Service Information Working Group

Primary Report and Recommendation	AD Compliance Review Team (Task 1), <u>Recommendation No. 3</u> : (T1, R3, B2) AD Compliance Review Team (Task 2), <u>Recommendation No. 1</u> : (T2, R1, B3)		
	Maintain Airworthiness – Production Versus In-Service Maintenance		
	AD Compliance Review Team (Task 2), <u>Recommendation No. 4</u> : (T2, R4, B1)		
Secondary Report and Recommendation	AD Compliance Review Team (Task 2), <u>Recommendation No. 4</u> : (T2, R4, B6)		
	AD Compliance Review Team (Task 2), <u>Recommendation No.</u> 11: (T2, R11)		
	AD Compliance Review Team (Task 2), <u>Recommendation No.</u> 12: (T2, R12)		
Assigned Members	(12, R12)Chip Amidon (Boeing) Doug Anderson (TAD)Drew Helder (America Ken Hurley (Bombard Bob McCabe (ACO)Ed Carter (Boeing) Serge Cheyrouze (Airbus)Bob McCabe (ACO) Kevin Miller (AEG)Paul Comeau (Southwest Airlines)Maureen Moreland (A Joe Nolan (Alaska Air Rose Opland (ANM) Ron Pekny (American Holly Thorson (ANM) Jim Ursitti (US Airway Joe White (ATA)		
Links to Other Working Groups	AD Development Working Group		
Links to other Working Groups	FAA Organization / Procedures Working Group		
Date to Sent to ARC	[Month] [XX], [20XX]		
Date of ARC Approval	[Month] [XX], [20XX]		

## WORKING GROUP REVIEW OF ISSUE/PROBLEM

On September 15, 2010, the AD Implementation ARC assigned a new task to the AD Development Working Group (ADWG) concerning maintenance of design changes that are required by 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 Service Information Working Group (SIWG) to work with the ADWG to create a method in which a mandated design configuration is maintained .

The issue concerning maintenance of mandatory design changes was identified during FAA Organization-Procedures Working Group (FAAWG) discussions concerning Recommendation 12, involving proposed revisions to 14 Code of Federal Regulations (CFR) sections 39.7 and 39.9. The FAAWG identified 2 main issues in their Summary Paper 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 14 CFR section 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.

Additional information on this issue can be located in the Summary Sheet for Recommendation 12, under the headings, "Design Changes In Production Aircraft versus In-Service Aircraft" and "Maintenance after Terminating Action ("Post-Modification Maintenance").

In the Summary Sheet for T2, R4, B1 (Effective and Efficient AD Development Process) 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 Airworthiness Limitations (AWL) that are needed to prevent previous AD compliance requirements from becoming undone or modified during normal maintenance activities or during airplane operation (note that the SIWG considered the process for identifying new AWLs).
- Allow the design change to be maintained using normal maintenance activities (i.e., acceptable methods, techniques, and practices) where such maintenance has been analyzed and shown to prevent previous AD compliance requirements from becoming undone or modified or, where necessary, new airworthiness limitations have been developed to preclude such reintroduction.

New AD text to address these issues was proposed and is included in Appendix A of the Summary Sheet for T2, R4, B1 (Effective and Efficient AD Development Process). This proposal depends on the development of new AWLs to protect safety critical configurations that are mandated by AD. The new AWLs will supplement 14 CFR part 25 Appendix H, *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 will 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 FAAWG Issue 1 described above.

FAAWG Issue 2 described above is addressed by the proposed new maintenance sections in Options 1 and 2 of Appendix A of the Summary Sheet for T2, R4, B1 (Effective and Efficient AD Development Process).

It is the understanding of the SIWG that since the regulation that requires a DAH to provide Airworthiness Limitations for structural inspection procedures approved under 14 CFR section 25.571 and critical design configuration control limitations approved under section 25.981 for the fuel tank system, creation of new AWLs outside the scope of sections 25.571 and 25.981 would be voluntary.

The DAHs included in the Working Group 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 Instructions for Continued Airworthiness (ICAs). Therefore, it was felt by some members of the Working Group that those ICAs should be sufficient for maintaining the design configuration.

