wide issues. The ATA may facilitate this process if air carriers immediately advise the ATA of a significant compliance issue that may be widespread and newsworthy.
>
> (AD CRT task 2 report, recommendation No. 10)

Review of Issue/Problem

This issue relates to the interaction among air carrier, DAHs, AEG and ACO at different levels. Communication needs to occur at the first sign that there may be a noncompliance that affects multiple aircraft and should take place within the different entities with the right escalation level.

The FAA has developed an internal 24/7 process that can be invoked by AFS personnel including when ACO support is needed after hours. The AR–ANM–029–W2 published in December 2009 includes a path for air carrier or CHDO contact of the ACO.

All major DAHs provide 24/7 technical support to their air carriers including points of contact. This support should include a crises escalation process that facilitates the involvement of the air carrier, the PI (either PMI or PAI) and the ACO.

Implementation

FAA work instruction AIR–ANM–029–W2, establishes 24/7 urgent AMOC request process for ACO internal support to CHDO and the FAA briefed CHDOs on the process.

All DAHs have a technical helpdesk to ensure 24/7 support to air carriers to prevent groundings due to potential AD noncompliance. Air carriers have an existing means to initiate contact with both the CHDO and the DAH's technical helpdesk. Air carriers should establish and use contact points with the DAHs before the issue becomes a crises.

The air carrier and FAA Regional Office, as a best practice, should jointly develop an issue resolution process. For compliance issues, this process may include communication first with the DAH and then as necessary with the AEG and ACO through the PI. The practice also should include an escalation contingency plan. The communication process should include a risk management/safety assessment for resolution purposes for aircraft and possibly fleet wide issues.

The new AD Management AC being developed by AFS–300 through the AD ARC working groups includes language recommending air carriers develop a conflict resolution process with their FAA Regional Office and includes a risk management/safety assessment process. This process should ensure that the air carrier and the PI mutually understand that the purpose of the FAA internal 24/7 process is for the PI to communicate with the AEG and ACO on significant compliance issues.

In a new FAA AD Policy Memo, include language recommending OEM/DAHs put a process in place or document existing process to ensure 24/7 support to air carriers to prevent grounding due to potential AD noncompliance.

In the new AD management AC, include language recommending that ATA-member air carriers invoke the provisions of the ATA Specification 111 for a significant compliance issue that may be widespread and newsworthy. Other associations (such as ARSA and RAA) should establish a similar process. The AC should include language regarding ATA and other air carrier associations' coordination with regulatory authorities and OEM/DAHs. Air carriers should establish and use contact points with the OEMs/DAHs before the issue becomes a crises.

Outcome

The AIWG's proposed implementation actions successfully addresses the AD CRT's recommendation to recognize that responsive communication and industry collaboration are essential in crisis situations involving widespread AD compliance issues affecting operators. The FAA issued AC 39–9, Change 1, Airworthiness Directives Management Process which states as part of the operator's/air carrier's AD management process, it is recommended that the operators/air carriers develop a process to coordinate AD compliance matters with the local FAA office. This process may reference a conflict resolution process for circumstances needing immediate resolution. Before agreeing with an operator's/air carrier's process, the FAA local office will ensure that the FAA's role, as defined in the process, is consistent with FAA policy. In addition, the AC suggests air carriers that are members of industry associations consider using established processes such as ATA Specification 111 or similar processes developed by other associations, for significant compliance issues that may be widespread and newsworthy. This could include coordination with associations, regulatory authorities, and OEMs/DAHs.

In place of a policy memo, the FAA issued draft AC 20–xxx, which includes a section on 24/7 AMOC support. The section specifies to help prevent grounding aircraft due to potential AD noncompliance by an air carrier, a DAH should develop a process for 24/7 support. AC 39–9 also includes a discussion of 24/7 AMOC support in appendix 1 to the AC.

Note: In AC 39–9 Change 1 the FAA deemed the FAA local office as the appropriate point of contact for conflict resolution issues instead of the FAA Regional office.

C2.7 Maintaining AD Configurations

Task

Each air carrier should develop processes and procedures to prevent class 2 ADs from being undone during normal maintenance actions.

(AD CRT task 1 report, recommendation No. 3, bullet No. 2)

Each air carrier should develop processes and procedures to ensure AD configurations are maintained.

(AD CRT task 1 report, recommendation No. 3, bullet No. 3)

The Team recommends the following related to AD development: Air carriers must have a process in place to continually verify AD accomplishment.

(AD CRT task 2 report, recommendation No. 4, bullet No. 6)

Air carriers should develop practices to address normal maintenance or other actions that could possibly demodify an AD configuration, particularly class 2 ADs. These could include the following: Process enhancements or physical marking of AD installations for nonstructural ADs. This alerts mechanics to the presence of an AD installation in the area where they are working.

(AD CRT task 2 report, recommendation No. 11, bullet No. 1)

Air carriers should develop practices to address normal maintenance or other actions that could possibly demodify an AD configuration, particularly class 2 ADs. These could include the following: Quality assurance sampling of AD projects to verify the correct setup, and/or a sampling program that physically verifies that de-modification has not occurred.

(AD CRT task 2 report, recommendation No. 11, bullet No. 2)

Review of Issue/Problem

Class 2 ADs as defined by the AD CRT are very prescriptive; there is a high risk that subsequent maintenance may inadvertently create an unintentional alteration from the mandated condition or configuration where the creation of the non-compliant condition is more likely to occur if the AMT is unaware of the AD requirements. This possibility is particularly troublesome when the DAH's manuals do not reflect the AD-mandated condition or configuration. For example, a SWPM that no longer reflects how a particular area of the aircraft must be wired.

Unless process enhancements are provided to ensure configurations are maintained, AMTs working near AD installations with a high risk of unintentional alteration any time after the AD is implemented may inadvertently deconfigure the AD installation by employing standard maintenance practices. This condition may be more difficult to detect if the AD does not contain a repetitive inspection requirement or if the area is not inspected according to an associated maintenance program work card.

Unless there is a method of continually verifying ADs (such as re-verification at maintenance check visits), multiple ADs in the same area, then overlapping and confusing AD mandates and subsequent maintenance performed over the years may result in inadvertent unintentional alteration of an AD. This may be made worse by work instructions that can inadvertently omit detailed AD requirements that are needed to ensure continued AD compliance.

Some planning processes may not include an AD Compliance Control Board meeting or equivalent where predefined potential actions are reviewed and confirmed; this may make them more susceptible to AD noncompliance issues. This AD board or equivalent meeting would consist of all affected departments (engineering, planning, quality assurance/quality control, the AD group, and other affected work groups) that are responsible for ensuring AD implementation and compliance. It is during this meeting that the risk of unintentional alteration should be discussed, and specific inspections that must be accomplished as related to § 39.11[50] must be discussed with appropriate mitigation strategies determined, which may include, but may not be limited to, additional process enhancements or the potential physical marking of ADs in the area.

Implementation

The AIWG's recommendation includes the following process enhancements as measures of alerting the AMTs of any installed ADs that could affect a task.

- Ensure design changes by DAHs associated with ADs are appropriately incorporated in the DAH's ICA so that the required configuration or corrective action is universally applied.
- Add notifications to the air carriers' manuals (AMM, CMM, and work cards). The AD requirements should be added to the air carrier's manuals before approval and issuance of the AD compliance work cards.

[50] § 39.11 What actions do airworthiness directives require?

- Verify AD compliance by virtue of previously accomplished SBs (or other service instructions contained in an NPRM) is in accordance with the final AD requirement.
- Determine the need for specific labor classification/skills (for example, avionics, structures, NDT, and/or aircraft engines), or limiting variation by using a "center of excellence," or using other methods of ensuring continued AD compliance where an uninformed or unqualified AMT, performing other maintenance in the area, may inadvertently take the aircraft out of the mandatory compliance.

One process enhancement includes updating and adding notifications and cautions to the air carriers' manuals (AMM, CMM, and work cards) under § 43.13(c). This allows the air carrier to address the ongoing compliance issues with the AD concern according to the applicable ICAs. For certain newer ADs, ICAs are provided by the DAH under § 121.1109 (supplemental inspections), § 121.1111 (EWIS maintenance program), and § 121.1113 (fuel tank system maintenance program). These are examples of current ICA requirements for changing conditions.

Part 21, subpart C further requires that all changes to design be approved and the FAA should not approve a design change that results in an AD without requiring a subsequent change to or creation of the ICA (as required by § 21.50) that ensures the AD mandates are continued after the original modification or action to address the unsafe condition.

When the DAH references ICA revisions or sections in the SB that are incorporated by reference in an AD, the air carrier should evaluate whether revision to its maintenance program is necessary to prevent inadvertent AD unintentional alterations. In accordance with §§ 21.50, 25.1529, and 25.1729 and appendix H to part 25, the DAH is required to provide ICAs for the type design and changes to the type design. If applicable, the air carrier should verify that an ICA/AWL, because of an AD, is incorporated into the air carrier's AD sampling (re-verification) program when the air carrier determines that a high risk of unintentional alteration is noted during an assessment of the new AD.

The AIWG determined class 2 ADs refers to ADs having a high risk of noncompliance through the course of normal maintenance. Factors that may identify a high-risk AD are unintentional alteration to include actions in areas that are frequently maintained, serviced, or exposed to elements; and particularly if the installed or new AD is a workmanship-intensive modification or components that are frequently repaired.

The AIWG proposed that another method of detecting potential AD noncompliance would be a sampling (AD re-verification) program. Using a process audit procedure during scheduled maintenance visits can be an effective method of monitoring continued AD compliance. Although the AIWG views AD sampling as a separate program from CASS AD handling (see AC 120–79A), the air carrier can take advantage of elements of the CASS audit method where it addresses ADs under § 121.373 for the AD sampling program. Further, the AD sampling (re-verification) program should verify that targeted ADs (those ADs assessed and included in the air carrier's sampling program) are appropriately evaluated, accomplished, and tracked and that any ADs that have been reconfigured are appropriately evaluated for compliance along with other modifications

in the affected area. The AIWG agreed that a risk assessment is applicable for future ADs that include ICA/AWL content and, after review by the air carrier (during AD compliance planning), those ADs determined to have above-average risk may be included in the air carrier's AD sampling (re-verification) program.

The AIWG determined that each new AD should be evaluated for risk of future noncompliance using SMS principles as applicable in AC 120–92A, Safety Management Systems for Aviation Service Providers. An air carrier's valid risk assessment upon implementing each new AD should include crafting and implementing preventive measures to eliminate and/or reduce the severity and/or frequency of unintentional AD alteration. Further, practical risk management should include a program to ensure that potential hazards that could result from implementing a new AD are identified and controlled. A safety assurance program should be implemented by the air carrier to evaluate the continued effectiveness of control strategies, and there should be a program implemented that supports the identification of new potential hazards. One component of such AD risk management program is the AD sampling program.

To ensure continuing AD compliance, each air carrier should add these AD handling best practices into their AD management programs in a timely manner.

Outcome

The AIWG's implementation actions successfully address the AD CRT recommendations for maintaining AD configurations through the FAA's issuance of AC 39–9, Airworthiness Directives Management Process. The AC includes guidance on ICA, changes to manuals, AD-referenced service instructions that have already been accomplished, determining the need for training and specific skills, AD sampling (including the use of CASS) and AD verification, and the use of SMS principles in AD risk assessments for future noncompliance.

In addition, draft AC 20–xxx, Chapter 6, Maintaining Airworthiness, section 6–6, Flagging procedures provides guidance to DAH on placing notifications in air carriers' manuals (AMM, CMM, and work cards) that are only visible to the DAH to identify data directly related to an AD. These flagging procedures prevent inadvertent modification of AD-related data by the DAHs.

C2.8 Prototype ADs, Work Done Prior to AD

Task

Each air carrier should develop processes and procedures to—

- Prototype ADs before accomplishment.
- Ensure that when incorporating an SB anticipated to become an AD that the physical condition of prior work is reviewed when the AD is issued.

(AD CRT task 1 report, recommendation No. 3, bullet Nos. 1 and 4)

Review of Issue/Problem

There is no standard process for air carriers to prototype AD documentation. During accomplishment of AD mandated work instructions, questions can arise due to errors in service instructions, differing air carrier processes, obsolescence of parts, and other challenges. This can lead to misinterpretation of the AD requirements, inconsistent accomplishments, and deviation from the original intent of the mandated instructions. By accomplishing a prototype of the AD compliance documentation, these issues can be identified and resolved before accomplishing the instruction on multiple aircraft.

When service instructions that become mandated are accomplished before there is an AD, there needs to be verification that the work accomplished meets the AD requirements. Air carriers have processes for substitution of materials and alternate processes that could have been used that may not be acceptable for compliance with the AD. Without reviewing what was accomplished previously, it cannot be determined that the work accomplished meets the requirements of the mandate.

During accomplishment of AD-mandated work instructions, questions can arise due to errors in service instructions, differing air carrier processes, obsolete parts, and other challenges. This can lead to misinterpretation of the AD requirements, inconsistent accomplishments, and deviation from the original intent of the mandated instructions. By accomplishing a prototype of the AD compliance documentation, these issues can be identified and resolved before accomplishing the instructions on multiple aircraft. This prototype refers to an actual prototype of the air carrier's AD implementation document.

Implementation

The AIWG noted the prototype of the AD compliance determination is performed outside of the ATA Specification 111 service instruction prototyping process because that prototyping may not capture all of the specific issues, concerns, or configurations that an air carrier may experience.

The AIWG's implementation plan assumed the air carrier has an organizational structure that supports a prototype process and reviews of compliance documentation. The AIWG developed industry best practices that incorporated language to identify an AD management process and prototyping air carrier AD implementation documentation. The document also incorporated text that provides best practices in handling service instructions that are accomplished before the existence of an AD. The FAA incorporated the suggested language into a new FAA AC on AD management process.

Outcome

The AIWG's implementation actions successfully address the AD CRT recommendations through the FAA's issuance of AC 39–9, Airworthiness Directives Management Process which addresses air carrier prototyping of ADs to include silent prototyping (appendix 4) and operator actions accomplished before the release of an AD (appendix 1).

C3.0 CONCLUSION

The AIWG successfully addressed each recommendation assigned by the AD ARC. The implementation actions discussed above provide processes, procedures, and best practices for implementing and maintaining AD compliance. The improvements for implementing ADs and maintaining AD compliance for air carriers/operators are as follows:

- Established guidance in AC 39–9, Airworthiness Directives Management Process, Appendix 3, Air Carrier Training, for operators to provide a basic AD compliance training course that establishes an awareness of the AD processes and why it is essential to properly perform the work required by an AD and to maintain those requirements and the development of skill-specific training such as NDT and EWIS.
- Developed industry best practices for operators to follow in response to ADs including providing guidance on the AD management process to include six basic elements: planning, support, provisioning, implementing, recording, and auditing. See AC 39–9.
- Expanded the use of global AMOCs through shared implementation among DAHs, FAA, and operators to review all AMOCs as potential candidates for issuance as global AMOCs and share the AMOC approval response.
- Established posting of global AMOCs on DAH's Web sites.
- Developed practices for CMO/FSDO participation during the air carrier's AD compliance planning process and AD prototyping.
- Established guidance for the CMO/FSDO role in the AMOC approval process in FAA Order 8900.1 and AC 39–9.
- Provided guidance in AC 39–9 Change 1 on operator's establishing a conflict resolution process on AD compliance issues with its local FAA office.
- Provided guidance in AC 20–xxx for DAHs to develop a 24/7 support process to help prevent aircraft groundings due to potential AD noncompliance.
- Addressed best practices for maintaining AD configurations through AC 39–9 to include—
    - Ensuring AD design changes are incorporated in ICA;
    - Adding AD requirements to manuals;
    - Addressing AD-referenced service instructions that have already been accomplished;
    - Determining the need for training and specific skills;
    - Conducting AD sampling (including the use of CASS) and AD verification;
    - Conducting AD prototyping (including silent prototyping); and
    - Using SMS principles in AD risk assessments for future noncompliance.

