Federal Aviation Administration
Aviation Rulemaking Advisory Committee

Transport Airplane and Engine Issue Area
Alternative Methods of Compliance Working Group

Task 1 – Alternative Methods of Compliance

Task Assignment

Avaition Rulemaking Advisory Committee; Transport Airplane and Engine Issues

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of establishment of the Alternative Methods of Compliance (AMOC) Working Group.

SUMMARY: Notice is given of the establishment of the Alternative Methods of Compliance (AMOC) Working Group and a new task assigned to the Aviation Rulemaking Advisory Committee (ARAC). This notice informs the public of the activities of ARAC.

FOR FURTHER INFORMATION CONTACT: Stewart R. Miller, Manager, Transport Standards Staff, ANM–110, Transport Airplane Directorate, Federal Aviation Administration, 1601 Lind Avenue, SW., Renton, WA 98055–4056; telephone (206) 227–2190; fax (206) 227–1320.

SUPPLEMENTARY INFORMATION: The Federal Aviation Administration (FAA) has established an Aviation Rulemaking Advisory Committee (ARAC) (56 FR 2190, January 22, 1991; and 58 FR 9230, February 19, 1993). One area the ARAC deals with is transport airplane and engine issues. These issues involve the airworthiness standards for transport category airplanes and engines in 14 CFR parts 25, 33, and 35 and parallel provisions in 14 CFR parts 121 and 135.

Task

The Alternative Methods of Compliance (AMOC) Working Group is charged with the following task and making its recommendations to ARAC:

Develop industry and FAA methods for improving the timeliness of approvals for alternative methods of compliance with Airworthiness Directives (AD), while maintaining at least the same level of safety.

The objectives of the task are to evaluate the process for issuing alternative means of compliance (AMOC) and to develop recommendations for improving that process in order to accomplish the following:

(1) Improve the timeliness of the AMOC issuance;

(2) Maintain at least the same level of safety achieved under the existing process;

(3) Reduce the need for AMOC while maintaining legal enforceability of ADs;

(4) Standardize the process for issuing AMOCs throughout the FAA; and

(5) Accomplish the foregoing in a cost effective manner for industry and without increasing the need for FAA resources.

ARAC is forming the Alternative Methods of Compliance (AMOC) Working Group to analyze and recommend to its solutions to issues contained in the assigned task. If ARAC accepts the working group's recommendations, it forwards them to the FAA.

ARAC working groups are comprised of technical experts on the subject matter. A working group member need not necessarily be a representative of one of the member organizations of ARAC. An individual who has expertise in the subject matter and wishes to become a member of the working group should write the person listed under the caption **FOR FURTHER INFORMATION CONTACT** expressing that desire, describing his or her interest in the task, and the expertise he or she would bring to the working group. The request will be reviewed by the ARAC assistant chair, the working group leader, and the assistant executive director, and the individual will be advised whether or not the request can be accommodated.

Working Group Reports

Each working group formed to consider an ARAC task is expected to comply with the procedures adopted by ARAC and given to the working group chair. As part of the procedures, the working group is expected to:

A. Recommend a work plan for completion of the task, including rationale for consideration at the meeting of the ARAC to consider transport airplane and engine issues held following publication of this notice.

B. Give a detailed conceptual presentation on the task to the ARAC before proceeding with the task.

C. Give a status report on the task at each meeting of ARAC held to consider transport airplane and engine issues.

The Secretary of Transportation has determined that the formation and use of the ARAC are necessary in the public interest in connection with the performance of duties imposed on the FAA by law. Meetings of ARAC will be open to the public except as authorized by section 10(d) of the Federal Advisory Committee Act. Meetings of the Alternative Methods of Compliance (AMOC) Working Group will not be open to the public, except to the extent that individuals with an interest and expertise are selected to participate. No public announcement of working group meetings will be made.

Issued in Washington, DC, on January 13, 1995.

Chris A. Christie,

Executive Director, Aviation Rulemaking Advisory Committee.