To support the solution proposed by the ADWG the Service Information Working Group (SIWG) was assigned 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 DAH 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

## **REGULATIONS AND GUIDANCE IDENTIFIED FOR REVIEW**

14 CFR section 21.50 – Instructions for continued airworthiness and manufacturer's maintenance manuals having airworthiness limitations sections

14 CFR section 21.99 - Required design changes

- 14 CFR part 25 Appendix H Instructions for Continued Airworthiness
- 14 CFR part 39 Airworthiness Directives

14 CFR part 43 - Maintenance, Preventative Maintenance, Rebuilding, and Alteration

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

The SIWG agrees with the proposal to have the AD include text to identify existing AWLs that are within the scope of paragraph H25.4 of 14 CFR part 25 Appendix H. If an AWL exists or is specifically created for a design change, that AWL should be identified in an AD and a statement should be included in the AD to have air carriers incorporate the AWL into their maintenance program.

However, the SIWG could not come to an agreement regarding the creation and use of AWLs outside of the requirements of part 25 Appendix H to protect safety critical configurations from changes to designs through maintenance activities or airplane operation.

Some Working Group members felt strongly that identifying the critical components of the design change and creating new AWLs to inspect and maintain those critical components would result in the reduction of AMOC requests by allowing standard maintenance practices to be used to maintain the non-critical components of the design.

Other Working Group members felt that compliance to existing regulations, and air carriers' internal processes for maintaining an airplane configuration, provided an acceptable level of safety.

It was felt by some Working Group members that creating new AWLs beyond the requirements of part 25 Appendix H to maintain a design change would increase the number of AMOC requests if an air carrier or maintenance provider chose to maintain the configuration using a different method that what is defined in the AWL.

The concept of creating AWLs would require the DAH identify the detailed critical elements of the design change in a service bulletin, and identify the steps necessary to address those critical elements as Required for Compliance (RC). However, in the Summary Sheet for T2, R1, B1 (Critical Task Differentiation) the DAHs have stated they will not identify the critical elements at the detailed level. Therefore, it was felt by some members of the Working Group that it will be difficult to create AWLs if the detailed critical elements are not identified in the SB.

There were also varying opinions on what would be considered out of compliance if AWLs were required by an AD. Some examples of situations that were debated follow:

- 1. Situation 1:
  - a. Modification was accomplished.
  - b. AWL (ALI) inspection is being accomplished as required.
  - c. Configuration was found to be incorrect between inspections.

NOTE: For the above situation, there was concern among airlines that they would be found out of compliance even though the modification was properly accomplished and the requirements of the AWI were followed.

- 2. Situation 2:
  - a. Modification was accomplished.
  - b. AWL (ALI) inspection is NOT being accomplished or being accomplished incorrectly.
  - c. Configuration was found to be correct.

NOTE: For the above situation, there was concern that if the ALI is not being followed (incorrect interval, etc.), but the configuration is still correct per the requirement, the airplane would be in violation of the AD requirements.

- 3. Situation 3:
  - a. Modification was accomplished.
  - b. AWL (CDCCL) maintenance requirement is accomplished as required.
  - c. Configuration was found to be incorrect between maintenance tasks in an area.

NOTE: For the above situation, there was concern among airlines that they would be found out of compliance even though the modification was properly accomplished and the requirements of the CDCCL were followed.

- 4. Situation 4:
  - a. Modification was accomplished.
  - b. AWL (CDCCL) maintenance requirement is NOT being accomplished or being accomplished incorrectly.
  - c. Configuration was found to be correct.

NOTE: For the above situation, there was concern that if the CDCCL is not being followed, but the configuration is still correct per the requirement, the airplane would be in violation of the AD requirement

The reason this ARC committee was formed is to simplify the AD process and provide flexibility for operators while ensuring safety. Discussions arose with the situations above as to the amount of flexibility to allow while trying to establish compliance criteria. The point was also made by some airline representatives that adding mandatory follow on repetitive inspection requirements

or adding maintenance limitations to an AD while still also requiring constant configuration between inspections adds requirements and complexity rather than allowing flexibility.