APPENDIX D—FAA ORGANIZATION/PROCEDURES WORKING GROUP

D1.0 INTRODUCTION

The AD ARC formed the FPWG to address AD CRT and IRT recommendations related to AD compliance issues. The FPWG's key objective is to define decisionmaking processes for compliance versus noncompliance that can be used by the FAA and aviation industry in any situation.

The FPWG is comprised of 19 members representing AFS, AIR, FAA Regional Counsel, U.S. air carriers, U.S. and foreign airplane manufacturers, and repair stations. The FPWG held monthly meetings and teleconferences to evaluate and develop implementation actions for its assigned recommendations. The FPWG support staff tracked its progress using project plates that contained the assigned recommendation, the expected outcome/deliverables, and individual milestone tasks. The FPWG lead provided status updates to the AD ARC members at the ARC meetings noting if the working group would meet its schedule to complete its review and analysis of the assigned recommendations or had encountered difficulties.

The FPWG and its support staff also served as the focal for coordinating the update and/or development of any FAA policy and guidance developed by the AD ARC working groups as part of an implementation action, and steering any policy and/or guidance through the FAA approval and publication process.

D2.0 ASSIGNED TASKS

The AD ARC assigned the FPWG the following 27 recommendations from the AD CRT and IRT reports (includes primary recommendations and associated sub-issues) to evaluate and analyze:

- Develop decisionmaking process for determining compliance versus noncompliance;
- Reemphasize to ASIs that they have the authority to use professional judgment to determine whether noncompliance exists;
- Develop a decision tool when making compliance determinations;
- Streamline and improve the process for making compliance determinations;
- Eliminate single-person decisionmaking;
- Clarify the roles and responsibilities of AFS, AIR, manufacturers, and the air carrier in the compliance decisionmaking process;
- Ensure that AEG personnel are included in the AMOC process
- Develop an escalation process to raise ASI concerns on compliance determinations;

- Define and strengthen the communication process flow;
- Strengthen the role of the AEG;
- Revise the ATOS guidance material for ASIs;
- Establish a formal policy on how to handle issues where compliance is unclear;
- Ensure FAA field offices have a direct link to the AEG;
- Charter a working group to strengthen the AMOC process;
- Communication channels—AMOC process;
- Simultaneous coordination of an AMOC with the ACO and the CMO;
- ACO expeditiously receives concurrence from AEG on the AMOC, and AEG advises CMO;
- Delegation of AMOCs to designated engineering representatives (DER) and authorized representatives (AR);
- Delegation of AMOCs to other ACOs;
- Staff availability on a 24/7 basis (ACO, AEG, and CMO);
- ASIs should not be required or expected to conduct any type of risk-assessment before taking action on AD noncompliance;
- Develop further guidance and training to assist FAA in determining noncompliance;
- Develop a formal policy regarding ASI decisionmaking;
- Develop a decisionmaking flowchart as a guide for ASIs making compliance determinations;
- Review §§ 39.7 and 39.9, and, if necessary, revise those sections to clarify that AD compliance;
- The FAA should retain the right to ground any airplane not in compliance with an applicable AD. ASIs should not be required/expected to conduct any type of risk-assessment before taking action AD noncompliance; and
- The FAA's role in AD compliance planning.

The FPWG documented its evaluation of each recommendation and the implementation action in a summary sheet report. The FPWG addressed the 27 recommendations in 5 summary sheets by combining recommendations where possible. The complete unedited working papers that document the AD ARC's working groups' review, analysis, and decisions are available for viewing and download from the ARC Web site at http://www.faa.gov/aircraft/air_cert/continued_operation/ad/ad_arc/. Each assigned task, its implementation action, and outcome are excerpted from the FPWG summary sheets and presented below.

D2.1 AD Compliance Planning

Task

The FAA should provide timely information about new AD requirements, in advance of compliance dates, to all relevant FAA field offices. Those offices should then be responsive to any carrier that requests assistance in the form of *progress-towards-compliance* audits or reviews, in advance of the AD compliance dates. The FAA should revise its workload management systems (including ATOS), so that it can accommodate such requests.

The IRT believes that this particular form of collaboration should benefit the air carriers and the FAA, while protecting the traveling public by reducing the chances of major disruptions.

(IRT report, recommendation No. 2)

Review of Issue/Problem

In collaboration with the FAA and the ATA, a policy needs to be established regarding AD compliance. Also, identify the elements of an effective AD compliance process that exist in air carrier manuals and FAA guidance.

Based on the IRT's recommendation No. 2, the FPWG analyzed existing documents and determined that the elements of AD management are poorly defined. The FPWG determined to develop policy and guidance outlining the basic elements of an effective AD management process. An air carrier could then create its own AD management program based on these basic elements.

The six basic elements of an AD management process should consist of—

(1) Planning: Review applicable documentation needed to implement an AD.

(2) Support: Analyze and determine what logistical and personnel support is needed to implement an AD.

(3) Provisioning: Ensure that the materials specified in the AD and/or AMOC are available at the scheduled time for AD accomplishment.

(4) Implementing: Finalize and execute the actions involved in the Planning, Support, and Provisioning elements.

(5) Recording: Record and archive documentation used in the AD management process.

(6) Auditing: Provide a comprehensive method to continually verify and validate AD compliance.

Implementation

The FPWG determined that progress toward compliance identified by the IRT would be best resolved by coordinating with the AIWG to develop a new AC. The AIWG provided the elements of an AD process and expanded on an air carrier's specific process, which were incorporated in the appendixes of the AC. This collaboration ensured the links to both AIWG and FPWG recommendations were addressed. AIWG and FPWG implementation proposals will establish the policy, guidance, and procedures to use in the AD management process. In addition, the FAA's policy on effective AD management will made publically available through an AC on AD management.

Based on the IRT's recommendation, the FPWG developed the following policy and guidance regarding the AD management process:

(1) FAA Order 8900.1, a new chapter titled AD Management Process.

(2) AC 39–9, Airworthiness Directives Management Process, published on June 1, 2011

(3) NOTE: Both the new chapter for FAA Order 8900.1 and AC 39–9 address the six elements of an AD management process listed in Review of Issue/Problem above.

(4) AC 120–79A, Developing and Implementing an Air Carrier Continuing Analysis and Surveillance System: Revision for the AD management process.

(5) AC 120–16E, Air Carrier Maintenance Programs: Revision for the AD management process.

(6) NOTE: Updates for AC 120–79A and AC 120–16E were secondary actions contingent upon the publication of AC 39–9 and were not scheduled to meet the June 30, 2011, deadline.

AFS National Field Office for Air Transportation Oversight System (ATOS), AFS–900, incorporated the new AD management process into the items below.

- Air Transportation Oversight System, Data Collection Tools 1.3.6, Airworthiness Directive Management.

The FAA revised the two training courses identified below to address AD ARC recommendations and are expected to be completed by July 2011:

- Training Course 25704, Foundation for Principal Inspectors.
- Department of Transportation's eLMS for AD Training Course No. 2710009.

Outcome

The FPWG's implementation action successfully addresses the IRT's recommendation on operator assistance with progress toward compliance before AD compliance due dates with the issuance of new AC 39–9; a new chapter in FAA Order 8900.1, on the AD Management Process; new and updated training courses; updated DCTs; and revisions to AD management process in AC 120–79A and AC 120–16E.

In addition, the FPWG noted the IRT assumed that the FAA does not provide timely information regarding ADs. However, the FPWG believes this is an incorrect assumption because ADs are posted in the Federal Register as an NPRM and as a final rule. The documents are readily available from the Federal Register and from the Regulatory Guidance Library via the following links:

- http://www.gpo.gov/fdsys/browse/collection.action?collectionCode=FR
- http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAD.nsf/Frameset?OpenPage

Both Web sites provide a notification service, which will generate an email notification. Any individual may receive notification by make and model regarding an aircraft engine or product.

D2.2 AEG Roles and Responsibilities

Task

Primary

Strengthen the role of the AEG in developing and implementing ADs. Ensure ASIs know that the AEG is a resource for reviewing the air carrier's AD installation instructions and that the AEG acts as the liaison between the CMOs and the ACO on AD implementation issues. When questions arise, make the AEG part of these processes to make compliance with the AD as seamless as possible. This approach will help to prevent future disagreements between the FAA and the air carrier.

(AD CRT task 2 report, recommendation No. 2)

Secondary

Recommendation No. 1—Compliance Versus Noncompliance Decisionmaking Process

The FAA should review the AMOC process for enhancements and to ensure AEG personnel are included in the process.

(AD CRT task 1 report, recommendation No. 1, bullet No. 7)

- The FAA should establish a formal notification and coordination policy on how to handle issues where compliance is unclear. The policy should clearly delineate the AEG's role in assisting with noncompliance determinations, specify who has decision authority, and provide guidelines for elevating issues of disagreement for resolution (see recommendation No. 8 below). Such a policy will enhance overall coordination efforts and help the AEG to better coordinate with the ACO.

- The FAA should consider an organizational and procedural change to ensure FAA field offices have a direct link to the AEG. This will help the CMOs obtain technical advice on ADs and all issues concerning certificate management.

(AD CRT task 2 report, recommendation No. 7, bullets No. 1 and 2)

Under all circumstances, FAA technical personnel must be consistent in reviewing, approving, and applying the processes under their responsibility. If there are concerns regarding outside undue influence, the affected party must seek guidance from organizations having the appropriate level of ability and authority to provide the guidance required to address the concerns. FAA policymakers must ensure individuals responsible for the control of the AMOC processes are fully aware of the scope of their responsibilities. They should also be aware of the available recourse for appropriate management guidance where required. Educating these individuals will help ensure proper and prompt technical resolution of problems. Specifically, the Team recommends the following:

- The FAA, in coordination with industry, should charter a working group to review and develop a means to strengthen the AMOC process. The group's charter should include a review of the following:
  - Communication channels.
  - Simultaneous coordination of an AMOC with the ACO and the CMO.
  - Concurrence (that is, ACO expeditiously receives concurrence from AEG on the AMOC, and AEG advises CMO).
  - Staff availability on a 24/7 basis (ACO, AEG, and CMO).

(AD CRT task 2 report, recommendation No. 8, bullet No. 1, sub-bullet Nos. 1, 2, 3, and 6)

The FAA should provide timely information about new AD requirements, in advance of compliance dates, to all relevant FAA field offices. Those offices should then be responsive to any carrier that requests assistance in the form of *progress-towards-compliance* audits or reviews, in advance of the AD compliance dates.

(IRT report, recommendation 4.2)

Review of Issue/Problem

The AEG is the AFS organization responsible for determining the operational suitability of newly certificated and modified aircraft. The AEG plays a critical role in pilot qualifications, flight crew training, minimum equipment lists, acceptance and approval of ICAs for all aircraft, engine and propeller certifications, and other continuing airworthiness requirements. The AEG is instrumental in—

- Reviewing and determining the operational suitability of ADs by providing consultation and
- Assisting AIR project managers who develop ADs.

The focus area is on the AEG's active participation in the AD process. The ACO determines if the AEG participates during the development of the subject AD. The AEG provides technical expertise to the ASIs when needed for ADs through technical consultation to CHDOs and CMOs. The AEG also serves as liaison with ACOs, DAHs, CMOs, and CHDOs to distribute and answer questions on service instructions and maintenance alerts.

Although one of the AEG functions is to support the CMO on ADs, ASIs apparently did not recognize the AEG as a resource when AD compliance is in question. The FPWG created the ASI decision tool to emphasize the AEG's involvement in compliance determinations. In addition to communication with the ACO, the AEG should act as a liaison between the ACO, ECO, and CMO on implementing ADs. The FPWG agreed with the AD CRT that emphasis on the roles and responsibilities of the AEG needs to be added in policy and guidance.

The FPWG noted it agreed with all the AD CRT recommendations with the exception of an AEG organizational change. In considering the AD CRT recommendation for an organizational and procedural change, the FPWG reviewed an internal FAA report on the AEG, as well as the AD CRT task 2 report, recommendation No. 7, and disagree that an organization change is needed. The FPWG believed the following items will address the areas where communication failed:

- Clarify existing procedures in guidance.
- Create new guidance.
- Develop new training regarding AEG roles and responsibilities.

The policy/guidance and training proposed by FPWG clearly delineates the AEG's earlier involvement and assigned responsibility as a liaison and technical expertise to support operational suitability, evaluation, certification, implementation, and continued operation and maintenance of the aircraft. This guidance will also assist the PI and CHDO with noncompliance determinations as well as provide guidelines for elevating issues of resolution disagreements to upper FAA management.

The FPWG further determined that an outreach process is needed to facilitate AEG communication with ASIs in the field regarding complex aircraft/fleet issues to include ADs. The AEG's role is essential for communication and collaboration among the ASI, ACO, and certificate holders in crises involving compliance issues.

In analyzing the AD CRT's secondary recommendations, the FPWG determined there were three major issues:

- Collaboration among key stakeholders,
- Communication among key stakeholders, and
- A standard AMOC process that FAA personnel could follow and one that would allow ASIs to consider their professional judgment when determining AD compliance.

After analyzing each issue, the FPWG determined new guidance would be needed in FAA Order 8900.1 that would identify the roles and responsibilities of the AEG as well as promote communication among AEG, ACO, and ASIs.

The FPWG also determined that additional guidance should be developed to address the processes regarding AD development, AMOC proposals, and 24/7 support requests. In addition, the guidance would also identify actions needed to promote collaboration, which would allow escalation of concerns.

Finally, to fully address the secondary recommendations, the FPWG determined that additional work instructions, formal training courses, and outreach would be needed to communicate to the FAA community the proposals outlined in this section.

However, in analyzing possible reorganization to promote improved communication, the FPWG determined the current organizational structure was adequate and deemed a staffing increase more appropriate. The FPWG's analysis of this issue included a review of the new ASI decisionmaking tool, which emphasizes the communication of FAA field offices with the AEG. (This tool is discussed in section D2.3 of this report.)

Implementation

To implement its proposals, the FPWG—

(1) Added a new section in FAA Order 8900.1 (vol. 3, ch. 59, sec. 2) incorporating AIR–ANM–029–W1, Transport Airplane Alternative Method of Compliance (AMOC) Letters, on how to process AMOC requests. This section refers to AIR–ANM–029–W1 and Order 8110.103A, which defines AMOCs to ADs. This guidance contains triggers that involve the AEGs, thus ensuring continued operational safety of an aircraft at the appropriate time.

(2) Added a new section in FAA Order 8900.1 (vol. 3, ch. 59, sec. 4) incorporating AIR–ANM–029–W2, Transport Airplane 24/7 Flight Standards AMOC Request Support Process, on how to process 24/7 support requests. Created a new section in FAA Order 8900.1 (vol. 3, ch. 59, sec. 3) that defines the 24/7 AMOC process,

which could help prevent the grounding of 10 or more aircraft. This guidance would contain triggers for AEG's involvement based on FAA Order 8110.103A, Alternative Methods of Compliance (AMOC) and requirements.

(3) Added a new chapter in FAA Order 8900.1, titled AEG Roles and Responsibilities, detailing AEG roles and responsibilities.

(4) Added a new chapter in FAA Order 8900.1, titled AEG Outreach, incorporating AEG outreach for ADs.

(5) Developed a new training course addressing AEG roles and responsibilities and their interfaces with the ACO, which included a Web-based and a formal academy course. The training program defines the communication protocol and elaborates on the responsibilities and positions of each group (for example, AEGs, ASEs, and ASIs).

(6) Developed new Web-based training course addressing the AMOC 24/7 process.

(7) Created a memo from AFS–1 that addresses the role of the AEG and directs reconnecting AEG's involvement regarding ADs. The memo ensured FAA field personnel understand that the AEG is a key resource for technical issues and continued operational safety and established lines of communication. AFS–1 issued the memo on March 29, 2009.

(8) Created a memo from AFS–1 addressing AEG staffing to support an increase. This memo was approved on March 3, 2010, and staffing has been increased.

(9) Briefed to the field the AMOC 24/7 Implementation Memo. The 24/7 process was implemented January 27, 2010, and field briefings were completed June 2010.

