

SUMMARY SHEET — Delegation
Airworthiness Directive Implementation Aviation Rulemaking Committee
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Primary Report and Recommendation	Delegation AD Compliance Review Team (Task 2), Recommendation No. 8 : (T2, R8, B1, SB4, & 5)
Secondary Report and Recommendation	None.
Assigned Members	Steve Edgar (AIR) (POC) Rob Romero (AIR) Steve Fox (AIR) Tim Holt (AFS) Ed Walton (UPS)
Links to Other Working Groups	None
Date to Sent to ARC	7/12/10
Date of ARC Approval	3/9/11

WORKING GROUP REVIEW OF ISSUE/PROBLEM

The ARC recommendation included:

- 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.

The first issue was thoroughly studied by a chartered team within the FAA (included as Appendix A to this Summary Sheet). This team's final 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 data¹ indicate that there were only a couple projects where such expanded delegation could have been applied during the 6 month study. At the same time, the group did identify that there are certain additional types of structural AMOCs that can be delegated.

The second issue was studied by the sub-team within the context of the AD ARC activity. The team carefully balanced the need for further delegation of AMOCs as compared to the need for consistency and standardization of results. The team's recommendation is noted below.

REGULATIONS AND GUIDANCE IDENTIFIED FOR REVIEW

The following guidance was reviewed or possibly impacted by the issue:

1. FAA Order 8040.1C, Airworthiness Directives
 - a. Applies to AD, but no guidance on AMOCs

¹ Available data studied consisted of delegated AMOC approvals and represented Transport Airplanes and Air Carriers which utilize 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.

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2. FAA-IR-M-8040.1B, Airworthiness Directives Manual (Current Revision)
 - a. No guidance on AMOC delegation
3. FAA-IR-M-8040.1C, Airworthiness Directives Manual (Draft Revision)
 - a. Paragraph 8-12 deals with AMOCs as they relate to Revision and Supercedure ADs (i.e., will previously issued AMOCs be acceptable for the new AD?)
 - b. No guidance on AMOC delegation
4. FAA Order 8110.37D, DER Handbook (Currently under revision)
 - a. 2-6a(5) – Delegating to a DAH structural DER
 - b. 2-7c(6) - The delegation must be only for the defined deviations to ADs for repairs, modifications or alterations to a single aircraft. A company DER must not approve the same AMOC for multiple aircraft. An AMOC related to the following items may not be delegated: adjustments to compliance times or inspection intervals, changes to airworthiness or operating limitations, alternate inspection methods, continued operation with unrepaired damage, and discretionary judgments of acceptability.
 - c. 4-8 – Specifics of the approval process (what the DER must do and list on the 8110-3)
 - d. Appendix 3, figure 4 – Example of information that must be included on 8110-3
5. FAA Order 8110.103, Alternative Methods of Compliance (Currently under revision)
 - a. 6b – Approval authority
 - b. 10 – Delegated AMOCs – which ones, who, and terminating delegated authority
6. FAA Order 8100.15, Organization Delegation Authorization (Currently under revision)
 - a. 8-11 – Authority to Approve AMOCs for a TC ODA and associated responsibilities
7. FAA Advisory Circular 39-7C (Currently under revision)
 - a. 11/12 – Both paragraphs deal with AMOCs, but not AMOC delegation.

The sub-team's review indicated that the noted sections of the following documents need to be updated:

- 8100.15 for Organizational Designation Authorization (ODA) Chapter 8, Sections 11 and 12.
- 8110.37D, Designated Engineering Representative (DER) Handbook. Chapter 2, Section 2-6, paragraph a.(4) and Section 2-7 paragraph c (6), Section 3-2 paragraph b(4), and Appendix C.
- In addition, changes to order 8110.103 need to be issued to allow for delegation of approval of global AMOCs as noted below.

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

The Delegation Sub-Team reviewed the FAA AMOC Team's report and, based largely on the information it conveys, recommends the following:

Expand AMOC delegation to allow two additional types of structural single airplane AMOCs to design approval holder designees:

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- 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 14 CFR paragraph 25.571 Amendment 45 or later.
- The approval of AMOC structural deviations to structural designees for ADs issued by any ACO branch (i.e., including Cabin Safety, 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 [i.e. 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.

At this time, the sub-team does not recommend any further delegation of AMOCs from issuing ACOs to other ACO's. Delegation of AMOCs to other ACOs, beyond what is currently contemplated in the Order, is not an effective or efficient AMOC delegation strategy because other ACOs do not have the data or analysis related to the Continuing 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.