To prevent additional maintenance by the operator with marginal benefit, it was also discussed to not address maintaining the required configuration in the AD itself, but instead keep maintaining the AD configuration by having operators use their own internal processes.

The SIWG looked at a sample of 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 review included review of the AD and related SB and a discussion on whether an AWL would be needed. The analysis did not include use of specific criteria to determine the probability or risk of the previous AD compliance requirements from becoming undone or modified after the initial corrective action was accomplished. Of the 10 ADs reviewed, it was determined that 8 of the ADs reviewed would require some sort of AWL to prevent the previous AD compliance requirements from becoming normal maintenance activities or airplane operation.

The proposal in the Summary Sheet for T2, R4, B1 (Effective and Efficient AD Development Process) consists of the DAH creating an AWL when necessary to prevent previous AD compliance requirements from becoming undone or modified during normal maintenance activities or during airplane operation. The DAH would then notify the applicable regulatory authority of the AWL created. The regulatory authority would then include text in the AD to address maintenance of design changes required by ADs. For these types of ADs, the new AD text would have:

- Required any new Airworthiness Limitations (AWL) that are needed to prevent previous AD compliance requirements from becoming undone or modified during normal maintenance activities or during airplane operation, and
- Allowed the design change to be maintained using normal maintenance activities (i.e., acceptable methods, techniques, and practices).

The new AWLs would have applied to airplanes that incorporated the design change in production as well as airplanes that incorporated the design change in-service through AD compliance.

Unfortunately, as stated earlier in this section, the SIWG could not come to an agreement regarding the expansion of AWLs outside of the requirements of part 25 Appendix H to protect safety critical configurations from changes to designs through maintenance activities or airplane operation. Therefore, the concept and process to create AWLs outside the requirements of part 25 Appendix H to prevent previous AD compliance requirements from becoming undone or modified during normal maintenance activities or airplane operation as proposed in the

Summary Sheet for T2, R4, B1 (Effective and Efficient AD Development Process) could not be supported by all members of the SIWG.

# **ALTERNATIVES CONSIDERED**

The SIWG did consider numerous alternatives. The Pros and Cons for each proposed alternative was discussed. The proposed alternatives include:

Alternative #1 - Create an AWL type of requirement to maintain the critical configuration. The AD would then refer to the AWL to ensure the critical configuration is maintained. This proposal was not accepted since some members of the SIWG felt it could potentially result in additional maintenance requirements mandated by the FAA and could potentially result in additional AMOC requests if an air carrier or maintenance provider chose to accomplish the task using a different method than what is defined in the AWL. Other members of the Working Group believe that because the proposal by ADWG would allow part 43 maintenance as long as the AWLs are complied with, the proposal would be relieving relative to the strict requirement of § 39.7 to maintain the AD-mandated configuration.

Alternative #2 - Create a CDCCL type of requirement to maintain the critical configuration. The AD would then refer to the AWL or CDCCL to ensure the critical configuration is maintained. This proposal was not accepted since some members of the SIWG felt it could potentially result in additional maintenance requirements mandated by the FAA and could potentially result in additional AMOC requests if an air carrier or maintenance provider chose to accomplish the task using a different method than what is defined in the CDCCL. Implementation of CDCCLs to support implementation of SFAR88 requirements has become very difficult for air carriers. Other members of the Working Group believe that, because the proposal by ADWG would allow part 43 maintenance as long as the AWLs are complied with, this proposal would be relieving relative to the strict requirement of § 39.7 to maintain the AD-mandated configuration.

Alternative #3 - Include a note in applicable procedure (AMM, SOPM, SWPM, CMM, etc.) referring to a CDCCL type task. This proposal would result in the configuration being properly maintained each time the applicable procedure is accomplished. One DAH already accomplishes the intent of the proposal. While revising ICA as part of a design change is a requirement of 14 CFR section 25.1529, it is not a requirement to include a note in the applicable procedure to refer to a CDCCL type task. Therefore, not all DAHs agreed to implement this proposal of adding a note to the applicable procedure

Alternative #4 - Include a statement in the AD instructing operators to update manuals to reflect the configuration change. This proposal would require than an air carrier update their applicable documentation to include configuration information. This would result in the mechanic knowing what the configuration must look like when maintenance is complete. However, it was determined it would be difficult for an airline to show compliance and for the FAA inspector to determine compliance.