(10) Revised the AD Manual to incorporate AEG coordination specifically to include an AEG specialist's involvement earlier in the AD development process. The early involvement will help AEG determine when to activate an outreach program to a PI if appropriate.

(11) Conducted FAA field briefings on the AMOC 24/7 process. This was completed in June 2010.

(12) Submitted a draft update to FS 1100.1B, AFS Organizational Handbook for AFS–100 that clarifies AEG's position within AFS and its roles and responsibilities.

(13) Submitted a request for revision to FAA Order 1100.5C, which is outdated both for AFS and AIR, to be updated to match FS 1100.1B.

(14) Created a new chapter in FAA Order 8900.1, (vol. 3), titled ASI Decision Making.

Outcome

The FPWG's implementation actions successfully address the AD CRT's primary and secondary recommendations related to AEG roles and responsibilities during the AD process. The implementation actions regarding the AEG also address the

IRT's recommendation noted above. Notably, the FAA revised Order 8900.1 to include the final guidance on AEG roles and responsibilities, AEG outreach efforts for ADs, how to process AMOC requests and 24/7 urgent AMOC requests to include AEG involvement, and ASI decisionmaking. The FAA also revised the AD Manual to incorporate AEG coordination in the AD development process.

The FPWG considered an organizational change as recommended by the AD CRT and determined that such a change is unnecessary. Instead, the FAA made the aforementioned guidance, communication, coordination, and process changes and increased AEG staffing levels.

D2.3 ASI Decisionmaking

Task

Primary Recommendation

The Team found that during the events precipitating this review, FAA administration of the AMOC process was reported to be inconsistent and sound technical judgment did not always govern decisions.

- "The Independent Review Team made a recommendation that inspectors should not be required or expected to conduct any type of risk-assessment before taking action on AD noncompliance." The Team agreed with this finding as supporting the necessary enforcement needed once an airplane has been determined to be noncompliant. However, the Team developed a supplemental process to help the ASI first coordinate a valid determination of compliance in cases where the condition is not obvious. The Team recommends that the FAA:
    - Develop further guidance and training to assist FAA staff in correctly determining noncompliance.
    - Develop a formal policy regarding ASI decision-making. The policy should emphasize the technical authority of the ACO and the FAA's position on the authority of ASIs to use professional judgment when determining compliance. To eliminate single-person determinations, the policy should address any conflicts that arise on an AD or AMOC by requiring the CMO to elevate its concerns first to the AEG for resolution. The team addressed the concern of using professional judgment and avoiding single person determinations in the ASI Decision making procedures.

  (AD CRT task 2 report, recommendation No. 8, bullet No. 2)

- The FAA should develop a decision-making flowchart as a guide for ASIs making compliance determinations. The following ASI decision flowchart is provided to demonstrate the notion the Team wishes to convey. *(See Appendix C of the AD CRT Task 2 Report for the flowchart.)*

  (AD CRT task 2 report, recommendation No. 8, bullet No. 3)

Secondary Recommendation

Based on the findings in appendix A of this report, the Team developed the following recommendations, which it categorized by process areas. Because a number of the recommendations cover multiple findings, the Team is presenting its findings separately. See appendix D for a cross-reference of the recommendations to the specific findings in this report. The Team will investigate a number of the recommendations during task 2.

Recommendation No. 1—Compliance Versus Noncompliance Decisionmaking Process

The FAA should—

- Develop a more objective, deliberative decisionmaking process for determining compliance versus noncompliance that can be used in any situation.
- Reemphasize to ASIs that they have the authority to use professional judgment to determine whether noncompliance exists.
- Develop a decision tool for use by ASIs to assist in using professional judgment when making compliance determinations.
- Streamline and improve the process for making compliance determinations and make it impervious to external influence.
- Eliminate single-person decisionmaking.
- Clarify the roles and responsibilities of the AFS, AIR, OEM, and air carrier in the compliance decisionmaking process.
- Develop a process to raise ASI concerns on compliance determinations to a higher level.
- Define and strengthen the communication process flow and make it impervious to external influence.

(AD CRT task 1 report, recommendation No. 1, bullets Nos. 1–6, 8, and 9)

The FAA should retain the right to ground any plane not in compliance with an applicable AD. Inspectors should not be required or expected to conduct any type of risk-assessment before taking action on AD noncompliance.

(IRT report, recommendation 4.1)

Review of Issue/Problem

Primary Recommendation

Without being required to conduct a risk assessment, FAA ASIs should rely on professional judgment as well as available resources to help determine AD compliance. The resources should include new policy, guidance, training, and a decisionmaking flowchart. The new decisionmaking policy should emphasize the authority and role of key stakeholders, such as ACOs, ASIs, CMOs, and DAHs.

The FPWG reviewed how ASIs could coordinate internally within the FAA and externally with operators to determine and/or validate AD compliance. Based on its analysis, the FPWG proposes to develop policies within FAA Order 8900.1 that would—

- Guide the ASI during the decisionmaking process regarding AD compliance.
- Include a decisionmaking logic flowchart, which shows that ASIs have the authority to determine if noncompliance exists. By following the flowchart, ASIs' decisionmaking logic would be guided by their work with regional personnel in the AEG and ACOs when determining AD compliance.
- Outline how an ASI should review an AMOC proposal to an AD.

Secondary Recommendation

The FAA should develop a standard process that helps an ASI determine, regardless of the situation, whether or not an aircraft complies with an AD. The standard process should address the following concerns:

- The role of the ASI: How can ASIs objectively determine an aircraft's compliance to an AD while still using their professional judgment, as defined in FAA Order 8900.1, (vol. 1, ch. 3, sec. 2).
- Collaboration: How do ASIs and other groups (such as ACOs, AEG, and operators) interact with each other to promote transparency, communication, and collaboration? How can a single person be prevented from determining AD noncompliance?
- Standardized Resources: What resources (that is, training, guidance, and tools) are available to help ASIs determine AD compliance?

The FPWG noted these new policies and procedures for the FAA community will take time for personnel to embrace, accept, and act upon. Also, the ACO and AEG workload is expected to increase because of the introduction of new guidance.

In addition, the FPWG noted the AD CRT recommended that training be developed to assist the ASIs in correctly determining noncompliance. This recommendation was based on the assumption that there was a lack of policy and guidance for ASIs in determining AD noncompliance. The FPWG evaluated and determined current training is adequate. Specifically, the foundation for PI's Training Course No. 25704, which is open to all ASIs, provides adequate training in determining compliance. The FPWG determined that this course should be mandatory for all part 121/135 airworthiness ASIs with operators having 10 or more aircraft, which should be completed by the end of FY 2012.

Implementation

The FPWG created new policy that provides standardized guidance to ASIs when determining if an aircraft complies with an AD and how that determination may apply to other aircraft in a fleet. The new policy outlines the processes to solve difficult issues and eliminate single-person determinations.

The FPWG implemented the following actions to address the AD CRT's primary and secondary recommendations:

(1) Mandated all part 121/135 airworthiness ASIs with operators having 10 or more aircraft complete Training Course No. 25704, Foundation for Principal Inspectors which addresses ASI decision making and the RMP.

(2) Created new guidance in FAA Order 8900.1, as discussed in this section. The guidance consists of the following:

a. FAA Order 8900.1, (vol. 3), A new chapter 60 titled ASI Decision Making that—

- Provides guidance to ASIs for addressing situations in which the compliance of an aircraft is in question.
- Provides guidance on how and when to determine coordination with AEG and ACO.
- Includes a logic flowchart that provides systematic procedures that can be followed to eliminate single-person determination and to elevate concerns regarding AD compliance.
- Re-emphasizes the RMP that provides ASIs with procedures on how to manage hazards and their associate risks

(see FAA Order 8900.1, (vol. 10, ch. 3)).

b. FAA Order 8900.1, (vol. 3). A new section provides guidance to ASIs regarding their role in the AMOC process.

(3) Based on the above changes, AFS–900 revised the following ATOS DCTs to correlate with FAA Order 8900.1:

- DCT Element 1.3.1, Maintenance Program;
- DCT Element 1.3.3, Maintenance Facility/Main Maintenance Base;

- DCT Element 1.3.4, Required Inspection Items;
- DCT Element 1.3.6, Airworthiness Directive Management; and
- DCT Element 2.1.1. Manual Currency.

Outcome

The FPWG's implementation actions successfully address the AD CRT's primary and secondary recommendations related to ASI decisionmaking by creating standardized guidance to coordinate difficult AD compliance decisions with all stakeholders and eliminate single person decisionmaking and to assist with processing AMOCs. The implementation actions also address the IRT's recommendation by providing ASIs with procedures on how to manage hazards and their associate risks.

D2.4 Delegation

Task

- Further delegation to designated engineering representatives (DER) and authorized representatives (AR), to include AMOCs that address issues in the systems and equipment, payloads, and airplane performance areas.
- Delegation of AMOCs to other ACOs.

  (AD CRT task 2 report, recommendation No. 8, bullet No. 1, sub-bullets 4 and 5)

Review of Issue/Problem

The FPWG noted a chartered team within the FAA thoroughly studied further delegation to DERs and ARs before the AD ARC was formed. This FAA internal team's final report recommendation is that, while there is some theoretical opportunity for further delegation to DERs/ARs for systems and equipment, payloads, and airplane performance AMOCs, the data[51] indicate there were few projects where expanded delegation could have been applied during the FAA internal team's 6-month study. At the same time, the FAA internal team identified certain types of structural AMOCs that can be delegated. The FPWG Delegation Subteam reviewed the FAA internal team's report and, based largely on the information it conveys, agreed to the following:

Expand AMOC delegation to allow two additional types of structural single-airplane AMOCs to DAH designees:

- The approval of an alternate inspection method, thresholds, or intervals where a new repair or modification results in the inability to accomplish the existing AD-mandated inspection or necessitates a change in the existing AD-inspection threshold. The standard for these approvals is § 25.571, amendment 45 or later.

[51] Data studied represented transport airplanes and air carriers that use these products due to the focus of the AD ARC activity. However, all policy changes which expand delegation will be applicable to other products as well and not limited to transport airplanes. Additionally any US TC holder/ODA could be granted AMOC approval authority.

- The approval of AMOC structural deviations to structural designees for ADs issued by any ACO branch (including Cabin Safety and Systems and Propulsion), using the existing structural delegation limitations. To do this, future ADs could utilize a delegation statement identical to those statements in many structural ADs that is, AD 2010–05–04, paragraph (h)(3). Two examples of this would be deviations to a structural repair to a thrust reverser AD issued by the Propulsion Branch or structural deviation that occur during a modification required by an AD issued by the Cabin Safety Branch.

The FPWG Delegation Subteam studied the delegation of AMOCs to other ACOs within the context of the AD ARC activity. The Delegation Subteam carefully balanced the need for further delegation of AMOCs as compared to the need for consistency and standardization of results. Currently, the subteam does not recommend delegation of AMOCs from issuing ACOs to other ACOs. The subteam found delegation of AMOCs to other ACOs is not an effective or efficient AMOC delegation strategy because other ACOs do not have the data or analysis related to the continued operational safety issue or the working familiarity with the airplane design. Further, such delegation is counter to the need for a standardized approach for issuing AMOCs for a given AD.

The FPWG also explored the possibility of delegating global AMOCs and determined that there may be procedures by which global AMOCs can be responsibly delegated.

Implementation

In many cases, the Delegation Subteam discovered that, while not explicitly addressed in existing guidance, the delegation of structural single-airplane AMOCs to DAH designees already occurs on a case-by-case basis. The Delegation Subteam considers that the update and distribution of the following FAA Orders provide sufficient guidance to facilitate widespread use of such delegation:

- FAA Order 8100.15, Organization Designation Authorization Procedures,
- FAA Order 8110.37D, Designated Engineering Representative (DER) Handbook, and
- FAA Order 8110.103, Alternative Methods of Compliance.

The FPWG proposed to develop processes to expand the delegation of approval of global AMOCs in the following areas:

- Correcting typographical errors in SBs to the issuing organizational designation authorization holder; and
- For the two additional types of structural single-airplane AMOCs discussed above.

Outcome

The FPWG's implementation action successfully addresses the AD CRT recommendation through the FAA update and distribution of guidance to facilitate widespread delegation of structural single-airplane AMOCs to DAH designees in Order 8100.15A, Order 8110.37E, and Order 8110.103A CHG 1.

The FPWG agreed with the FAA internal team finding that expanded delegation for AMOCs for systems and equipment, payloads, and airplane performance areas is unnecessary at this time because of its limited value. In addition, the FPWG found that AMOC delegation to other ACOs is ineffective and inefficient because other ACOs do not have the required data or analysis or are unfamiliar with the airplane design. In addition, AMOC delegation to other ACOs would create inconsistencies among AMOCs issued for a given AD.

Order 8100.15A, Order 8110.37E, and Order 8110.103A CHG 1 include expanded delegation authority for certain global AMOCs to DAH designees.

D2.5 Part 39

Task

> The FAA should review §§ 39.7 and 39.9, and, if necessary, revise those sections to clarify that AD compliance is an action required of the operator; it is not necessarily determined by a strict comparison of the aircraft to AD-specified configurations.
>
> (AD CRT task 2 report, recommendation No. 12)

Review of Issue/Problem

Section 39.7 states "[a]nyone who operates a product that does not meet the requirements of an applicable airworthiness directive is in violation of this section." This language mandates both action by the operator and continued compliance with the AD requirements (for example, "configuration").

Section 39.9 does not impose requirements; rather, it is an explanatory section that emphasizes the impact of noncompliance. It was added to the final rule because of comments that the proposed version combined compliance and noncompliance issues in one heading (proposed § 39.5, final version is § 39.7). The final rule stated that the agency added § 39.9 "to refer to § 39.7, which is the rule that operators will violate if they fail to operate or use a product without complying with an AD that applies to that product."

The FPWG noted the AD CRT recommendation seems to be based on the change of words in the regulations to accommodate the FAA's directive to write rules using "plain language". These changes unfortunately, have created more confusion rather than making the regulations more clear.

However, the FAA has the authority to provide reasonable interpretations of its rules. In this case, the FAA indicated in the NPRM and specifically stated in the Final Rule that the rewording of part 39 did not introduce any new regulatory requirement. There was no change in the FAA's legal authority or general interpretation that once an AD is applied to a product, it must be operated in conformity to that AD on every flight.

The recommendation may also have been precipitated by instances where the operator believed it was in compliance with an AD, but were subjected to extreme scrutiny with respect to minor deviations from the specific instructions in the service instructions incorporated by reference in the AD.

Rewriting of Part 39 in Plain Language

FPWG members expressed opinions regarding the verb usage and tense in the current plain language version of part 39. The sections that are particularly troublesome are presented below, with the "old" version (where applicable) in italics.

> (1) Section 39.11. What actions do airworthiness directives require? Airworthiness directives specify inspections you must carry out, conditions and limitations you must comply with, and any actions you must take to resolve an unsafe condition.
>
> *Section 39.11 Applicability. This subpart identifies those products in which the Administrator has found an unsafe condition as described in Sec. 39.1 and, as appropriate, prescribes inspections and the conditions and limitations, if any, under which those products may continue to be operated.*

The opinion was expressed that a reasonable interpretation of the language directing action to "resolve an unsafe condition", limited the FAA from requiring actions that did not relate to correcting the identified unsafe condition. In other words, that an AD is limited to those tasks that resolve the unsafe condition, whether the tasks are explicitly listed in the AD or part of a referenced SB.

The opinion was expressed that this section is merely descriptive of the types of actions required by ADs; it neither imposes obligations on the operator nor limits the FAA's authority in issuing ADs.

> (2) Section 39.9. What if I operate an aircraft or use a product that does not meet the requirements of an airworthiness directive? If the requirements of an airworthiness directive have not been met, you violate § 39.7 each time you operate the aircraft or use the product.

The FPWG held extensive discussions around the use of plain language.

The minority position was that the use of the words "have not been met" indicated that "if" the unsafe condition was indeed fixed at a moment in time, this section of the regulations did not apply. In other words, if the AD was at one time complied with as

required by § 39.11, this section could not be applicable. The conclusion of the position was this regulation pointed to a specific moment in time, that is, once the unsafe condition was corrected, the regulation no longer applied, even if the product was later determined to be contrary to the requirements of the AD. If the product was operated "out of configuration", § 43.13(b) would be violated, not section § 39.7.