In addition to Delegation AD Compliance Review Team (Task 2), [Recommendation No. 8](#): (T2, R8, B1, SB4, & 5), the Delegation Sub-Team explored the possibility of delegating global AMOCs. As noted in Appendix A, AMOC delegation for fleets or large groupings of airplanes are not currently allowed. The ACO is in the best position to make decisions related to fleet-wide AMOCs, which include full coordination with the cognizant FAA Flight Standards Certificate Management Office or the Aircraft Evaluation Group. However, the sub-team has determined that there may be procedures by which such AMOCs can be responsibly delegated. Therefore, the sub-team proposes to develop processes to expand the delegation of approval of Global AMOCs in two areas:

- Delegate approval of global AMOCs correcting typographical errors in Service Bulletins, to the issuing ODA holder and
- Delegate approval of global AMOCs within the expanded boundaries of delegation discussed above.

ALTERNATIVES CONSIDERED

None

IMPLEMENTATION PLAN

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In many cases, the team discovered that, while not explicitly addressed in existing guidance, the noted delegation of structural single airplane AMOCs to design approval holder designees is already occurring on a case-by-case basis.

The team considers that the updating and distribution of the three noted documents will provide sufficient guidance to facilitate a more widespread usage of such delegation.

No further action will be necessary for usage of such delegation to take root.

ASSUMPTIONS/CONSTRAINTS

The team assumes that all FAA personnel are bound, and in fact are operating in accordance with FAA Orders and other formal written guidance.

ISSUES FOR WORKING GROUP CONSIDERATION

None

ISSUES FOR ARC CONSIDERATION

None

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APPENDIXES

June 2, 2010, Rev. I

FAA Internal AMOC Team Proposal to

AD ARC FAA Organization and Procedures Working Group

An FAA Team was formed prior to the publication of the AD CRT Phase 2 Report to explore potentials for further delegation of AMOCs. This report documents the conclusions and recommendations of this Team limited to AMOC delegation. Since delegation occurs after the determination that an AMOC is required, this report contains no aspects of compliance, reasons for an AMOC, or other aspects beyond AMOC delegation.

Related Recommendation:

AD CRT Phase 2 Report, Recommendation 8, Bullet 1, sub-bullets 4 and 5:

“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:*

- o *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.*
- o *Delegation of AMOCs to other ACOs.”*

Background of issue/problem:

Delegation of AMOCs was first established as the result of a 1995 Aviation Rulemaking Committee (ref: Federal Register Vol. 60, No. 13 4219) which led to the current FAA Orders.

Current FAA orders and policy permit the delegation of AMOC approvals to type certificate holder structural designees where the intent is to restore the airplane to its type certification basis or other known, defined, published standard for a single aircraft. Specific limitations to this authority are detailed in three FAA Orders. They are:

- Order 8110.103, Alternative Methods of Compliance (AMOC)
- Order 8110.37D, Designated Engineering Representative (DER) Handbook
- Order 8100.15 for Organizational Designation Authorization (ODA).

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Order 8110.103, Paragraph 10 details AMOC delegation policy. The policy allows Aircraft Certification Offices (ACOs) to authorize delegated organizations or structural DERs to approve AMOCs only for Airworthiness Directives (ADs) where the intent is to restore an airplane's structure to its type certification basis or other known, defined, and published standards.

Order 8110.37D, chapter 2, section 2-6, paragraph a.(5) also contains policy on delegation of AMOCs. It provides for the FAA to *"give a design approval holder's company structural DER the authority to approve AMOCs for specific structural ADs where the intent of the AD was to restore the airplane to its type certification basis or other known, defined, and published standards."*

Paragraph 2-7 c. (6) of the order further limits AMOC delegation to defined deviations to ADs for repairs, modifications or alterations to a *single* aircraft. These deviations predominately only affect changes in dimensions and materials. It also states that an AMOC related to the following items may *not* be delegated: adjustments to compliance times or inspection intervals, changes to airworthiness or operating limitations, alternate inspection methods, continued operation with unrepaired damage, and discretionary judgments of acceptability.

Current FAA Policy does not address areas delegation of AMOCs for ADs issued to address unsafe conditions in systems and equipment, propulsion, or cabin safety.