Alternative #5 - The design must not allow the configuration to become undone. The SIWG agreed that failsafe features should be designed into the aircraft to prevent maintenance from undoing a configuration. This would prevent the need to accomplish follow on inspections or maintenance to ensure the configuration is properly maintained. However, the SIWG agreed that it is not possible to design in failsafe features for every aspect of every design to prevent the configuration from becoming undone.

Alternative #6 - Use a Maintenance Alert Process to define maintenance requirements – This process was previously used by one DAH. However, the SIWG felt that adding another document or process for identifying required maintenance actions in addition to existing processes would not be enforceable or beneficial.

Alternative #7 - Use a risk analysis to determine the possibility and consequences of previous AD compliance requirements from becoming undone or modified during routine maintenance – The group felt the creation of quantitative criteria to determine the risk of previous AD compliance requirements from becoming undone would be difficult to create. It was also determined that there was little merit in identifying risk as low, medium, or high since even low risk items should be resolved to prevent previous AD compliance requirements from becoming undone or modified.

Alternative #8 - Include tasks in existing service documents to cover items not already in those documents – The SIWG felt that requiring an air carrier or maintenance provider to use the added tasks would not be enforceable unless the tasks were referenced in the AD, especially if there were multiple options for accomplishing the task.. It was also determined that it would be difficult to define which tasks must be placed in existing service documents.

Alternative #9 - Separate existing service documents into sections (i.e., one section for overall standard practices and one section for standard practices in unique areas). – This would result in significant changes to the format and content of existing service documents. There was also concern that some manuals such as the Standard Wiring Practices Manuals are not FAA approved and therefore can be changed by the DAH at any time without FAA review and approval. It was also felt that often the manuals are not always used when performing standard maintenance.

Alternative #10 - Make sure AWLs are written precisely to reduce the need for AMOCs – It was felt that standardizing the format and content for AWLs would reduce the need for AMOC requests. However, it was noted that AWLs are typically included in one document and the document requires FAA review and approval each time an AWL is added or changed. This would result in additional workload for the FAA-ACO in reviewing and approving the document each time an AWL is added or changed. This solution would also potentially result in additional AMOC requests if an air carrier or maintenance provider wanted to accomplish a task using a method than what is identified in the AWL.

Alternative #11 - Include text in an AD to require air carriers or maintenance providers to discard or destroy old parts from their stock – The FAA already has this type of process in place.

However, there are some issues related to this concept. This concept does not result in parts being removed from stock for non-us registered aircraft. Also, the FAA must be very specific when identifying which parts must be discarded and under what circumstances.

#### IMPLEMENTATION PLAN

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

#### **Assumptions/Constraints**

It was assumed that DAH's currently have a formal method of notifying the regulatory authority of new AWLs. It was also assumed that regulatory authorities occasionally include text in an AD to inform air carriers of AWLs and require the air carrier to incorporate the AWL into their maintenance program. It was assumed that these practices would continue to be used for additional AWLs.

#### **ISSUES FOR WORKING GROUP CONSIDERATION**

The proposal in this Summary Sheet supports the proposal in the Summary Sheet for T2, R4, B1 (Efficient and Effective AD Process). However this Summary Sheet only supports referring to AWLs that meet the requirements of 14 CFR part 25 Appendix H. This Summary Sheet does not support the proposal to expand the creation of AWLs outside the scope of part 25 Appendix H to prevent previous AD compliance requirements from becoming undone or modified during normal maintenance activities or airplane operation. As a result of not expanding the use of AWLs for this purpose, operators will continue to maintain their AD mandated changes in conformity with the configuration defined by AD's.

In addition, it is the understanding of the SIWG that since 14 CFR part 25 Appendix H requires a DAH to provide Airworthiness Limitations only for structural inspection procedures approved under 14 CFR section 25.571, critical design configuration control limitations approved under section 25.981 for the fuel tank system, and replacement times of EWIS components approved under section 25.1701, creation of new AWLs outside the scope of 14 CFR sections 25.571, 25.981, and 25.1701 would be voluntary.