The opposing majority position is that language of § 39.7 (as well as its earlier version, § 39.3) imposes an operational mandate that the requirements of the AD be maintained for each operation occurring after the actions required by the AD are accomplished. It was pointed out that this legal effect was recognized by the AD CRT in its finding and recommendation No. 11. Section 39.7 stresses that for continuing operations of products that do not comply with ADs, each flight is a separate violation. The emphasis on verb tense is misplaced; if a product once complied, but for whatever reason no longer complies, the requirements of the AD "have not been met" when the product is operated.

> (3) Section 39.7. What is the legal effect of failing to comply with an airworthiness directive? Anyone who operates a product that does not meet the requirements of an applicable airworthiness directive is in violation of this section.
>
> *Section 39.3 General. No person may operate a product to which an airworthiness directive applies except in accordance with the requirements of that airworthiness directive.*

The FPWG concluded the language in both the old and new version indicates that the product must comply with the AD whenever it is operated or a violation will result.

Difficulty of Determining Compliance

FPWG members representing industry expressed frustration over the extraordinary scrutiny regarding "compliance" with material in service instructions (incorporated by reference in ADs) that did not have direct relevance to correcting the unsafe condition. Examples ranged from typographical errors to providing incorrect methods for obtaining access to an area that needed inspection. It was noted that operators' deviations from referenced service instructions have resulted in failure to correct the unsafe condition(s). The determination of whether a particular action described in the referenced service information is required must be based upon the specific action required by the AD.

An opinion was expressed that if the method of compliance contained information that was not necessary to correct the unsafe condition, the FAA may be promulgating a rule that is beyond the stated purpose of part 39. While § 39.11 describes the content of ADs, it does not limit the FAA's general rulemaking authority, as defined in Title 49 of the United States Code § 44701. The FPWG urged the FAA to consider the implication of operators having to obtain AMOCs for such unintended matters, particularly the burden on the operators, AIR, FAA designees, and the FAA ASIs responsible for oversight.

The FPWG believed that while better written service instructions may eventually solve the issue of having to obtain an AMOC for typographical and other errors, there is an immediate need to quickly determine whether the operator can follow the AD's means of compliance. If there was an ability to determine that the method contemplated or used was "in accordance with" the AD's means of compliance, it might reduce the number of AMOCs and reduce the fear of finding noncompliance over unintended matters. The FPWG developed a means of compliance process for FAA consideration.

The FPWG noted that some key issues regarding determining compliance have been tasked to other working groups, namely, the development of better service information and ADs as well as processes for compliance planning.

The FPWG also noted the need to understand exactly what is required by the AD versus the information that is contained in a referenced service document. Often, there is information contained in a referenced service document that is not required by the AD, however, in some cases, the industry and the FAA are finding it difficult to distinguish those items sufficiently.

Design Changes In Production Aircraft Versus In-Service Aircraft

The FPWG discussed the difference in regulatory treatment between an aircraft that has had design changes incorporated during production and an aircraft that has been modified in accordance with an AD to incorporate the identical design change.

In the first instance, an air carrier's maintenance program manages any deviations from the configuration as well as the continued airworthiness (maintenance) of that change under § 43.13, while in the latter instance, deviations must be handled through the AMOC process.

An AD is a rule that is published as a stand-alone requirement that changes the approved design of aviation products and appliances. For example, if an AD requires the removal and replacement or alteration of an article, the previous article's configuration is no longer eligible for installation, that is, if it were installed, the product or appliance would no longer meet an approved design. Similarly, if an AD required an inspection at specified intervals, missing an interval would render the aircraft noncompliant because it would not be in a condition for safe operation, that is, the inspection is required to determine that it remains in a safe condition. The AD-required inspection has the same legal effect as an airworthiness limitation approved as part of the aircraft's type design.

When an aircraft (or other product) is released from a production approval holder's quality system, it must conform to its approved design and be in a condition for safe operation (see § 21.165(b) and revised § 21.146(c)). This would include any type design changes whether initiated voluntarily by the DAH or required by the FAA (see §§ 21.95, 21.97, and 21.99).

All maintenance and alteration activities must be accomplished under part 43. Section 43.13 requires maintenance to be performed in accordance with methods, techniques, and practices acceptable to the FAA (usually, the maintenance instructions or

ICAs from the design/production approval holder) and the work performed must return the article (aircraft) to at least its original (or properly altered) condition. Therefore, to ensure compliance with either the original configuration of the production certificate holder or an AD mandated configuration, the operator must ensure its maintenance program is returning the aircraft to at least its original or properly altered (that is an airworthy) condition.

If the design or configuration of the production aircraft did not include an article prohibited by an AD (for example, the AD did not apply because the type design was changed and excluded the prohibited article), the original condition of the aircraft would not allow the prohibited article's installation during maintenance activities because it would not return the article to at least its original condition. Furthermore, the installation of a prohibited (unsafe) article could not be considered properly altered under part 43 because it would not meet its approved design.

The difficulty with these distinctions may be addressed by enhancing the use of § 21.50 relating to issuing and updating instructions for continued airworthiness. Whenever a major change to type design is introduced, especially one that is the basis for an AD, the DAH should ensure that mandatory configuration or inspection action is noted in revisions to maintenance documents.

Post-Modification Maintenance

There were discussions of whether the product or article could return to the operator's maintenance program (that is be maintained or altered under part 43) after a terminating action was accomplished.

Examples included:

- An AD provides the option of inspection every 1,000 flight hours or replacement as a terminating action. The operator terminates the inspection requirement by performing the replacement and returns to the original program of inspection every 2500 flight hours.
- An initial AD requires an inspection of an aircraft structural element every 2,500 flight hours and if cracking is found the operator must obtain an approved repair from the DAH; a superseding AD allows replacement as a terminating action. After the operator replaces the structural element, the inspection interval goes back to the original 5,000 hours and if abnormalities are found, they are repaired in accordance with the structural repair manual.
- The AD requires modification of a component to a fuel system, after the modification is accomplished, the subsequent maintenance and/or alteration actions are accomplished in accordance with the component maintenance manual at the intervals, or on condition, specified by the air carrier's maintenance program.

The examples were carefully vetted as "terminating" actions, in other words, the AD language specifically used the word "terminate", "terminating" or "terminated". In all these cases, the operating community members believed that the aircraft or component could be maintained normally (under part 43) after the unsafe condition was corrected. The FAA took varying positions depending upon the AD requirements.

To the operator community, the word "terminate" means end; it is difficult for operators to understand any other result. If the AD allows (or requires) replacement as a terminating action, the AD should be complete and no further action under the AD should ever be required. Other actions may be prohibited, for example, the prohibited configuration cannot be reintroduced. Unless there are specific follow-on requirements specified in the terminating action, for example, all repairs to this area must always be approved by the DAH, then terminating must mean end.

The FAA pointed out that the phrase "terminating action" is used in ADs to refer to actions that terminate repetitive actions or on-going requirements specified in other provisions of the AD, such as repetitive inspections or AFM limitations. It does not terminate the requirement for the operator to comply with § 39.7 by operating the aircraft in accordance with the AD-mandated configuration. Particularly in cases where the unsafe condition addressed by the AD is the result of normal maintenance that had previously been considered acceptable, such as many wiring ADs, a contrary result would allow reintroduction of the unsafe condition, including deviation from an element of the mandated configuration, which would be contrary to the intent of the AD and part 39. The FPWG found there is no need to revise part 39 to deal with this issue.

The FPWG developed recommendations for AD ARC consideration to resolve and/or avoid any misunderstandings regarding the legal effect of ADs and to address the industry concerns underlying recommendation No. 12.

- Develop a means to apply the work of the SIWG to existing ADs. The FPWG believes that once the SIWG identifies the methodology for ensuring service information clearly distinguishes between those actions that are critical and those for which operators should be provided flexibility, the same guidance could then be applied to existing AD-referenced SBs. This approach would be appropriate for ADs that operators consider overly prescriptive and would be adopted by mutual agreement of affected operators and DAHs. The affected operators and DAHs could work to revise troublesome SBs. These revised service instructions could then be approved as global AMOCs. See section A2.2 of this report for a discussion of the SIWG's solution to identify critical steps in new service instructions.
- Develop a Means of Compliance request form to help determine whether an AMOC is necessary for obvious typographical errors, missing or extra steps in a referenced process that make it impossible to complete without filling in or ignoring the steps, and other limited circumstances where referenced service information is erroneous.

- Develop the ability to post general descriptions of AMOCs, stating whether each contains proprietary information but without revealing that information, so that the public is aware of the existence and can efficiently seek copies of non-proprietary AMOCs and the FAA can eliminate some duplicative efforts. See section C2.3 of this report for the AIWG's discussion of posting certain AMOCs on DAH Web sites.
- Develop a legal opinion on the meaning of the questionable sections in part 39 so that the concerns expressed by the AD CRT are in the proper context. The concerns raised by the AD CRT involved the use of the plain language in the regulations as well as the perceived inability to place an aircraft back into a regular maintenance program once an AD was required. The FAA's position is that § 39.9 merely explains the legal effect of any operation of a product in violation of an AD; and § 39.7 is violated when an aircraft is operated "that does not meet" the requirements of an AD. Some industry representatives have taken the position that § 39.9 means that, once an action required by the AD has been taken, part 39 would no longer apply. Rather, any operations taken after the date that the AD action was accomplished would be subject to scrutiny under part 43 and the operating rules in parts 91, 121, 129, and 135 for failure to operate an aircraft in an airworthy condition. The FPWG found a formal legal interpretation from the FAA would resolve these issues. AFS–301 submitted a request to AGC–200 for a legal opinion on September 1, 2010. See appendix H for a copy of the request.
- To address the issues discussed under the headings, Design Changes In-Production Aircraft versus In-Service Aircraft and Maintenance after Terminating Action (Post-Modification Maintenance), the FAA should ensure that manufacturers develop and provide ICAs for all design changes mandated by an AD. It should also ensure that these ICAs are referenced in the service information describing the design change as acceptable maintenance procedures so its use does not require AMOC approval. In addition, the FAA should evaluate whether other methods, techniques, and practices that would normally be acceptable under an operator's maintenance program are acceptable for maintaining the AD-mandated configuration. If so, either the service information referenced in the AD or the AD itself should explicitly state this so that AMOC approval is not required. See a discussion of the SIWG and ADWG reviews of this issue under section A2.8 and section B2.2 of this report, respectively.

The FPWG contemplated requesting a change to part 39. However, after considerable discussion, the majority voted not to request a rule change. The dissenting working group member believes a rule change is necessary and the FPWG documented the dissenting position in Appendix F to the associated summary sheet report. If the supposition of recommendation No. 12 was not accepted by the committee, that AD compliance is an action required of the operator, it is not necessarily determined by a strict comparison of the aircraft to AD-specified configurations.

Implementation

Because the FPWG determined that a rule change is not necessary, it did not develop an implementation plan. However, to address the underlying concerns that led to the AD CRT's recommendation No. 12, the FPWG proposes the following recommendations be implemented through revisions to relevant FAA orders and ACs—

- FAA Order 8110.103 should clearly indicate when an AMOC is not required. If an ACO determines that a proposed AMOC is unnecessary, because the request identifies a method of compliance rather than an alternative method of compliance, it should deny the AMOC request.
- AC 39–7C should clearly indicate when compliance has been achieved and how to determine when steps in an SB are mandatory versus those that are recommendations of how to proceed to the mandatory actions. While the AC cannot provide detailed guidance for individual ADs, it should discuss the way ADs reference SBs and describe the ways in which ADs and SBs distinguish between required actions and guidance material as defined in the recommendations of the SIWG and ADWG.
- AC 120–16E should clearly indicate how the operator can distinguish between means of compliance activities, when an AMOC is or is not needed. This guidance should be consistent with FAA Order 8110.103.
- AC 120–79 should ensure that the information provided on AD compliance is the same as in the previously listed documents.
- FAA Order 8110.54 should indicate that when a design change has been required by an AD or is AD related, that the service information must clearly indicate the prohibited or required post-modification maintenance actions, or at least reference the AD, so that AMOCs are not required for acceptable actions.
- AD templates and instructions for their use should ensure that means of compliance are clearly defined so a determination of whether an AMOC is needed is concise and standardized.
- FAA–IR–M–8040.1—Re-instate the Airworthiness Directive Action Program Team (ADAPT) and Intra-Directorate Airworthiness Directive Program Team (IDAPT) procedures defined in FAA–IR–M–8040.1, sec. 9. Section 9 instituted communication avenues that have not been followed. The communication channels and exchange of information would allow the ADAPT team to monitor the AD process on a national basis and thereby fulfill the charter of the ADAPT and IDAPT procedures. Without all the representatives identified in section 9, the team is incomplete and contrary to establishing effective communications.

Note: AD CRT recommendations No. 1 and 11 are interrelated to recommendation No. 12; therefore, any actions taken based upon this recommendation should be coordinated with the SIWG (recommendation No. 1) and the AIWG (recommendation No. 11). When the implementation plans for those recommendations are finalized, then the suggestions made in this section need review.

DAHs and operators may be required to revise their procedures and manuals to implement the recommendations.

Outcome

The FPWG found success of its suggestions is largely dependent on DAH and operator implementation of AD CRT recommendation Nos. 1 and 11, respectively (see section A2.7 and section C2.7 of this report for the working groups' resolution of those recommendations). Success also depends on ACO and CMO awareness and oversight of regulatory requirements for all operators involved in the development and implementation of ADs.

For design changes in production aircraft versus in-service aircraft, the ADWG and SIWG evaluated this issue. In addition, the ADWG addressed post modification maintenance. See sections A2.7, A2.8, and B2.2 of this report.

Regarding the FPWG recommendation that FAA Order 8110.103 should clearly indicate when an AMOC is not required, the FAA noted the order currently defines typographical errors to be covered by AMOCs. In addition, an appendix will include two questions in the question and answer section on errors in service information or an AD. The question and answers will also advise that AMOCs to address errors or typographical errors should be issued as global AMOCs. The FAA also plans to identify metrics to capture the number of AMOCs that address errors/typos in ADs or service information to ensure quality issues are addressed. See section 3.3.2 of this report.

The FPWG suggested certain revisions to AC 39–7C, AC 120–16E, and AC 120–79. The FAA noted changes to these documents are secondary deliverables. The FAA plans to revise these documents as appropriate. See section 3.1.3 of this report.

The FPWG recommended FAA Order 8110.54 indicate that when a design change has been required by an AD or is AD related, that the service information must clearly indicate the prohibited or required post-modification maintenance actions, at least referencing the AD, so that AMOCs are not required for acceptable actions. However, because the SIWG could not resolve the post modification maintenance issue, the order does not require revision at this time. See section A2.7, A2.8, and B2.2 of this report.

Regarding the FPWG recommendation that AD templates and instructions for their use should ensure that means of compliance are clearly defined so that a determination of whether an AMOC is needed can be concise and standardized, the FAA determined that it will explain critical tasks required for compliance and their effect in each AD, such as the need for an AMOC. The FAA does not plan to change the AD template but may update other internal guidance material.

The FPWG recommended the FAA re-instate ADAPT and IDAPT procedures defined in section 9 of the FAA AD Manual. The FAA assessed the ADAPT/IDAPT charter and determined that those objectives are met through the standardization management team therefore ADAPT and IDAPT procedures will not be reinstated.