Proposal for AD Implementation ARC:

A review of current AD AMOC approvals by the Seattle and Los Angeles Aircraft Certification Offices (SACO and LAACO) was conducted to explore areas for potential delegation. Based on this review, we propose the following expansions:

1. Allow the AD-issuing ACO to delegate to authorized design approval holder's structures designees approval of alternative inspection methods, thresholds and intervals in cases where a new repair or modification results in the inability to accomplish the existing AD mandated inspection or necessitates a change in the inspection threshold or interval. The standard for these approvals would be 14 CFR paragraph 25.571 Amendment 45 or later.
2. Allow the AD-issuing ACO to delegate AMOC structural deviations to non-Airframe ADs to authorized design approval holder structures designees.
3. Utilize a delegation statement identical to those statements in many structural ADs [i.e. AD 2010-05-04 paragraph (h)(3)] in future ADs (AD Development).
4. Continue to delegate as new ADs are issued and designee staffing changes occur.

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This proposal is based on data from AMOCs approved for US registered Boeing airplanes by SACO and LAACO and on AMOC approvals delegated by these ACOs for a six month period. AMOCs that were approved by the ACOs were examined to identify areas of potential expansion of AMOC delegation as well as establish in what areas there is a need for further delegation. The data is tabulated in Appendix 1.

The review showed that 90% of all AMOCs for U.S. registered Boeing airplanes are currently delegated. AMOCs were categorized by engineering discipline, or ACO branch. AMOCs approved by branches other than Airframe comprised only 6% of the number of total AMOCs. The second largest number of retained AMOCs were for Propulsion ADs. Nearly all of these were for multiple airplane or fleet approvals

FAA regulations and policy limit DER authority to making findings of compliance to defined standards. Therefore, in order for an AMOC to be delegated, one must be able to make a finding of compliance to a known standard. This is done for the delegated structural AMOCs by utilizing the delegation only where it can be done by a finding of compliance to the certification basis, or the certification basis with the addition of a damage tolerance finding. For deviations to AD mandated repairs, this standard restores the airplane from a damaged condition. For deviations to mandatory modifications, delegation is based on finding compliance to the Certification Basis of the AD mandated new configuration.

Only AMOC approvals for single airplanes are currently delegated. Conversely, AMOC delegation for fleets (many airplanes operated by a single certificate holder) or large groupings of airplanes (known as “global” which have multiple certificate holders) are not delegated to allow the ACO to make decisions related to fleet-wide AMOCs in full coordination with the cognizant FAA Flight Standards Certificate Management Office, or the Aircraft Evaluation Group.

The data in Appendix 1 shows that there are further structural single airplane AMOCs that could be delegated. A review of the Boeing airplane AMOCs approved by the Airframe Branch found that of the 109 AMOCs that the ACO retained in the 6 month period, 11 were AMOCs that could have been delegated in accordance with existing policy. These were not delegated because either the AD was inadvertently not delegated, or designee staffing changes occurred. This situation has now been corrected, however routine reviews need to occur.

The Team found the existing AMOC delegation program defined by the Orders could be expanded to allow two other types of structural single airplane AMOCs to be delegated to design approval holder 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 14 CFR paragraph 25.571 Amendment 45 or later.

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- The approval of AMOC structural deviations to structural designees for ADs issued by any ACO branch (i.e., including Cabin Safety, Systems and Propulsion), using the existing structural delegation limitations. 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 review of the remaining AMOCs for ADs issued by ACO branches other than Airframe (Systems, Propulsion and Cabin Safety) found that very few AMOCs met the single airplane criteria for delegation. Table 2 shows that for the ACO retained AMOCs from Propulsion, Cabin Safety and Systems, 32% were for service information revisions (this number does not include service bulletins), 45% were for airline fleet approvals, and 13% were for changes to the compliance time. Appendix I, table 3 shows the results of the evaluation for potential AMOC delegation in other ACO branches. Only 10% of the non-Airframe AMOCs were for a single serial number airplane and only 3% had potential for delegation as a finding to a known standard. The majority of the non-Airframe AMOCs were discretionary determinations of acceptability and/or fleet approvals. The non-structures single airplane AMOCs with potential for delegation were then further reviewed to determine if they could be delegated as a finding of compliance to a known standard. There was difficulty defining the standard for the AMOC compliance finding for this already small number of AMOCs. The data indicates that at this time, there is no demonstrated need for delegation of AMOCs to non-Airframe ADs other than structural deviations.