#### **ISSUES FOR ARC CONSIDERATION**

The proposal in this Summary Sheet supports the proposal in the Summary Sheet for T2, R4, B1 (Efficient and Effective AD Process). However this Summary Sheet only supports referring to

AWLs that meet the requirements of part 25 Appendix H. This Summary Sheet does not support the proposal to expand the creation of AWLs outside the scope of part 25 Appendix H to prevent previous AD compliance requirements from becoming undone or modified during normal maintenance activities or airplane operation. As a result of not expanding the use of AWLs for this purpose, operators will continue to maintain their AD mandated changes in conformity with the configuration defined by AD's.

It should be considered that some people believe AWLs should not be used to "standardize" the paradox in the maintenance of an AD installed in production and the same AD installed by retrofit. Since policies and practices have long allowed Part 43 maintenance of ADs installed during aircraft production, applying retrofit AWLs to production aircraft would complicate a contentious problem, not standardize a safety improvement.

In addition, it is the understanding of the SIWG that since 14 CFR part 25 Appendix H requires a DAH to provide Airworthiness Limitations only for structural inspection procedures approved under 14 CFR section 25.571, critical design configuration control limitations approved under section 25.981 for the fuel tank system, and replacement times of EWIS components approved under section25.1701, creation of new AWLs outside the scope of 14 CFR sections 25.571, 25.981, and 25.1701 would be voluntary.

The Summary Sheet for Effective and Efficient AD Process, Later-Approved Parts, and new AWLs/Maintenance proposes the development of new AWLs for AD related design changes outside the scope of 14 CFR part 25 Appendix H be done on a voluntary basis by DAHs. However, as stated in the Effective and Efficient AD Process Summary Sheet, there is a significant limitation to the potential value of this process if DAHs choose not to implement the voluntary process. Implementation on a voluntary basis could result in unpredictable and inconsistent use. If expanded use of AWLs outside the scope of 14 CFR part 25 Appendix H is necessary, consideration should be given to amending Appendix H through the rulemaking process.

## TASK 1 REPORT - FINDING NO. 2

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.

## TASK 2 REPORT - FINDING NO. 1

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 process will ensure air carrier's review proposed mitigating actions and make user-friendly inputs to draft OEM service instructions.

## TASK 1 REPORT RECOMMENDATION No. 2

Avoid drafting Class 2 SBs

## TASK 2 REPORT RECOMMENDATION No. 1

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

# **APPENDIXES**

Appendix 1. Sample of 10 SBs/ADs Reviewed

AD / SB	AD Actions	How to Maintain
2010-24-11 737-57A1279 R2	<ul> <li>Seal fasteners in main and center fuel tanks</li> <li>Do one time GVI of wire bundle supports         <ul> <li>Identify type of clamps installed</li> <li>Determine if Teflon sleeve is installed</li> <li>Do corrective actions (install correct clamps and install Teflon sleeving)</li> </ul> </li> </ul>	<ul> <li>If clamps were new, maintenance documents must be updated to provide guidance</li> <li>An evaluation should be done during the original design stage to evaluate (analysis) the need for repeat inspection</li> <li>The clamp configuration and wire sleeving could become undone</li> <li>The sealant is unlikely to be undone</li> <li>Add step to the AD to require airlines to update their documentation to show the new configuration</li> <li>AWL required for clamp, sleeving, and sealant</li> </ul>
2010-23-15 777-57-0063 R1	Remove and repair sealant	<ul> <li>One time inspection/application of sealant.</li> <li>Only a few airplanes affected (sealant improperly applied on those airplanes).</li> <li>No change to type design</li> <li>Part 43 maintenance is acceptable if risk of undoing is low</li> <li>However, how is this different from the previous AD (installation/maintenance of sealant)</li> </ul>
2010-22-01 767-54A0074 R1	<ul> <li>Inspect upper link fuse pins for cracking and corrosion</li> <li>Do corrective actions before further flight</li> <li>Repeat inspections or do termination action</li> </ul>	<ul> <li>Repeat inspections and terminating action are included in the AD.</li> <li>If the AD included a spares paragraph to say don't install the old part, then Part 43 maintenance is OK after terminating action is done.</li> </ul>