D3.0 CONCLUSION

The FPWG implemented the majority of the recommendations assigned by the AD ARC and explained its decision when it did not implement a recommendation or only partially implemented a recommendation. The implementation actions discussed above support the FAA and aviation industry decisionmaking process for determining AD compliance. The improvements for determining AD compliance are as follows:

- Developed policy and guidance regarding the AD management process in FAA Order 8900.1, a new chapter titled AD Management Process and AC 39–9, Airworthiness Directives Management Process, published on June 1, 2011, to include the six elements of an AD management process: planning, support, provisioning, implementing, recording, auditing.
- Incorporated the new AD management process into (1) FAA training courses (Training Course 25704, Foundation for Principal Inspectors and DOT's eLMS for AD Training Course No. 2710009) and (2) Air Transportation Oversight System, Data Collection Tools 1.3.6, Airworthiness Directive Management.
- Revised FAA Order 8900.1 to include the final guidance on AEG roles and responsibilities, AEG outreach efforts for ADs, and how to process AMOC requests and 24/7 urgent AMOC requests to include AEG involvement.
- Revised the AD Manual to incorporate AEG coordination in the AD development process.
- Increased AEG staffing to support AD and AMOC process improvements.
- Created new guidance in FAA Order 8900.1 on ASI decisionmaking to include a logic flowchart to eliminate single-person decisionmaking.
- Developed new guidance in FAA Order 8900.1 on the ASI's role in the AMOC process.
- Updated and distributed FAA guidance to facilitate widespread delegation of structural single airplane AMOCs and certain global AMOCs to DAH designees.
- Expanded delegation of structural single airplane AMOCs and certain global AMOCs to DAH designees in Order 8100.15A, Order 8110.37E, and Order 8110.103A CHG 1.

APPENDIX E—AD ARC WORKING GROUP MEMBERS AND AD ARC PROGRAM SUPPORT STAFF

AD DEVELOPMENT WORKING GROUP

Tim Dowling, *Co-lead*	The Boeing Company (Boeing)
Holly Thorson, *Co-lead*	FAA, TAD, Northwest Mountain Region (ANM)–114
Tammy Anderson	FAA, Seattle Aircraft Certification Office, ANM–120S
Barry Baker	Pinnacle Airlines
Eric Blancaneaux	Airbus
Elizabeth Bumann	FAA, AIR–113
Tim Dulin	FAA, TAD, International Branch, ANM–116
Craig Fabian	Aeronautical Repair Station Association
Douglas Gibson	Bombardier
Rafael Marques	Embraer
Oswaldo de Oliveira	Agência Nacional de Aviação Civil
Jim Orchard	FAA, AFS, Aircraft Evaluation Group–11
Nick Pearson	FAA, AFS, Air Carrier Maintenance Branch, AFS–330
Ross Stewart	ABX Air
Plamen Stoyanov	Alaska Airlines

Invited Subject Matter Experts/Observers

Marco Capaccio	European Aviation Safety Agency

AD IMPLEMENTATION WORKING GROUP

Larry Williams, *Lead*	United Airlines (United)
Craig Amadeo	Delta Air Lines (Delta)
Herman Bijl	Bombardier
Al Boring	Alaska Airlines
Elizabeth Bumann	FAA, AIR–113 (Alternate for Ken Filippelli)
Eduardo Cerdeira	Embraer (Alternate for Carlos Valadares)
Michele Dedic	United (Alternate for Larry Williams)
Greg DiLibero	FAA
Joe DiPalmo	AFS FSDO NY
Craig Fabian	Aeronautical Repair Station Association (ARSA)
Ken Filippelli	FAA, AIR–112
Rick Hardmeyer	American Airlines
Bill Heliker	FAA, Seattle (SEA)–AEG
W. Kawehi Lum	FAA, Honolulu Flight Standards District Office
Russ Reed	AirTran Airways

Paul Sesny	Boeing Company (Boeing)
Adam Troeger	American Eagle
Bill Tsai	Boeing
Carlos Valadares	Embraer
Bill Williams	Federal Express (FedEx)

FAA Organization/Procedures Working Group

Steve Douglas, *Lead*	FAA, AFS–301
Doug Anderson	FAA, ANM–7
Steve Edgar	FAA, TAD
Steve Fox	FAA, ANM–120S
Chuck Heald	Boeing
Tim Holt	FAA, AFS–330
Keith Johnston	Learjet
Steve Jones	American Airlines
Ken Kerzner	FAA, AFS–330
W. Kawehi Lum	FAA, Honolulu Flight Standards District Office
Sarah MacLeod	Aeronautical Repair Station Association (ARSA)
Tom Newcombe	FAA, SEA–AEG
Lynn Pierce	FAA, SEA–AEG
Rob Romero	FAA, AIR–113
Pete Spofford	FAA, AFS–900
Ed Walton	United Parcel Service (UPS)
Patty Williams	FAA, AFS–330

Support Staff

Paula Martori	FAA, AFS–310
Dan Reyes	FAA, AFS–310

Service Information Working Group

Blaine (Chip) Amidon, *Working Group Co-Lead*	Boeing
Joe Nolan *Working Group Co-Lead*	Alaska Airlines
Chris Armes	Bombardier Learjet (Learjet)
Elizabeth Bumann	FAA, AIR–113
Ed Carter	Boeing
Eduardo Cerdeira	Embraer
Serge Cheyrouze	Airbus SAS (Airbus)
Paul Comeau	Southwest Airlines
Gil DaCosta	FAA, Aircraft Evaluation Group (AEG)
Craig Fabian	Aeronautical Repair Station Association (ARSA)
Mary Fox	Boeing

Drew Helder	American Eagle Airlines, Inc. (American Eagle)
Ken Hurley	Bombardier Aerospace (Bombardier)
Bob McCabe	FAA, Northeast Region, Engine/Propeller Directorate
Maureen Moreland	FAA, Aircraft Certification Office
Tom Novello	JetBlue Airways
Rose Opland	FAA, Transport Directorate
Ron Pekny	American Airlines
Jim Phoenix	FAA, AFS
Jim Ursitti	US Airways
Joe White	Air Transport Association (ATA)

Invited Subject Matter Experts/Observers

Marco Capaccio	European Aviation Safety Agency

AD ARC Program Support Staff

Dale Johnson	Boeing
Dionne Palermo	FAA, ANM–105, AFS Liaison Program Manager
John Piccola	FAA, ANM–109

APPENDIX F—ACRONYMS

14 CFR	Title 14, Code of Federal Regulations
AC	advisory circular
ACCP	Airworthiness Concern Coordination Process
ACO	FAA aircraft certification office
AD	airworthiness directive
AD ARC	Aviation Rulemaking Committee for Airworthiness Directive Implementation
AD CRT	Airworthiness Directives Compliance Review Team
ADWG	AD Development Working Group
ADAPT	Airworthiness Directive Action Program Team
AEG	FAA Aircraft Evaluation Group
AFS	FAA Flight Standards Service
AGC	FAA Office of the Chief Counsel
AIR	FAA Aircraft Certification Service
AIWG	AD Implementation Working Group
AMM	Airplane Maintenance Manual
AMOC	alternative method of compliance
AMT	aviation maintenance technician
ANM	Northwest Mountain Region
AR	authorized representative
ARSA	Aeronautical Repair Station Association
ASE	aviation safety engineer
ASI	aviation safety inspector
ATA	Air Transport Association of America, Inc.
ATOS	FAA Air Transport Oversight System
AVS	FAA Office of Aviation Safety
AWL	airworthiness limitation
CASS	Continuing Analysis and Surveillance System
CHDO	certificate-holding district office
CMM	Component Maintenance Manual

CMO	certificate management office
CMU	certificate management unit
CPF	Change Proposal Form
DAH	design approval holder
DCT	data collection tools
DER	designated engineering representative
EAPAS	Enhanced Airworthiness Program for Airplane Systems
ECO	Engine Certification Office
EIR	Enforcement Investigative Report
eLMS	electronic Learning Management System
EO	engineering order
EPI	element performance inspection
EWIS	electrical wiring interconnection system
FAA	Federal Aviation Administration
FDMS	Federal Docket Management System
FPWG	FAA Organization/Procedures Working Group
FSDO	FAA Flight Standards District Office
IBR	incorporation by reference
ICA	instructions for continued airworthiness
IDAPT	Intra-Directorate Airworthiness Directive Program Team
IFO	international field office
IRT	Independent Review Team
ISO	International Standards Organization
LAACO	Los Angeles Aircraft Certification Office
MCAI	mandatory continuing airworthiness information
MSAD	Monitor Safety/Analyze Data
NAA	national aviation authorities
NDT	nondestructive testing
NPRM	notice of proposed rulemaking
ODA	organization designation authorization
OEM	original equipment manufacturer

OFR	Office of the Federal Register
PAI	principal avionics inspector
PI	principal inspector
PMI	principal maintenance inspector
QMS	FAA Quality Management System
RAA	Regional Airline Association
RC	required for compliance
RMP	Risk Management Process
SACO	Seattle Aircraft Certification Office
SAI	safety attribute inspection
SB	service bulletin
SIWG	Service Information Working Group
SMS	Safety Management System
STC	supplemental type certificate
SWPM	Standard Wiring Practices Manual
TAD	FAA Transport Airplane Directorate
TC	type certificate
TCCA	Transport Canada Civil Aviation

APPENDIX G—AD ARC CHARTER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ARC Charter

Effective Date:
08/20/2009

SUBJ: Airworthiness Directive Implementation Aviation Rulemaking Committee

1. Purpose of this Charter. This charter creates the Aviation Rulemaking Committee (ARC) for Airworthiness Directive Implementation according to the authority of the Administrator of the Federal Aviation Administration (FAA) under section 106(p)(5) of Title 49 of the United States Code (49 U.S.C. 106(p)(5)). This charter also outlines the committee's organization, responsibilities, and tasks.

2. Audience. This charter applies to members of the Airworthiness Directive Implementation ARC, including members of aviation industry, and employees within the Office of the Associate Administrator for Aviation Safety: Aircraft Certification Service, Flight Standards Service, and the Office of Rulemaking. The audience for this charter also includes employees of the Office of General Counsel and the Office of Aviation Policy and Plans.

3. Where to Find this Charter. You can find this charter on the FAA website at http://www.faa.gov/about/committees/rulemaking/.

4. Background. In early March and April 2008, events of suspected noncompliance to airworthiness directives (AD) prompted US Secretary of Transportation, Mary E. Peters, to establish an Independent Review Team (IRT) to craft recommendations to improve the current aviation safety system. This team consisted of five aviation and safety experts. Their task was to evaluate and make recommendations to improve the FAA's implementation of the aviation safety system and its culture of safety. The IRT issued their final report on September 2, 2008. Their report identified 13 recommendations related to ADs, Voluntary Disclosure Program, Culture of FAA, Safety Management Systems, Air Transportation Oversight System, and the role of FAA Inspectors.

a. An AD Compliance Review Team (CRT) was also established to review the events that caused a major disruption to some airline schedules. The team consisted of eight FAA and industry subject matter experts. The team reviewed compliance issues related to AD 2006-15-15 (Phase 1) and the general process for developing ADs (Phase 2). The AD CRT drafted a report to document their findings and recommendations from their Phase 1 activity. This report noted areas where system improvements could be made.

b. The AD CRT also drafted a report to document their 12 findings and recommendations from their Phase 2 review, which focused on the process of developing and implementing ADs, and ensuring compliance. Their findings and recommendations do not fundamentally change the AD process, but provide suggested enhancements and improvements. The findings and recommendations focus on the areas of: Service Instructions, Aircraft Evaluation Groups (AEGs), Lead Airline Process (ATA Specification 111), AD Process and Implementation, Mandatory Continuing Airworthiness Information, Alternative Methods of Compliance (AMOCs), Crisis Communication, and Part 39 Regulations.

Initiated By: ANM-100

c. The purpose of this ARC is to evaluate and address the recommendations of the AD CRT and those of the IRT relating to airworthiness directives. Because the recommendations of the IRT and the AD CRT address actions to be taken by both the FAA and industry, an ARC is necessary to ensure that further evaluation and implementation of the recommendations adequately considers the needs and objectives of all stakeholders. Implementation of recommendations may require some rulemaking.

5. Organization and Administration of the Airworthiness Directive Implementation ARC. We will set up a committee of members of the aviation community, including manufacturers and air carriers, representing diverse viewpoints. FAA participation and support will come from all affected lines-of-business. Where necessary, the committee may set up specialized work groups that include invited subject matter experts from industry and the FAA.

a. The committee sponsor is the Associate Administrator for Aviation Safety, who:

(1) Appoints members or organizations to the committee, at her sole discretion;

(2) Receives all committee recommendations and reports;

(3) Selects industry and FAA co-chairpersons for the committee; and

(4) Provides administrative support for the committee, through the Aircraft Certification Service (AIR) and Flight Standards Service (AFS).

b. The co-chairpersons will:

(1) Determine (with other committee members) when a meeting is required (a quorum is desirable at committee meetings, but not required);

(2) Arrange notification to all members of the time and place of each meeting;

(3) Draft an agenda for each meeting and conduct the meeting;

(4) Keep meeting minutes; and

(5) Provide status updates to the Associate Administrator for Aviation Safety, at 6 months, 12 months and 18 months from the effective date of this charter.

6. Committee Membership. The committee will consist of about five to ten members, representing airplane manufacturers, air carriers, FAA, and other aviation industry participants. Membership will be balanced in viewpoints, interests, and knowledge of the committee's objectives and scope. Committee membership is limited to promote discussion. Active participation and commitment by members is essential for achieving the committee's objectives. Attendance is essential for continued membership on the committee. The committee may invite additional participants as subject matter experts to support specialized work groups.

7. Public Participation. Persons or organizations outside the committee who want to attend a meeting must get approval in advance of the meeting from a committee co-chairperson or designated federal representative.

8. Committee Procedures and Tasks.

a. The committee advises and provides written recommendations to the Associate Administrator for Aviation Safety (AVS-1).

b. Committee tasks include, but are not limited to, the following:

(1) Establishing work groups to evaluate and address specific recommendations and assigning IRT and CRT recommendations to each work group.

(2) Developing a program plan and implementation schedule to address the specific recommendations.

(3) Reviewing, approving, and implementing the program plan.

(4) Monitoring progress and status of work groups and resolving issues raised by those groups.

(5) Advocating the program plan and implementation actions/schedule with the respective stakeholder organizations.

c. The committee may propose additional tasks as necessary to the Associate Administrator for Aviation Safety for approval.

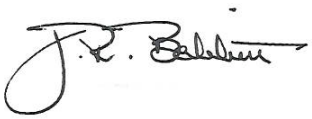
d. The ARC will submit a final report detailing recommendations and implementation actions by 24 months from the effective date of this charter. The Associate Administrator for Aviation Safety may extend this deadline for up to 6 months if it is in the interest of the FAA to do so.

9. Cost and Compensation. The estimated cost to the Federal Government of the Airworthiness Directive Implementation ARC is $130,000, annually. All travel costs for government employees will be the responsibility of the government employee's organization. Non-government representatives serve without government compensation and bear all costs of their committee participation.

10. Availability of Records. Subject to the conditions of the Freedom of Information Act, 5 U.S.C. 522, records, reports, agendas, working papers, and other documents made available to, prepared for, or prepared by the committee will be available for public inspection and copying at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA 98057-3356. Fees will be charged for information furnished to the public according to the fee schedule in 49 CFR part 7.

11. Committee Term. This committee becomes an entity on the effective date of this charter. The committee will remain in existence for a term of 24 months unless its term is ended sooner or extended by the Administrator.

12. Distribution. This charter is distributed to the Office of the Associate Administrator for Aviation Safety, the Office of the Chief Counsel, the Office of Aviation Policy and Plans, and the Office of Rulemaking.



Administrator

APPENDIX H—PROPOSED FAA LEGAL INTERPRETATION

Were any other discrepancies noticed during this inspection?		
For Ercoupe Service Memorandum No. 35		
Did you perform steps 1, 2, and 7 of the Ercoupe Service Memorandum No. 35?	NO	YES
Were any other discrepancies noticed during this inspection?		

Send report to: Roger A. Caldwell, Aerospace Engineer, FAA, ANM–100D, Denver ACO, 26805 East 68th Avenue, Room 214, Denver, Colorado 80249–6361; *fax:* (303) 342–1088; *E-mail: roger.caldwell@faa.gov;* and Univair Aircraft Corporation, 2500 Himalaya Road, Aurora, Colorado 80011

Figure 1

Paperwork Reduction Act Burden Statement

(g) A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120–0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave., SW., Washington, DC 20591, Attn: Information Collection Clearance Officer, AES–200.