At this time, delegation of AMOCs from the AD issuing ACO to other ACOs would not prudent or provide benefits in line with the intent of the ARC. In order to properly consider AMOCs, it is necessary to be familiar with the original airworthiness concern and the unsafe condition that prompted the AD, which often involves a new standard beyond the regulations defined in the Certificate Basis of the airplane. It is also necessary to be familiar with the history of previously requested AMOCs to the AD. The ACO considering the AMOC needs to be familiar with issues with fleet issues and must have open communication and coordination with the DAH engineers and the appropriate representatives from Flight Standards. We also believe this delegation would be contrary to the objective of consistency in finding No. 8.

Alternatives considered:

N/A

Implementation plan for proposal:

Request deviations to the Orders as necessary to allow this expansion until the orders can be revised.

Specifically FAA Orders that require revisions are:

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- 8100.15 for Organizational Designation Authorization (ODA) Chapter 8, Section 11.
- 8110.37D, Designated Engineering Representative (DER) Handbook. Chapter 2, Section 2-6, paragraph a.(5) and Section 2-7 paragraph c (6).
- 8110.103, Paragraph 10

Questions or items for consideration by ARC:

N/A

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Appendix 1: Boeing AMOC Data

In order to gain insight into what types of Boeing AMOCs are still retained by the ACO, and whether they can be further delegated, AMOC data was gathered for a 6 month period from 12/1/08 -5/31/09 as follows:

Table 1.

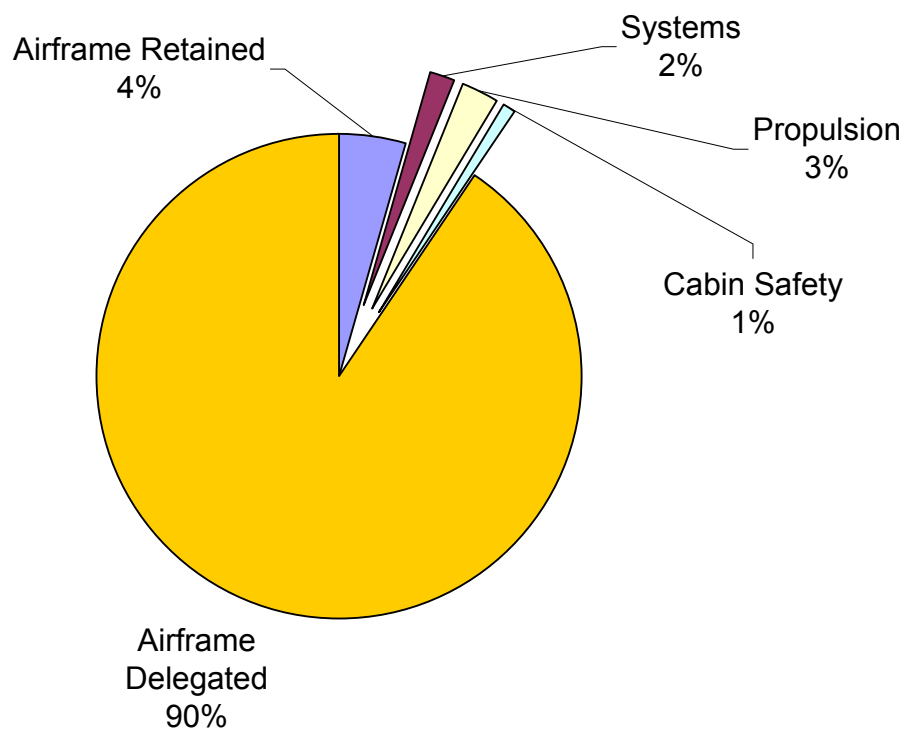
Number of AMOCs approved (Note: SB revisions, STC and Non U.S. Fleet not included)

Branch	ACO Retained AMOCs	Delegated AMOCs
Airframe (ANM-120)	109	2278
Elect. Systems (ANM-130)	42	0
Propulsion (ANM-140)	68	0
Cabin Safety (ANM-150)	20	0
Total all Branches	239	2278

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AMOCs by ACO Discipline

(Does not include SB,STC, or non U.S.)



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Table 2.

Categorization of AMOCs in Systems, Propulsion and Cabin Safety

Only a small number of the AMOCs that were approved by systems, propulsion and cabin safety within the 6 month period are for a single serial number airplane.