orking Group

2010-21-16 MD90-29A021 R2	<ul> <li>Modify auxiliary hydraulic power system         <ul> <li>Install new support brackets</li> <li>Install new wire harness</li> <li>Install clamps</li> </ul> </li> </ul>	<ul> <li>The existing SWPM allowed variation</li> <li>The SWPM should be updated to cover this configuration – Potentially have the SWPM provide more detail for this configuration/area. Possibly create a separate section of the SWPM (for standard practices in the tire burst area). to get more detailed</li> <li>An AWL was created to inspect and maintain the configuration</li> <li>Need to design in better configuration control</li> </ul>
2010-23-07 A320-55A1038 R1	<ul> <li>Do a vacuum loss inspection of the rudder reinforced area</li> <li>Do a laminate checker inspection of the rudder trailing edge</li> <li>Do a laminate checker inspection of other areas</li> <li>Do a vacuum loss inspection of other areas</li> <li>If problems found, contact Airbus for corrective action and do corrective action provided</li> </ul>	<ul> <li>Repeat inspections and terminating action are included in the AD. Therefore, those requirements and Part 43 maintenance is acceptable.</li> <li>QC/manufacturing problem? If yes, maintenance is ok</li> <li>If no chance for demod, then maintenance ok</li> </ul>
2010-26-01 777-78A0066R2	Install new insulation blankets	<ul> <li>Do we trust that insulation blankets do not become undone or must we periodically inspect them?</li> <li>Include text in AD to say update applicable manuals for config control</li> <li>Old blankets must be destroyed – include this wording in AD – purged from stock? Maybe include spares paragraph to prohibit installation of parts after a specific date</li> <li>Since it is on TR, may be potential to demod? Rotables? To be addressed in AD – broad applicability</li> </ul>
2010-24-13 747-28A2288 R1	<ul> <li>Add mounting bracket (if not already installed) and two indicator lights on the P10 panel</li> <li>Replace switches on the M154 fuel control module</li> <li>Modify wiring to accommodate the new indicator lights and replaced switches</li> </ul>	<ul> <li>AWL already existing to confirm lights work</li> <li>Must update documents to show new/updated configuration</li> <li>Include spares paragraph to say old parts can not be installed after a specific date</li> </ul>

Service Information Working Group

2010-24-12 777-57A0050 R2 777-57A0051 777-57A0057 R1 777-57A0059	<ul> <li>Install Teflon sleeving under clamps and cap seal fasteners in fuel tanks</li> <li>Do a GVI to see if fasteners are cap sealed. Seal any fasteners that are not cap sealed.</li> </ul>	•	Existing CDCCL and SWPM provide guidance on installation of sleeving. Part 43 maintenance alone is not acceptable. One time installation of cap seals. Part 43 maintenance alone is not acceptable. Technical issue – is sleeving critical and can not be removed? The AD should reference the specific existing cdccl Where is cdccl called out? Don't duplicate it (don't call out in multiple ADs)
2010-24-07 A320-25A1555	<ul> <li>Do special detailed inspection of rack fittings for damage. Repeat the inspection</li> <li>Repair any damage found</li> <li>Accomplishment of SB A320-25-1557 R2 terminates the repeat inspections.</li> </ul>	•	Repeat inspections and terminating action included in the AD. Include statement in AD to update config documents (doesn't work for structures mod) and lock configuration in place – need limitation (CDCCL)
2010-22-06 A330-28-3111 R2	<ul> <li>Replace pressure switches in wing tank</li> </ul>	•	AD should have stated (in spares paragraph) that old pressure switches could no longer be installed. If that requirement had been included in the AD, that requirement should be sufficient. Include statement to update config doc