Alternative Methods of Compliance (AMOCs)

(h)(1) The Manager, Denver ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD.

(2) Before using any approved AMOC, notify your Principal Maintenance Inspector or Principal Avionics Inspector, as appropriate, or lacking a principal inspector, your local Flight Standards District Office.

(3) AMOCs approved for AD 52–02–02 are approved as AMOCs for this AD.

Related Information

(i) For more information about this AD, contact Roger Caldwell, Aerospace Engineer, FAA, Denver ACO, 26805 East 68th Ave., Room 214, Denver, Colorado 80249–6361; telephone: (303) 342–1086; fax: (303) 342–1088; e-mail: *roger.caldwell@faa.gov.*

(j) For service information identified in this AD, contact Univair Aircraft Corporation, 2500 Himalaya Road, Aurora, Colorado 80011; telephone: (303) 375–8882, facsimile: (303) 375–8888; Internet: *http://univairparts.com.* You may review copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust St., Kansas City, MO 64106. For information on the availability of this material at the FAA, call (816) 329–4148.

Issued in Kansas City, Missouri, on April 7, 2011.

Earl Lawrence,

Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2011–9091 Filed 4–13–11; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2010–1167]

Proposed Airworthiness Directive Legal Interpretation

AGENCY: Federal Aviation Administration, DOT.

ACTION: Proposed airworthiness directive interpretation.

SUMMARY: The Federal Aviation Administration is considering issuing a legal interpretation on various provisions in the regulations applicable to airworthiness directives. Comments from the public are requested to assist the agency in developing the final legal interpretation.

DATES: Comments must be received on or before May 16, 2011.

ADDRESSES: You may send comments identified by Docket Number FAA–2010–1167 using any of the following methods:

Federal eRulemaking Portal: Go to *http://www.regulations.gov* and follow the online instructions for sending your comments electronically.

Mail: Send comments to Docket Operations, M–30; U.S. Department of Transportation, 1200 New Jersey Avenue, SE., Room W12–140, West Building Ground Floor, Washington, DC 20590–0001.

Hand Delivery or Courier: Bring comments to Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Fax: Fax comments to Docket Operations at 202–493–2251.

FOR FURTHER INFORMATION CONTACT: John King, Staff Attorney, Regulations Division, Office of the Chief Counsel, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; telephone: 202–267–3073.

SUPPLEMENTARY INFORMATION:

The Request

The Federal Aviation Administration's (FAA) Organization/Procedures Working Group (WG) of the Airworthiness Directive Implementation Aviation Rulemaking Committee (AD ARC) requested that the FAA provide a legal interpretation of several provisions in 14 Code of Federal Regulations (CFR) that would help resolve a number of issues that have been debated within the WG. These issues partly result from certain changes made in the plain language revision to CFR part 39 in 2002 (see 67 FR 48003, July 22, 2002).

Question 1—Continuing Obligation

Some members of the WG question the extent of an aircraft operator's continuing obligation to maintain an AD-mandated configuration. They ask about two regulations:

Section 39.7 What is the legal effect of failing to comply with an airworthiness directive?

Anyone who operates a product that does not meet the requirements of an applicable airworthiness directive is in violation of this section.

Section 39.9 What if I operate an aircraft or use a product that does not meet the requirements of an airworthiness directive?

If the requirements of an airworthiness directive have not been met, you violate § 39.7 each time you operate the aircraft or use the product.

The majority WG opinion is that the language of § 39.7, and its predecessor § 39.3, imposes an operational mandate that the requirements of the AD be maintained for each operation occurring after the actions required by the AD are accomplished. They conclude that § 39.9 expresses the well-established legal position that for continuing operations of products that do not comply with an AD, each flight is a separate violation.

The minority WG opinion is that if the unsafe condition identified in the AD was fixed at a moment in time, then § 39.7 no longer applies. The conclusion of the WG minority was that even if the product was determined to be in a condition contrary to the requirements of the AD at a later time, this change in configuration may be a violation of CFR 43.13(b), but not § 39.7.

Proposed Response 1—Continuing Obligation

Section 39.9 notes the need for both initial action by the aircraft operator and continued compliance by that aircraft operator with the AD requirements. Section 39.9 was added to the final rule in 2002 as a result of comments that the proposed version of the rule language combined compliance and non-compliance issues in one heading (proposed § 39.5, final version is § 39.7 of the 2002 rulemaking). The final rule preamble stated that the agency added § 39.9 "to refer to § 39.7, which is the rule that operators will violate if they fail to operate or use a product without complying with an AD that applies to that product."

Section 39.9 explains the continuing obligation for aircraft operators to maintain the AD-mandated configuration. Section 39.7 imposes an operational requirement. Because the AD imposes an enforceable requirement to accomplish the mandated actions, the only way to give § 39.7 any meaning is to recognize that operators are required to maintain the AD-mandated configuration. Once the AD requirements are met an operator may only revert to normal maintenance if that maintenance does not result in changing the AD-mandated configuration.

The objective of part 39 and ADs generally is not just to require accomplishment of particular actions; it is to ensure that, when products are operated, they are free of identified unsafe conditions. Section 39.7 is the regulatory means by which the FAA prevents reintroduction of unsafe conditions. In 1965 the FAA recognized that maintenance may be the cause of some unsafe conditions: "The responsibilities placed on the FAA by the Federal Aviation Act justify broadening the regulation [part 39] to make any unsafe conditions, whether resulting from maintenance, design, defect, or otherwise, the proper subject of an AD." (Amendment 39–106; 30 FR 8826, July 14, 1965). Prior to Amendment 39–106 ADs could not be issued unless the unsafe condition was related to a design feature. After Amendment 39–106 ADs could be issued for unsafe conditions however and wherever found. The FAA does not issue ADs as a substitute for enforcing maintenance rules. If a maintenance process is directly related to an unsafe condition, that maintenance action would be proper for an AD. Particularly for unsafe conditions resulting from maintenance, it would be self-defeating to interpret § 39.7 as allowing reversion to the same maintenance practices that caused or contributed to the unsafe condition in the first place.

Question 2—Additional Actions

Some members of the WG questioned the extent of an aircraft operator's obligation to accomplish actions referenced in an AD beyond those actions necessary to resolve the unsafe condition specifically identified in an AD.

The opinion of these WG members is that a reasonable interpretation of the language in § 39.11 directing action to "resolve an unsafe condition" limits the FAA from requiring actions that do "not relate to correcting" the identified unsafe condition. In other words, an AD is limited to those tasks that resolve the unsafe condition, even if other tasks are explicitly listed in the AD or in a referenced service bulletin (SB). Even if § 39.11 doesn't explicitly limit the types of actions that the FAA may mandate in ADs, these members believe that ADs are limited to imposing requirements that are both necessary and "directly related" to addressing an unsafe condition because that is the sole purpose of ADs, as defined in part 39. The belief is that this would allow an operator to comply with those actions that, in the operator's opinion, correct the unsafe condition without having to obtain an alternative means of compliance (AMOC) for other actions, such as access and close-up procedures, that are "not directly related" to addressing that identified unsafe condition.

Other members of the WG have the opinion that § 39.11 is merely descriptive of the types of actions required by an AD; it neither imposes obligations on the operator nor limits the FAA's authority in issuing an AD. These members believe that, given the FAA's broad regulatory authority, ADs may impose requirements that operators may not consider necessary and "directly related" to resolving the unsafe condition.

Proposed Response 2—Additional Actions

The FAA points to the language contained in § 39.11 that answers the WG's second question.

Section 39.11 What actions do airworthiness directives require?

Airworthiness directives specify inspections you must carry out, conditions and limitations you must comply with, and any actions you must take to resolve an unsafe condition.

First Title 49, United States Code, § 44701, establishes the FAA's broad statutory authority to issue regulations in the interest of aviation safety, and the issuance of an AD is an exercise of this authority. While describing the types of actions required by ADs, § 39.11 does not limit the broad authority established by the statute. The requirements of the AD are imposed by the language of the AD itself, and not by § 39.11. Thus an AD may require more actions than correcting the specific unsafe condition. An example would be an AD requirement for certain continuing maintenance actions to prevent or detect the unsafe condition in the future.

In developing an AD, the FAA exercises its discretion in determining what actions are to be required in the interest of aviation safety. This discretion is limited only by the Administrative Procedure Act's prohibition on rulemaking actions that are "arbitrary and capricious." Provided the actions required by an AD are reasonably related to the purpose of resolving the unsafe condition, it is within the FAA's discretion to mandate them. For example, service information frequently includes instructions for accessing the area to be worked on to address the unsafe condition. Because these access instructions are reasonably related to addressing the unsafe condition, it is within the FAA's discretion to mandate them.

We understand that some members of the AD ARC believe that some ADs are overly prescriptive with respect to mandated actions that they believe are unnecessary to address the unsafe condition. As explained previously, § 39.11 does not address this concern. Rather, the rulemaking process by which individual ADs are adopted provides the public with an opportunity to identify and comment upon these concerns with each AD. In addition,

each AD contains a provision allowing for approval of an AMOC, which allows operators to obtain relief from requirements they consider unnecessary or unduly burdensome.

Question 3—Use of the term "Applicable"

A WG member cited the use of the term "applicable" in a specific AD, AD 2007–07–02 (72 FR 14400, March 28, 2007), which contains these requirements:

(f) Within 60 months after the effective date of this AD: Modify the activation mechanism in the chemical oxygen generator of each passenger service unit (PSU) by doing *all the applicable actions specified in the Accomplishment Instructions of the applicable service bulletin specified in Table 1 of this AD.* [Emphasis added.]

The WG member asked for an explanation of the FAA's use of the word "applicable" in the two instances of its use in paragraph (f) of the AD.

Proposed Response 3—Use of the Term "Applicable"

"Applicable" has the same meaning in both places in paragraph (f). The second usage references Table 1 in the AD that identifies the model(s) of airplanes to which each service bulletin applies. So the "applicable service bulletin" is the one that applies to each corresponding airplane model, as indicated in the table in the AD. Similarly, "all the applicable actions" specified in each applicable service bulletin are those actions that are identified as applying to a particular airplane. "Applicable" is a necessary qualifier in this context for two reasons: (1) In many ADs, the referenced service bulletins specify different actions for different airplane configurations, typically identified as "Group 1, Group 2," *etc.* (2) In many ADs, the referenced service bulletins specify different actions depending upon conditions found during accomplishment of previous steps in the instructions, for example, if a crack is smaller than a specified size, repair in accordance with the Structural Repair Manual; if larger, repair in accordance with a method approved by the Aircraft Certification Office. So "applicable" limits the AD's requirements to only those that are specified in the service bulletin for the configuration and conditions of the particular airplane. We intend for the word "applicable" to limit the required actions to those that apply to the particular airplane under the specific conditions found.

The opinion that "applicable" in this context should be interpreted to refer only to those actions in the service bulletin that are necessary to address the unsafe condition, and that operators should not be required to accomplish any other actions that they determine are not necessary, is incorrect. Without the modifier "applicable," the requirement to accomplish "all actions specified in the service bulletin" would literally mandate accomplishing all actions, whether or not applicable to the configuration and condition of a particular airplane. The modifier "applicable" is necessary to avoid this literal, but unintended and likely overly burdensome, meaning.

For example, in AD 2007–07–02 different actions are required depending on the conditions found while accomplishing the modification. The adjective, "applicable," is necessary to limit the required actions to those that are indicated for the conditions found. The purpose of the phrase, "by accomplishing all the applicable actions specified," is to eliminate precisely the ambiguity that would be introduced by the WG members' question. The operator is required to accomplish "all" the actions that are "applicable" to the affected airplane, without allowing discretion to determine which ones are, in the operator's opinion, "necessary" to address the unsafe condition.

Question 4—Impossibility

A member of the AD ARC questions whether an AD needs to specifically address "impossibilities" (for example, an AD requiring an action that is not possible for the specific aircraft to which the AD applies, such as modifying parts that have been removed during an earlier alteration).

Proposed Response 4—Impossibility

The FAA points to the language of §§ 39.15 and 39.17 that answers the fourth question.

Section 39.15 Does an airworthiness directive apply if the product has been changed?

Yes, an airworthiness directive applies to each product identified in the airworthiness directive, even if an individual product has been changed by modifying, altering, or repairing it in the area addressed by the airworthiness directive.

Section 39.17 What must I do if a change in a product affects my ability to accomplish the actions required in an airworthiness directive?

If a change in a product affects your ability to accomplish the actions required by the airworthiness directive in any way, you must request FAA approval of an alternative method of compliance. Unless you can show the change eliminated the unsafe condition, your request should include the specific actions that you propose to address the unsafe condition. Submit your request in the manner described in § 39.19.

If a change to a product makes it impossible to comply with the requirements of an AD, then the operator must request an AMOC approval.

The FAA does not have the resources to determine the modification status of every product to which the AD may apply. If it is impossible to comply with an AD as written, that does not mean the product does not have the unsafe condition. The only way to make sure the product does not, or that there is another acceptable way to address it, is to require an operator to obtain an AMOC approval.

For several years before part 39 was revised in 2002 the FAA included a Note in every AD that contained the same substance as the regulation. This revision to the regulations was a result of some operators claiming that an AD did not apply to a particular airplane because the airplane's configuration had changed, even though that airplane was specifically identified in the "Applicability" paragraph of the AD. But a change in product configuration does not necessarily mean that the unsafe condition has been eliminated, and in some cases the unsafe condition may actually be aggravated. So it is necessary to emphasize that the "Applicability" paragraph of the AD determines AD applicability, not the configuration of an individual airplane. In the case of the affected component having been removed from the airplane, the operator must obtain an AMOC approval. If the removed component is replaced with a different component that may or may not retain the unsafe condition, this is a technical issue that must be addressed through the AMOC process. There are infinite variations on the "impossibility" issue that cannot be anticipated when drafting an AD but for which the AMOC process is well suited.

Issued in Washington, DC, on April 7, 2011.

Rebecca B. MacPherson,

Assistant Chief Counsel for Regulations.

[FR Doc. 2011–8972 Filed 4–13–11; 8:45 am]

BILLING CODE 4910–13–P

(3) The NPPO must review and maintain all forms and documents related to export program activities in places of production and packinghouses for at least 1 year and, as requested, provide them to APHIS for review.

(b) *Place of production requirements.* (1) The personnel conducting the trapping required in paragraph (c) of this section must be hired, trained, and supervised by the NPPO of the exporting country. The exporting country's NPPO must certify that each place of production has effective fruit fly trapping programs, and follows control guidelines, when necessary, to reduce quarantine pest populations. APHIS may monitor the places of production.

(2) The places of production producing pitaya for export to the United States must be registered with the NPPO of the exporting country.

(3) Trees and other structures, other than the crop itself, must not shade the crop during the day. No *C. capitata* or *A. ludens* host plants may be grown within 100 meters of the edge of the production site.

(4) Pitaya fruit that has fallen on the ground must be removed from the place of production at least once every 7 days and may not be included in field containers of fruit to be packed for export.

(5) Harvested pitaya fruit must be placed in field cartons or containers that are marked to show the place of production.

(c) *Mitigation measures for C. capitata and A. ludens.* (1) *Pest-free places of production.* (i) Beginning at least 1 year before harvest begins and continuing through the end of the shipping season, trapping for *A. ludens* and *C. capitata* must be conducted in the places of pitaya fruit production with at least 1 trap per hectare of APHIS-approved traps, serviced every 7 days.

(ii) From 2 months prior to harvest through the end of the shipping season, when traps are serviced, if either *A. ludens* or *C. capitata* are trapped at a particular place of production at cumulative levels above 0.07 flies per trap per day, pesticide bait treatments must be applied in the affected place of production in order for the place of production to remain eligible to export pitaya fruit to the continental United States. If the average *A. ludens* or *C. capitata* catch is greater than 0.07 flies per trap per day for more than 2 consecutive weeks, the place of production is ineligible for export until the rate of capture drops to an average of less than 0.07 flies per trap per day.