ACO Branch	1 Total Retained AMOCs	2 Service Information Revisions¹	3 Extension to compliance time	4 Airline Fleet	5 Single Serial Number Airplane
Systems (ANM-130)	42	11	6	22	3
Propulsion (ANM-140)	68	26	11	24	7
Cabin Safety (ANM-150)	20	5	0	12	3
Total 130, 140 and 150	130	42	17	58	13

¹These service information revisions are generally to correct errors in the documents. This number does not include service bulletins (SBs), only other service documents.

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Table 3

Potential for AMOC Delegation in Systems, Propulsion and Cabin Safety

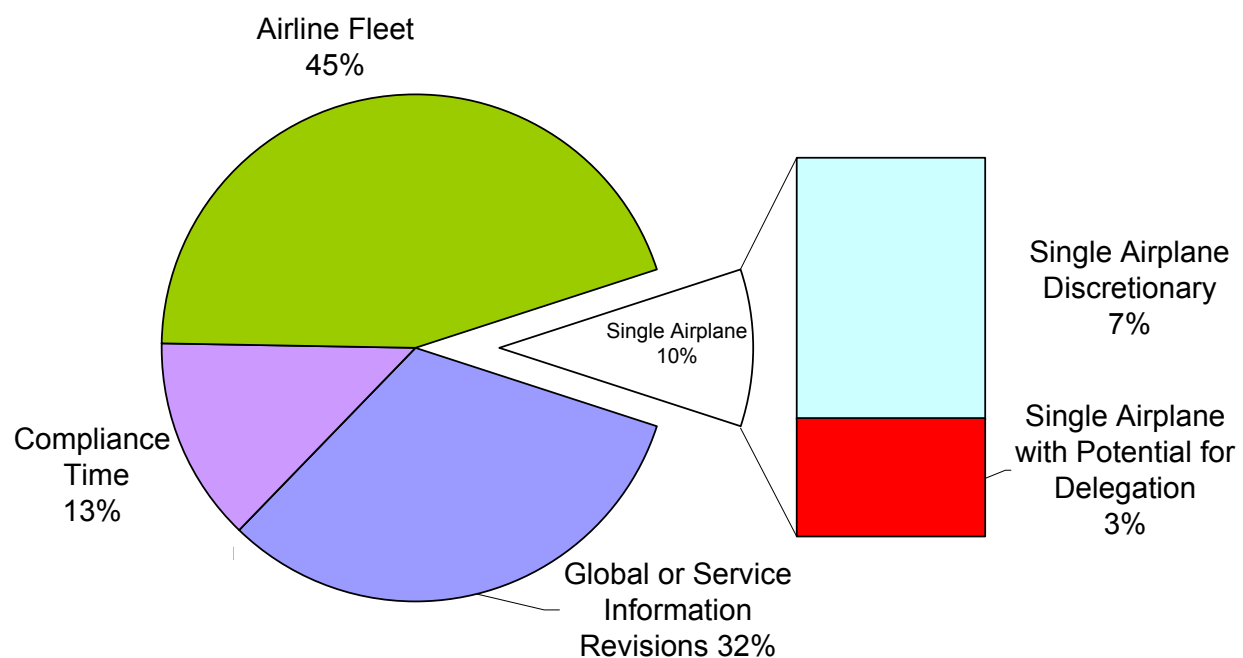
ACO Branch	1 Total Retained AMOCs	2 AMOCs for single serial number	3 Retained AMOCs that have potential for expanded delegation²
Systems	42	3	1
Propulsion	68	7	3
Cabin Safety	20	3	0
Total	130	13	4

²To meet the column 3 criteria for potential expanded delegation, the AMOC is for a single serial number airplane, has not already been delegated as a Table 4 structural deviation to non-Airframe AD and is a finding of compliance to a known standard.

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Systems, Propulsion, Cabin Safety AMOCs by Type

Does not include SB, STC, Non U.S.



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Table 4

Structural Deviations to non-Airframe ADs

ACO Branch	Structural deviation to Systems, Propulsion and Cabin Safety ADs³
Systems	2
Propulsion	4
Cabin Safety	2
Total	8

³ Although these single airplane AMOCs were to ADs issued by branches other than Airframe, they were for structural deviations. Although not currently allowed by policy, these AMOCs (8 total in the 6 month period) were delegated. The proposal would allow this delegation and would expand its use. Since these AMOCs have already been delegated, they are not included in the tabulation of ACO retained AMOCs (Table 2 and 3).