Suggestion	Pros	Cons
Create an AWL (or something similar) and have AD call out the AWL	<ul> <li>Easy for the FAA to refer to</li> <li>DAH's have existing processes to create AWLs</li> <li>AMOCs would be needed only if deviating from the critical element, not the entire AD</li> </ul>	<ul> <li>Could result in many maintenance tasks mandated by ADs</li> <li>Could be difficult for DAH to implement (How can DAH anticipate what an airline might do during maintenance</li> <li>Could result in many AMOC requests (if airline wants to do something different) (AWLs currently result in many AMOC requests) – if tasks said go out and look</li> <li>AWL process issued for production</li> <li>Airlines already have processes in place to make sure AD config is maintained</li> </ul>
Use CDCCL process	<ul> <li>Could use lessons learned from SFAR</li> <li>More customer input during development would help</li> </ul>	<ul> <li>Much difficulty in implementation for SFAR 88</li> <li>Flagging in AMM is poorly done today</li> </ul>
Include a note in applicable procedure (AMM, SOPM, SWPM, CMM, etc.) referring to CDCCL type task – already being done – putting the note in the AMM is not a requirement, done by Boeing voluntarily -	Would result in the configuration being done proper each time the procedure is accomplished	<ul> <li>Would make the procedure in a non-approve manual mandated by FAA</li> <li>Would require the procedure to be FAA approved if changed</li> <li>Not all airlines use our manuals</li> <li>Manuals not mandatory – therefore not a viable solution</li> <li>Operators should not rely on DAH to do this</li> </ul>
Include a statement in the AD to update manuals to reflect the configuration change	<ul> <li>An indirect effect of (FAR 39.7)</li> <li>Updating the airlines documents would result in mechanic knowing what the config must look like when maintenance is</li> </ul>	<ul> <li>The statement in the AD would have to be generic</li> <li>Would be burden to inspector and airline to show compliance has been met</li> </ul>

Appendix 2.	Pros and	Cons for	Alternatives	Considered
-------------	----------	----------	--------------	------------

Service Information Working Group

	finished	
The design must not allow the configuration to be un-done	<ul> <li>Would prevent the need for follow on action</li> <li>Designers should consider</li> </ul>	<ul> <li>Not realistic to be 100%</li> <li>May not prohibit the issue</li> <li>Increase cost and manbours</li> </ul>
Use the Maintenance Alert process – dah produced or airline produced Look at design during different stages to look at possibility of becoming undone	<ul> <li>Quick and easy method</li> <li>Good for short term</li> <li>Gets to right people</li> <li>May help identify limitation</li> </ul>	<ul> <li>Informational only – not enforceable</li> <li>May get lost over the years</li> <li>No staying power</li> </ul>
Use risk analysis to determine the possibility of re-introducing unsafe condition	Would be consistent with criteria created by AD Implementation group	<ul> <li>Difficult to define quantitative criteria – low, med, high risk</li> <li>Qualitative criteria would be subjective</li> <li>Even low risk items should be addressed – would not prevent problems</li> </ul>
Include tasks in SRM to cover things like sealant over fasteners (items not already in other manuals)	<ul> <li>Allowance provided for alternates</li> </ul>	<ul> <li>Not enforceable unless mandated in an ad – what if there were multiple option</li> <li>Difficulty in defining what should be included</li> </ul>
Separate the SWPM into separate sections – one section for overall standard practices – another for standard practices in unique areas (tire burst area)	•	<ul> <li>Significant change to format and content of SWPM.</li> <li>SWPM is not FAA approved and can be changed at any time.</li> <li>Mechanics don't always use manuals to perform tasks</li> </ul>
Make sure AWLs are written well to reduce the need for AMOCs – use template for consistency	<ul> <li>Standardize format and content of AWLs</li> <li>AWL entered one time in document</li> <li>If written well will allow sufficient flexibility to reduce need for AMOCs</li> </ul>	<ul> <li>If put in existing docs (MPD Section 9 and SCI Document), would require ACO review and approval each time the doc is updated – extensive routing and approval – additional workload for ACO</li> <li>If airline deviated from AWL an AMOC would be required</li> </ul>
Include text in the AD to tell operators to discard/destroy	<ul> <li>Would result in old parts no longer being installed</li> <li>May be necessary in some</li> </ul>	What about using part on non- us registered airplanes or other models

old parts and purge old parts	unique cases. FAA already	• Ad should very specific on when
from their stock	has process in place and	to discard parts what
	text in ADs to do this.	circumstances