(iii) The NPPO must maintain records of fruit fly detections for each trap, update the records each time the traps are checked, and make the records available to APHIS upon request. The records must be maintained for at least 1 year for APHIS review.

(2) *Pest-free area for C. capitata.* If the pitaya fruit are produced in a place of production located in an area that is designated as free of *C. capitata* in accordance with § 319.56–5, the trapping in paragraph (c)(1) of this section is not required for *C. capitata.*

(d) *Packinghouse requirements.* (1) The packinghouses must be registered with the NPPO of the exporting country.

(2) All openings to the outside must be covered by screening with openings of not more than 1.6 mm or by some other barrier that prevents pests from entering the packinghouses.

(3) The packinghouses must have double doors at the entrance to the facilities and at the interior entrance to the area where the pitaya fruit are packed.

(4) While in use for packing pitaya fruit for export to the United States, the packinghouses may only accept pitaya fruit that are from registered places of production and that are produced in accordance with the requirements of this section.

(e) *Post-harvest procedures.* The pitaya fruit must be packed within 24 hours of harvest in a pest-exclusionary packinghouse. Pitaya fruit must be packed in insect-proof cartons or containers that can be sealed at the packinghouse, or covered with insect-proof mesh or a plastic tarpaulin for transport to the United States. These safeguards must be intact upon arrival in the United States.

(f) *Phytosanitary inspection.* (1) The NPPO of the exporting country must visually inspect a biometric sample of pitaya fruit, jointly approved by APHIS and the NPPO of the exporting country, for *D. neobrevipes* and *P. minor,* and cut open a portion of the fruit to detect *A. ludens* and *C. capitata.* If the fruit is from a pest-free area for *C. capitata,* then the fruit will only be inspected for *A. ludens.*

(2) The fruit are subject to inspection at the port of entry for all quarantine pests of concern. Shipping documents identifying the place(s) of production in which the fruit was produced and the packing shed(s) in which the fruit was processed must accompany each lot of fruit presented for inspection at the port of entry to the United States. This identification must be maintained until the fruit is released for entry into the United States.

(3) If *D. neobrevipes* or *P. minor* is found, the entire consignment of fruit will be prohibited from import into the United States unless the shipment is treated with an approved treatment monitored by APHIS. If inspectors (either from the exporting country's NPPO or at the U.S. port of entry) find a single fruit fly larva in a shipment, they will reject the entire consignment for shipment to the United States, and the place of production for that shipment will be suspended from the export program until appropriate measures, agreed upon by the NPPO of the exporting country and APHIS, have been taken.

(g) *Commercial consignments.* The pitaya fruit may be imported in commercial consignments only.

(h) *Phytosanitary certificate.* Each consignment of pitaya fruit must be accompanied by a phytosanitary certificate issued by the NPPO of the exporting country, containing an additional declaration stating that the fruit in the consignment was produced in accordance with requirements in 7 CFR 319.56–51.

Done in Washington, DC, this 18th day of May 2011.

Kevin Shea,

Acting Administrator, Animal and Plant Health Inspection Service.

[FR Doc. 2011–12755 Filed 5–23–11; 8:45 am]

BILLING CODE 3410–34–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2010–1167]

Proposed Airworthiness Directives Legal Interpretation

AGENCY: Federal Aviation Administration, DOT.

ACTION: Extension of comment period for a proposed airworthiness directives legal interpretation.

SUMMARY: The Federal Aviation Administration published a proposed airworthiness directives legal interpretation for comment. In response to several requests, we are extending the comment period to allow additional time for comment. Comments from the public are requested to assist the agency in developing the final legal interpretation.

DATES: Comments must be received on or before June 30, 2011.

ADDRESSES: You may send comments identified by Docket Number FAA–2010–1167 using any of the following methods:

• *Federal eRulemaking Portal:* Go to *http://www.regulations.gov* and follow the online instructions for sending your comments electronically.

• *Mail:* Send comments to Docket Operations, M–30; U.S. Department of Transportation, 1200 New Jersey Avenue, SE., Room W12–140, West Building Ground Floor, Washington, DC 20590–0001.

• *Hand Delivery or Courier:* Bring comments to Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

• *Fax:* Fax comments to Docket Operations at 202–493–2251.

FOR FURTHER INFORMATION CONTACT: John King, Staff Attorney, Regulations Division, Office of the Chief Counsel, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; telephone: 202–267–3073.

SUPPLEMENTARY INFORMATION:

Background

On April 14, 2011, the Federal Aviation Administration (FAA) published a proposed airworthiness directives legal interpretation in the **Federal Register** for comment (72 FR 20898). The FAA received numerous comments by the close of the comment period on May 16, 2011. Included in the comments were requests to extend the comment period to allow additional time for comment. The FAA is granting an extension until June 30, 2011, for the public to review the proposed interpretation and provide comments. We are repeating the publication of the proposal for the convenience of the reader.

The Request

The FAA's Organization/Procedures Working Group (WG) of the Airworthiness Directive Implementation Aviation Rulemaking Committee (AD ARC) requested that the FAA provide a legal interpretation of several provisions in 14 Code of Federal Regulations (CFR) that would help resolve a number of issues that have been debated within the WG. These issues partly result from certain changes made in the plain language revision to CFR part 39 in 2002 (see 67 FR 47998, July 22, 2002).

Question 1—Continuing Obligation

Some members of the WG question the extent of an aircraft operator's continuing obligation to maintain an AD-mandated configuration. They ask about two regulations:

§ 39.7 What is the legal effect of failing to comply with an airworthiness directive?

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The majority WG opinion is that the language of § 39.7, and its predecessor § 39.3, imposes an operational mandate that the requirements of the AD be maintained for each operation occurring after the actions required by the AD are accomplished. They conclude that § 39.9 expresses the well-established legal position that for continuing operations of products that do not comply with an AD, each flight is a separate violation.

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Proposed Response 1—Continuing Obligation

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Section 39.9 explains the continuing obligation for aircraft operators to maintain the AD-mandated configuration. Section 39.7 imposes an operational requirement. Because the AD imposes an enforceable requirement to accomplish the mandated actions, the only way to give § 39.7 any meaning is to recognize that operators are required to maintain the AD-mandated configuration. Once the AD requirements are met an operator may only revert to normal maintenance if that maintenance does not result in changing the AD-mandated configuration.

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The opinion of these WG members is that a reasonable interpretation of the language in § 39.11 directing action to "resolve an unsafe condition" limits the FAA from requiring actions that do "not relate to correcting" the identified unsafe condition. In other words, an AD is limited to those tasks that resolve the unsafe condition, even if other tasks are explicitly listed in the AD or in a referenced service bulletin (SB). Even if § 39.11 doesn't explicitly limit the types of actions that the FAA may mandate in ADs, these members believe that ADs are limited to imposing requirements that are both necessary and "directly related" to addressing an unsafe condition because that is the sole purpose of ADs, as defined in part 39. The belief is that this would allow an operator to comply with those actions that, in the operator's opinion, correct

the unsafe condition without having to obtain an alternative means of compliance (AMOC) for other actions, such as access and close-up procedures, that are "not directly related" to addressing that identified unsafe condition.

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The FAA points to the language contained in § 39.11 that answers the WG's second question.

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Airworthiness directives specify inspections you must carry out, conditions and limitations you must comply with, and any actions you must take to resolve an unsafe condition.

First Title 49, United States Code, § 44701, establishes the FAA's broad statutory authority to issue regulations in the interest of aviation safety, and the issuance of an AD is an exercise of this authority. While describing the types of actions required by ADs, § 39.11 does not limit the broad authority established by the statute. The requirements of the AD are imposed by the language of the AD itself, and not by § 39.11. Thus an AD may require more actions than correcting the specific unsafe condition. An example would be an AD requirement for certain continuing maintenance actions to prevent or detect the unsafe condition in the future.

In developing an AD, the FAA exercises its discretion in determining what actions are to be required in the interest of aviation safety. This discretion is limited only by the Administrative Procedure Act's prohibition on rulemaking actions that are "arbitrary and capricious." Provided the actions required by an AD are reasonably related to the purpose of resolving the unsafe condition, it is within the FAA's discretion to mandate them. For example, service information frequently includes instructions for accessing the area to be worked on to address the unsafe condition. Because these access instructions are reasonably related to addressing the unsafe condition, it is within the FAA's discretion to mandate them.

We understand that some members of the AD ARC believe that some ADs are overly prescriptive with respect to mandated actions that they believe are unnecessary to address the unsafe condition. As explained previously, § 39.11 does not address this concern. Rather, the rulemaking process by which individual ADs are adopted provides the public with an opportunity to identify and comment upon these concerns with each AD. In addition, each AD contains a provision allowing for approval of an AMOC, which allows operators to obtain relief from requirements they consider unnecessary or unduly burdensome.

Question 3—Use of the Term "Applicable"

A WG member cited the use of the term "applicable" in a specific AD, AD 2007–07–02 (72 FR 14400, March 28, 2007), which contains these requirements:

(f) Within 60 months after the effective date of this AD: Modify the activation mechanism in the chemical oxygen generator of each passenger service unit (PSU) by doing *all the applicable actions specified in the Accomplishment Instructions of the applicable service bulletin specified in Table 1 of this AD.* [Emphasis added.]

The WG member asked for an explanation of the FAA's use of the word "applicable" in the two instances of its use in the paragraph (f) of the AD.

Proposed Response 3—Use of the Term "Applicable"

"Applicable" has the same meaning in both places in paragraph (f). The second usage references Table 1 in the AD that identifies the model(s) of airplanes to which each service bulletin applies. So the "applicable service bulletin" is the one that applies to each corresponding airplane model, as indicated in the table in the AD. Similarly, "all the applicable actions" specified in each applicable service bulletin are those actions that are identified as applying to a particular airplane. "Applicable" is a necessary qualifier in this context for two reasons: (1) In many ADs, the referenced service bulletins specify different actions for different airplane configurations, typically identified as "Group 1, Group 2," etc. (2) In many ADs, the referenced service bulletins specify different actions depending upon conditions found during accomplishment of previous steps in the instructions, for example, if a crack is smaller than a specified size, repair in accordance with the Structural Repair Manual; if larger, repair in accordance with a method approved by the Aircraft Certification Office. So "applicable" limits the AD's requirements to only those that are specified in the service bulletin for the configuration and conditions of the particular airplane. We intend for the word "applicable" to limit the required actions to those that apply to the particular airplane under the specific conditions found.

The opinion that "applicable" in this context should be interpreted to refer only to those actions in the service bulletin that are necessary to address the unsafe condition, and that operators should not be required to accomplish any other actions that they determine are not necessary, is incorrect. Without the modifier "applicable," the requirement to accomplish "all actions specified in the service bulletin" would literally mandate accomplishing all actions, whether or not applicable to the configuration and condition of a particular airplane. The modifier "applicable" is necessary to avoid this literal, but unintended and likely overly burdensome, meaning.

For example, in AD 2007–07–02 different actions are required depending on the conditions found while accomplishing the modification. The adjective, "applicable," is necessary to limit the required actions to those that are indicated for the conditions found. The purpose of the phrase, "by accomplishing all the applicable actions specified," is to eliminate precisely the ambiguity that would be introduced by the WG members' question. The operator is required to accomplish "all" the actions that are "applicable" to the affected airplane, without allowing discretion to determine which ones are, in the operator's opinion, "necessary" to address the unsafe condition.

Question 4—Impossibility

A member of the AD ARC questions whether an AD needs to specifically address "impossibilities" (for example, an AD requiring an action that is not possible for the specific aircraft to which the AD applies, such as modifying parts that have been removed during an earlier alteration).

Proposed Response 4—Impossibility

The FAA points to the language of §§ 39.15 and 39.17 that answers the fourth question.

§ 39.15 Does an airworthiness directive apply if the product has been changed?

Yes, an airworthiness directive applies to each product identified in the airworthiness directive, even if an individual product has been changed by modifying, altering, or repairing it in the area addressed by the airworthiness directive.

§ 39.17 What must I do if a change in a product affects my ability to accomplish the

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If a change in a product affects your ability to accomplish the actions required by the airworthiness directive in any way, you must request FAA approval of an alternative method of compliance. Unless you can show the change eliminated the unsafe condition, your request should include the specific actions that you propose to address the unsafe condition. Submit your request in the manner described in § 39.19.

If a change to a product makes it impossible to comply with the requirements of an AD, then the operator must request an AMOC approval.

The FAA does not have the resources to determine the modification status of every product to which the AD may apply. If it is impossible to comply with an AD as written, that does not mean the product does not have the unsafe condition. The only way to make sure the product does not, or that there is another acceptable way to address it, is to require an operator to obtain an AMOC approval.

For several years before part 39 was revised in 2002 the FAA included a Note in every AD that contained the same substance as the regulation. This revision to the regulations was a result of some operators claiming that an AD did not apply to a particular airplane because the airplane's configuration had changed, even though that airplane was specifically identified in the "Applicability" paragraph of the AD. But a change in product configuration does not necessarily mean that the unsafe condition has been eliminated, and in some cases the unsafe condition may actually be aggravated. So it is necessary to emphasize that the "Applicability" paragraph of the AD determines AD applicability, not the configuration of an individual airplane. In the case of the affected component having been removed from the airplane, the operator must obtain an AMOC approval. If the removed component is replaced with a different component that may or may not retain the unsafe condition, this is a technical issue that must be addressed through the AMOC process. There are infinite variations on the "impossibility" issue that cannot be anticipated when drafting an AD but for which the AMOC process is well suited.

Issued in Washington, DC, on May 18, 2011.

Rebecca B. MacPherson,

Assistant Chief Counsel for Regulations.

[FR Doc. 2011–12733 Filed 5–23–11; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2011–0475; Directorate Identifier 2010–NM–199–AD]

RIN 2120–AA64

Airworthiness Directives; The Boeing Company Model 757 Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for the products listed above. For certain airplanes, this proposed AD would require the installation of new relays adjacent to two of the spoiler control modules that would prevent the deployment of certain spoiler pairs when landing flaps are selected. For certain other airplanes, this proposed AD would require torquing the bracket assembly installation nuts and ground stud nuts, and doing bond resistance tests between the bracket assemblies and the terminal lugs on the ground studs. This proposed AD is prompted by numerous reports of unintended lateral oscillations during the final approach, just before landing. We are proposing this AD to reduce the chance of unintended lateral oscillations near touchdown, which could result in loss of lateral control of the airplane, and consequent airplane damage or injury to flight crew and passengers.

DATES: We must receive comments on this proposed AD by July 8, 2011.

ADDRESSES: You may send comments by any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov*. Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H–65, Seattle, Washington 98124–2207; phone: 206–544–5000, extension 1; fax: 206–766–5680; e-mail: *me.boecom@boeing.com;* Internet: *https://www.myboeingfleet.com.* You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425–227–1221.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov;* or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800–647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Marie Hogestad, Aerospace Engineer, Flight Controls, ANM–130S, Seattle Aircraft Certification Office (ACO), FAA, 1601 Lind Avenue, SW., Renton, Washington 98057–3356; phone: 425–917–6418; fax: 425–917–6590; e-mail: *marie.hogestad@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA–2011–0475; Directorate Identifier 2010–NM–199–AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to *http://www.regulations.gov,* including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We have received numerous reports of Boeing 757 events where the flight crews experienced unintended lateral oscillations during the final approach, just before landing. One event resulted in a nose gear collapse after a hard landing and another event resulted in a tail strike during a landing that was aborted because of the oscillations. The oscillations are characterized by large

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Memorandum

Date: SEP 0 1 2010

To: Rebecca MacPherson, Assistant Chief Counsel for Regulations, AGC-200

From: Steven Douglas, Deputy Division Manager, Aircraft Maintenance Division, AFS-301a

Subject: Request for Interpretation 14 CFR sections 39.7, 39.9 and 39.11

The Federal Aviation Administration (FAA) Organization/Procedures Working Group (WG) of the Airworthiness Directive Implementation Aviation Rulemaking Committee (AD ARC) believes that an interpretation of 14 Code of Federal Regulations (CFR) sections 39.7, 39.9, and 39.11 would help resolve a number of issues that have been debated within the WG.

