

**SUMMARY SHEET**  
**Airworthiness Directive Implementation Aviation Rulemaking Committee**  
*[AD Implementation Working Group - SG-3]*

<b>Primary Report and Recommendation</b>	#7 - AD Compliance Review Team (Task 1), Findings 2 and 4, Recommendation 3: (B1 and B4)
<b>Secondary Report and Recommendation</b>	None
<b>Assigned Members</b>	Craig Amadeo (DAL) Ken Filippelli (AIR) Russell Reed (AirTran) Jeff Hodowanic (AirTran) Kawehi Lum (FAA) Nick Pearson (FAA)
<b>Links to Other Working Groups</b>	Service Information Working Group
<b>Date to Sent to ARC</b>	12/7/2010
<b>Date of ARC Approval</b>	2/16/2011

**WORKING GROUP REVIEW OF ISSUE/PROBLEM**

Task 1, Recommendation 3, Bullet 1:

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 airline 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 prior to accomplishing the instruction on multiple aircraft.

Task 1, Recommendation 3, Bullet 4:

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.

**REGULATIONS AND GUIDANCE IDENTIFIED FOR REVIEW**

- Element Performance Inspection (EPI) 1.3.6 (ATOS related)
- Safety Attribute Inspection (SAI) 1.3.6 (ATOS related)
- FAA Order 8900.1
- 14CFR39
- AC 43.13
- AC120-16E
- AC39-7C
- ATA Spec 111

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**WORKING GROUP PROPOSAL TO ADDRESS THE RECOMMENDATION(S)/FINDING(S)**

This work group proposes to draft documentation for incorporation into a new Advisory Circular (AC) that provides best practices for an air carrier's AD management process, including prototyping of air carrier AD implementation documentation and addressing work done prior to release of an AD.

During accomplishment of AD mandated work instructions, questions can arise due to errors in service instructions, differing airline processes, obsolescence of parts, and other challenges. This can lead to misinterpretation of the AD requirements, inconsistent accomplishments, and deviation for the original intent of the mandated instructions. By accomplishing a prototype of the AD compliance documentation, these issues can be identified and resolved prior to accomplishing the instructions on multiple aircraft. This is an actual prototype of the air carrier's implementation document. This resides outside of the ATA Spec 111 service instruction prototyping process. The ATA Spec 111 prototype may not capture all of the specific issues, concerns, or configurations that an air carrier may experience.

We will propose a process by which the air carrier will be able to prototype their AD compliance documentation on the first of their fleet to ensure the procedures are adequate for compliance with the AD. Any ambiguities, errors or lack of clarity would be corrected in the documentation.

Additionally, 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.

We will propose industry best practices in the new AC whereby a thorough review of work done prior to the issuance of an AD can be assessed to determine the suitability of the method of compliance or the possible need to request an Alternate Method of Compliance (AMOC).

It is expected that air carriers will incorporate these suggested best practices into their AD compliance planning process.

**ALTERNATIVES CONSIDERED**

The working group considered not accomplishing prototypes of AD documentation. However, without accomplishing a prototype of the work, it cannot be assured that the work can be performed as instructed. There also may be incorrect interpretations by the technicians that could lead to a non-compliance.

We also considered getting feedback from the technicians in lieu of a formal prototype. This method can be effective if there is a clear communication path for the technicians to provide their comments. However, having personnel on-site that can answer questions and resolve issues is considered a better method for ensuring accurate, consistent compliance and would likely

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expedite the aircraft return to service should issues arise.

**IMPLEMENTATION PLAN**

This working group proposes to develop industry best practices that incorporate language to identify an AD management process, including prototyping of air carrier AD implementation documentation. The document would also incorporate verbiage that provides best practices in handling service instructions that are accomplished prior to the existence of an Airworthiness Directive. It is expected that the suggested wording will be incorporated into a new FAA Advisory Circular for AD Management.

The working group recognizes that upon issuance of the proposed AC, the FAA will revise the Element Performance Inspection (EPI) and Safety Attribute Inspection (SAI) Data Collection Tools to include reference to the new AC for industry best practices. Revision of the EPI and SAI Data Collection Tools 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.

Individual implementation of the Advisory Circular requires resources and commitments for the individual carriers. The AD ARC has no authority to mandate the implementation of these best practices. However, the AD ARC should encourage timely process review and improvement at each carrier of their respective AD Management processes based upon the released Advisory Circular.

Implementation milestones:

- (1) New FAA Advisory Circular outlining best practices
  - AIWG submits draft language for new AC ..... 12/31/2010
  - AFS-300 publishes AC ..... 4/30/2011
  
- (2) ATOS revision to reference the new AC
  - ATOS releases rapid revision to add references to EPI and SAI.....5/6/2011
  - ATOS revises EPI and SAI.....6/30/2011
  
- (3) Air Carrier confirmation of implementation of best practices
  - AD ARC communicates need for industry to adopt best practices .....4/30/2011
  - AD ARC gathers data on implementation by operators .....6/30/2011

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**ASSUMPTIONS/CONSTRAINTS**

**ASSUMPTIONS:**

This implementation plan assumes that the Air Carrier has an organizational structure that supports a prototype process and supports reviews of compliance documentation.

This plan assumes that the AD and service information are made available to all affected parties. As used in this Summary Sheet, the prototype refers to the air carrier's method of compliance to any given AD.

**CONSTRAINTS**

It may be difficult to locate sufficient documentation details for work accomplished prior to an AD being released to determine acceptable level of compliance, and the work performed may not be suitable to physical verification as in the case of sealant types, hole sizes, surface preparation under paint, etc.

**ISSUES FOR WORKING GROUP CONSIDERATION**

None

**ISSUES FOR ARC CONSIDERATION**

None

**TASK 1, FINDING NO. 2 (SUPPORTING RECOMMENDATION 3)**

In the current method of writing SBs, the accomplishment instructions of an SB do not distinguish between instructions that satisfy the safety intent of the AD and instructions that merely serve to complete the overall work package. This contributed to unnecessary questions of compliance and requests for AMOCs.

AD 2006–15–15 (a class 2 AD as defined in this report) specifies wire bundle routing and modifications that were very prescriptive subsets of SWPM practices. As a result, it is possible that in subsequent maintenance, an air carrier or repair station maintenance technician could demodify some or all of the installation and render it noncompliant with the AD through the use of the standard practices defined in the SWPM, if he or she were unaware the wiring was an AD-required installation.

The Lead Airline Process contributed to the development of both SB revisions proposed in the rulemaking process culminating with AD 2006–15–15. However, the level of specificity of SB instructions addressed in that process did not in all cases match the level of detail that arose during the audit. In addition, not all of the differences in the configurations of the applicable airplanes were addressed during the Lead Airline Process. Consequently, the SB instructions did not prevent questions of compliance or installations that were noncompliant.

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Several air carriers implemented the SB before the AD was issued in some airplanes. At least one air carrier interviewed did not recognize the importance of the prescriptive criteria in the AD and did not revisit and reevaluate their earlier work for compliance with the prescriptive requirements in the AD.

**TASK 1, FINDING NO. 4 (SUPPORTING RECOMMENDATION 3)**

Most air carriers interviewed incorporated the SB before the AD was issued in some airplanes but did not apply a level of workmanship consistent with the prescriptive AD requirements. This contributed to unnecessary questions of compliance, requests for AMOCs, and noncompliant modifications.

**RECOMMENDATION NO. 3 – AIR CARRIER AD CONTROL PROCESS**

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.