These issues result from certain changes made in the "plain language" revision to part 39 in 2004. Specifically WG members expressed divergent opinions regarding the verb usage and tense in the current "plain language" version of part 39.

The sections that are particularly troublesome are presented below, with the "old" version (where applicable) in italics.

(1) Section 39.11 What actions do airworthiness directives require? Airworthiness directives specify inspections you must carry out, conditions and limitations you must comply with, and any actions you must take to resolve an unsafe condition.

Section 39. 11 Applicability. This subpart identifies those products in which the Administrator has found an unsafe condition as described in Sec. 39.1 and, as appropriate, prescribes inspections and the conditions and limitations, if any, under which those products may continue to be operated.

One opinion is that a reasonable interpretation of the language directing action to "resolve an unsafe condition", limited the agency from requiring actions that did not relate to correcting the identified unsafe condition. In other words, an AD is limited to those tasks that resolve the unsafe condition, whether the tasks are explicitly listed in the AD or part of a referenced service bulletin (SB).

(2) Section 39.9 What if I operate an aircraft or use a product that does not meet the requirements of an airworthiness directive? If the requirements of an airworthiness directive have not been met, you violate § 39.7 each time you operate the aircraft or use the product.

One opinion is that the use of the words "have not been met" indicated that "if" the unsafe condition was indeed fixed at a moment in time, this section of the regulations did not apply. In other words, if the AD was at one time complied with as required by section 39.11, this section could not be applicable. The conclusion of the position was this regulation pointed to a specific moment in time, i.e., once the unsafe condition was corrected, the regulation no longer applied, even if the product was determined to be contrary to the requirements of the AD at a later time. If the product was operated "out of configuration", then section 43.13(b) would be violated, not section 39.7.

The other opinion is that the language of section 39.7 (as well as its earlier version, i.e., section 39.3) imposes an operational mandate that the requirements of the AD be maintained for each operation occurring after the actions required by the AD are accomplished.

In other words, this section simply expresses the well established legal conclusion that, for continuing operations of products that do not comply with ADs, each flight is a separate violation. The emphasis on verb tense is misplaced; if a product once complied, but for whatever reason no longer complies, the requirements of the AD "have not been met" when the product is operated on that particular flight.

(3) Section 39.7 What is the legal effect of failing to comply with an airworthiness directive? Anyone who operates a product that does not meet the requirements of an applicable airworthiness directive is in violation of this section.

Section 39.3 General. No person may operate a product to which an airworthiness directive applies except in accordance with the requirements of that airworthiness directive.

This section was not discussed with as much vigor as section 39.9; the language in both the old and new version indicates that the product must comply with the AD whenever it is operated or a violation will result.

Please advise the WG which of the above opinions is correct and provide whatever additional guidance on the meaning of each section that you think may be useful.

Aeronautical Repair Station Association

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M E M O R A N D U M

TO: Airworthiness Directive Implementation Aviation Rulemaking Committee

FROM: Sarah MacLeod
Executive Director
Aeronautical Repair Station Association

DATE: August 31, 2010

RE: Additional Issues to Consider Regarding 14 CFR part 39 Compliance
Recommendation 12

During the deliberations on how to address recommendation 12, several underlying issues were brought to my attention as the point of contact for the sub-group working the matter.

Since the sub-group and the Working Group did not participate in discussing these issues, it was determined they should not be part of the Summary Report. However, the industry requested that they be brought to the ARC's attention since it was believed they are some of the underlying reasons that the FAA and industry are having compliance and enforcement difficulties with part 39.

"AD-Friendly" Service Bulletins

The industry raised the issue of whether the advent of "user-friendly" and/or "AD-friendly" service bulletins may have contributed to the current compliance issues. The airlines noted that compliance issues and the need for AMOCs have increased significantly over the past decade. It is during this time that the "AD-friendly" service bulletins were introduced.

It is believed that the basis for "AD-friendly" service bulletins was to alleviate differences between AD-mandated actions and actions that may have been accomplished in accordance with service bulletins issued prior to the AD compliance requirement.

However, this effort may have resulted in unintended consequences. Namely—

- Did the adoption of "AD-friendly" wording inadvertently increase the scope of ADs beyond the requirements necessary to fix or address the unsafe condition, i.e., the "safety intent"? It seems that "AD-friendly" mandates the entire service bulletin, whereas prior to "AD-friendly", the corrective actions for the safety issues were specifically identified.
- Similarly, have service bulletins become more encompassing?

Therefore, it is believed that the ARC should request a comprehensive review of the concept and understanding of the "AD-Friendly" service bulletin process to determine whether its adoption inadvertently increase the scope of ADs beyond those actions essential to address the defined unsafe condition.

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Use of the Word "Applicable"

One difficulty for operators is how to interpret the word "applicable" when it is used in relation to a service bulletin incorporated by reference.

The particular example of AD 2007-07-02 was used to illustrate the different approaches that can be taken when attempting to interpret exactly what must be accomplished by the operator in order to establish compliance with the AD.

In this particular case, the agency's final rule defined the unsafe condition as:

> (d) This AD results from several reports indicating that some chemical oxygen generators failed to activate during in-flight decompression events. These failures were due to fracture of components between the passenger oxygen mask and the release pin in the oxygen generator. We are issuing this AD to prevent failure of the activation mechanism of the chemical oxygen generator, which could result in the unavailability of supplemental oxygen and possible incapacitation of passengers and cabin crew during an in-flight decompression. *Emphasis added.* (See, 72 FR 14402, (March 28, 2007).)

The agency's notice of proposed rulemaking specifically described the extent and nature of the issue that was creating the unsafe condition. The "Discussion" section of the notice stated:

> We have received several reports indicating that some chemical oxygen generators failed to activate during inflight decompression events. These failures were due to fracture of components between the passenger oxygen mask and the release pin in the oxygen generator. The release pin must be pulled out of the oxygen generator firing mechanism to activate the generator. The fractures occur when a passenger encounters resistance when attempting to pull down the oxygen mask. The system is designed so that when a mask is pulled down for donning, a lanyard attached to the mask pulls down on a release cable within the passenger service unit (PSU). The release cable is attached to a pin in the oxygen generator firing mechanism. Downward pressure applied on the release cable when the mask is pulled down causes the pin to be pulled out of the firing mechanism, activating the generator and starting the flow of oxygen to the masks. If excessive resistance occurs when pulling down the mask, the components between the mask and the generator release pin can break, such as the tab that connects the oxygen mask to the lanyard or the ring that attaches the lanyard to the release cable. Failure of the activation mechanism of the chemical oxygen generator could result in the unavailability of supplemental oxygen and possible incapacitation of passengers and cabin crew during an inflight decompression. (See, 71 FR 39593, (July 13, 2006).)

The Compliance section of the AD states:

> (e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done. (See, 72 FR 14402, (March 28, 2007).) (Emphasis added.)

The Modification section of the AD states:

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(f) Within 60 months after the effective date of this AD: Modify the activation mechanism in the chemical oxygen generator of each passenger service unit (PSU) by doing all the applicable actions specified in the Accomplishment Instructions of the applicable service bulletin specified in Table 1 of this AD. (See, 72 FR 14402, (March 28, 2007).)

Table 1 sets forth different service bulletins for the various models of aircraft as follows:

Boeing special attention Service Bulletin	Dated	Applicable to model/series
737–25–1545	September 8, 2005	737–600, –700, –800, and –900
737–25–1548	November 22, 2005	737–300, –400, and –500
757–25–0284	November 22, 2005	757–200
757–25–0285	November 22, 2005	757–300

A query was made as to exactly what the word "applicable" was referring to in the two instances of its use in the "Modification" paragraph of the AD.

There seems to be two possibilities:

(1) Applying a narrow read of the words, one could come to the conclusion that the first applicable referred to actions specified in the Accomplishment Instructions that would modify the activation mechanism (correct the identified unsafe condition); the second applicable referred to the service bulletin relating to the particular model and series upon which the modification was being made.

This narrow read of the terms allows the operator to comply with those actions that correct the unsafe condition without having to obtain an AMOC for actions that are "not applicable" to addressing that identified condition. If this is not the proper "interpretation" of the first usage of the term "applicable", then that word should be removed because the Modification paragraph really requires the performance of "all the actions specified in the Accomplishment Instructions of the applicable service bulletin specified in Table 1 of [the] AD."

(2) Applying a broad read of the words, the term applicable is believed to have the same meaning in both instances. The second usage references a table that identifies the model(s)/serie(s) of airplanes to which each service bulletin applies. So the "applicable service bulletin" is the one that applies to each corresponding airplane model, as indicated in the table.

Similarly, the "applicable actions" specified in each service bulletin are those actions that are identified as applying to a particular airplane.

"Applicable" is a necessary qualifier in this context for two reasons: (1) In many ADs, the referenced service bulletins specify different actions for different airplane configurations, typically identified as "Group 1, Group 2," etc. (2) In many ADs, the referenced service bulletins specify different actions depending upon conditions found during accomplishment of previous steps in the instructions, e.g., if

a crack is smaller than a specified size, repair IAW the SRM; if larger, repair IAW a method approved by the ACO. So "applicable" limits the AD's requirements to only those that are specified in the service bulletin for the configuration and conditions of the particular airplane.

The position that "applicable" in this context should be interpreted to refer only to those actions in the service bulletin that are necessary to address the unsafe condition, and that operators should not be required to accomplish any other actions that they determine are not necessary would be incorrect.

It is believed that this approach would be inconsistent with the intent of the ADs and would result in inconsistent and potentially unsafe implementation of AD requirements. Because operators typically are not familiar with the underlying reasons for particular provisions in service bulletins, they may identify as not "applicable" actions that, in fact, are necessary to adequately address the unsafe condition, thereby potentially defeating the purpose of the AD. This would also jeopardize the enforceability of ADs by allowing operators to choose which actions are necessary for compliance. Finally, this approach would violate a basic legal principle of regulatory construction that a term used more than once is presumed to have the same meaning unless it is apparent that it has a different meaning in different contexts.

The second possible explanation of the use of the term "applicable" twice in the context of this particular AD seemed to some, to be problematic under general rulemaking principles. First, the under the broad interpretation, the use of the initial "applicable" adds no value to the sentence. In other words, if the service bulletins already separate actions that are and/or are not applicable based on conditions, groups, etc., the addition of the term doesn't add value or meaning. Indeed, it invites confusion since it indicates there may be additional "non-applicable actions" to those in the service bulletin but not itemized by the AD.

Second, the belief that the "operators typically are not familiar with the underlying reasons for particular provisions in service bulletins" is contrary to a full understanding of the regulation under which compliance is expected. The AD process is a special and very powerful rulemaking activity with a very narrow application. There should be no "secret science" to the description of the unsafe condition or to the exact requirements needed to address that condition. If a service bulletin in unclear on exactly what is required to address the unsafe condition, the agency has put itself and the public in a problematic enforcement and compliance position. Most persons responsible for AD compliance are not lawyers and, indeed, reasonable lawyers disagree on the use of the term in the context presented. The agency's rules should be clear on their face and should not take interpretation from the FAA or the public for compliance.

Third, the basic legal principle of regulatory construction that a term used more than once is presumed to have the same meaning unless it is apparent that it has a different meaning in different contexts is also problematic in this case. The specific sentence at issue is "[m]odify the activation mechanism in the chemical oxygen generator of each passenger service unit (PSU) by doing all the applicable actions specified in the Accomplishment Instructions of the applicable service bulletin specified in Table 1 of this AD." It is not unreasonable to conclude from the sentence's context that the first use of the term "applicable" refers to the actions necessary to "modify the activation mechanism" and the second

"applicable" is referring to the service bulletin that lists different makes and models of aircraft. This is particularly true in this situation since "the applicable actions specified in the Accomplishment Instructions" of each service bulletin which modifies the activation mechanism are the same.

Finally, the service bulletins were issued almost two years prior to the AD. The accomplishment of the "applicable actions" under part 43 allows the operator to modify the activation mechanism in accordance with its general maintenance procedures. In this case, the PSU would have been removed from the aircraft and the unsafe condition specifically discussed in the preamble and included in the final rule would have been addressed in the shop environment. Indeed, operators could reasonably conclude that the FAA would know that PSUs typically go to a shop during scheduled aircraft maintenance (rather than having maintenance performed on the aircraft) by adding the first "applicable" to the AD's instructions.

While a change to part 39 would not address this issue, the industry is concerned that these types of issues are creating compliance and enforcement problems. Therefore, the industry believes that the ARC should:

- Request the FAA develop a legal opinion or enforcement policy regarding the nature and extent of part 39 rulemaking activity. Although the agency has general rulemaking authority regarding aviation safety, part 39 appears to be reserved for those instances where a specifically definable unsafe condition in a particular product must be addressed. The industry has expressed the belief that ADs should be limited to the specifically defined unsafe condition and those actions necessary to address those unsafe conditions. In other words, if an AD contains action that is not directly related to addressing the defined unsafe condition, it would make the rule and its enforcement problematic.

In addition to the items on the Recommendation 12 summary sheet, the industry also believes that the ARC should:

- Request an evaluation of the use of the term "terminating action" to ensure that it does in fact bring an end to any AD-related requirements with respect to the particular unsafe condition so that operators know that they can put that aspect back into the "normal" maintenance program.

From AD ARC Meeting December 14 and 15, 2010

Action Item: Rebecca MacPherson (AGC–200) to talk to Peter Lynch (AGC–300[52]) to determine if AMOCs are required to address impossible actions mandated by the AD (for example, if SB calls out an action that physically cannot be done for some reason). (Action Item No. 2010–12–08)

[52] Assistant Chief Counsel for Enforcement.

APPENDIX I—LIST OF AD ARC DELIVERABLES

The listed documents support the majority of the primary implementation actions described in this report. You may view or obtain copies of these documents from the Web sites as indicated.

- FAA Order 8900.1, Flight Standards Information Management System; (http://rgl.faa.gov):
  - Aviation Safety Inspector Decisionmaking, Volume 3, Chapter 60, Section 1 (April 23, 2011);
  - Aircraft Evaluation Groups, Volume 8, Chapter 2, Section 2 (June 20, 2011);
  - Aircraft Evaluation Group Outreach in the Airworthiness Directives Process, Volume 8, Chapter 2, Section 9 (June 20, 2011);
  - Requesting 24/7 Support for AMOCs , Volume 3, Chapter 59, Section 4 (April 12, 2011);
  - Processing Alternative Methods of Compliance Proposals to Airworthiness Directives, Volume 3, Chapter 59, Section 3 (April 12, 2011);
  - Processing an AMOC Proposal, Volume 3, Chapter 59, Section 2 (April 12, 2011);
  - Evaluating an Airworthiness Directives Management Process; Volume 3, Chapter 59, Section 1 (June 1, 2011); and
  - Risk Management Process, Volume 10, Chapter 3, Section 1 (January 10, 2011).
- FAA Order 8110.103A, Alternative Method of Compliance[53] (September 28, 2010); (http://rgl.faa.gov);
- FAA Order 8100.15A, Organization Designation Authorization Procedures (June 10, 2011); (http://rgl.faa.gov);
- FAA Order 8110.37E, Designated Engineering Representative (DER) Handbook (March 30, 2011); (http://rgl.faa.gov);
- FAA Airworthiness Directives Manual, FAA–IR–M–8040.1C (May 17, 2010); (http://rgl.faa.gov);
- AC 39–9, Airworthiness Directives Management Process (June 1, 2011); (http://rgl.faa.gov);
- Draft AC 20–xxx, Design Approval Holder Best Practices with Regards to Airworthiness Directives (June 13, 2011); (http://rgl.faa.gov);
- Notice N8100.112, Placing Service Information in the Federal Docket Management System (September 28, 2010); (http://rgl.faa.gov);

[53] In addition, the FAA issued FAA Order 8110.103A, CHG 1 on June 30, 2011.

- ATA Specification 111, Airworthiness Concern Coordination Process (October 2011); (http://www.airlines.org); and
- ATA iSpec 2200, Information Standards for Aviation Maintenance (May 2011); (http://www.airlines.org).