[FR Doc. 95–1544 Filed 1–19–95; 8:45 am]

BILLING CODE 4910–13–M

Recommendation Letter

Gerald R. Mack
Director
Airplane Certification

Boeing Commercial Airplane Group
P.O. Box 3707, #MS 67-UM
Seattle, WA 98124-2207

March 5, 1996
B-T000-ARAC-96-002

Mr. Anthony J. Broderick (AVR-1)
Associate Administrator for Regulations and Compliance
Department of Transportation
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, DC 20591

BOEING

Dear Mr. Broderick:

On behalf of the Aviation Rulemaking Advisory committee, I am pleased to submit two documents on the following subjects:

Report No. SP4161LA-Q	Alternate Means of Compliance Issuance Improvements
Proposed NPRM	Revision of Gate Requirements for High-Lift Device Controls

These documents are enclosed in the form of a report and a proposed NPRM. The documents were developed by the Alternate Means of Compliance Working Group chaired by Dave Lotterer and the Flight Test Harmonization Working Group chaired by Jerry Zanatta. The membership of the groups are a good balance of interested parties in the US, Europe and Canada. The groups are currently focusing on other issues tasked to the Working Group but can be available if needed for docket review.

The members of ARAC appreciate the opportunity to participate in the FAA Rulemaking process and fully endorse these recommendations.

Sincerely,

G. R. Mack

Gerald R. Mack
Chairman
Transport Airplane & Engine Issues Group
Aviation Rulemaking Advisory Committee
Tele: (206) 234-9570, Fax: 237-4838

Enclosures

Acknowledgement Letter

U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

APR 11 1996

Mr. Gerald R. Mack
Aviation Rulemaking Advisory Committee
Boeing Commercial Airplane Group
P.O. Box 3707, M/S 67-UM
Seattle, WA 98124-2207

Dear Mr. Mack:

Thank you for your March 5 letter forwarding the Aviation Rulemaking Advisory Committee's (ARAC) report on "Alternate Means of Compliance Issuance Improvements." The report contains various recommendations regarding The Alternate Means of Compliance Process, Delegation, Service Bulletin/Airworthiness Directives, and Supplemental Structural Inspection Programs.

I would like to thank the aviation community, and particularly the Alternate Means of Compliance Working Group, for its commitment to ARAC and its interest in this matter. We pledge to consider your report and the recommendations it contains as a high-priority action.

Sincerely,

Anthony J. Broderick
Associate Administrator for
Regulation and Certification

Recommendation

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EXECUTIVE SUMMARY

Background

Every airworthiness directive (AD) issued by the FAA contains a provision that states that an alternative method of compliance (AMOC) or adjustment of compliance time that provides an acceptable level of safety may be used if approved by the manager of the FAA office responsible for the AD. In recent years, several operators have expressed concerns about the number of AMOC approvals that must be obtained and the process for obtaining them. Because of these concerns, the FAA assigned the following task to the Aviation Rulemaking Advisory Committee (ARAC), and chartered the AMOC working group(WG) to: "Develop industry and FAA methods for improving the timeliness of approvals for alternative methods of compliance with [AD's], while maintaining at least the same level of safety." The WG was asked to develop recommendations to accomplish the following:

1. Improve the timeliness of AMOC issuance;
2. Maintain at least the same level of safety achieved under the existing process;
3. Reduce the need for AMOC while maintaining legal enforceability of AD's;
4. Standardize the process for issuing AMOCs throughout the FAA, and
5. Accomplish the foregoing in a cost effective manner for industry and without increasing the need for FAA resources.

In order to properly identify existing problems, at the outset the WG solicited data from affected operators and FAA offices regarding the number of AMOC requests submitted, the subjects of the requests, the timeliness of the FAA's responses, and the causes of any delays. Based on these data, the WG concluded that the vast majority of AMOC requests are for airframe-related AD's. Of these, most requested deviations from AD-mandated repairs or modifications, followed by extensions of compliance times and alternative inspection methods.

In reviewing these data the WG concluded that possible improvements could be made in four general areas: (1) the AMOC process; (2) delegation of AMOC approval authority to certain structural Designated Engineering Representatives (DER's); (3) improvements in service bulletins and AD's to reduce the need for AMOC's, and (4) AD's relating to certain Supplemental Structural Inspection Programs (SSIP).

Recommendations:

The AMOC team has identified the following recommendations, which if implemented would increase the efficiency of current processes and reduce the volume of AMOC requests through the ACO's.

The AMOC Process

1) ATA/manufacturers should develop guidance material for operators on AMOC processes. The document should emphasize the following points:

- The need for written processes within each operator's organization to ensure consistent timely initiation of AMOC requests.

- The necessary information that must be included in a request (A checklist is provided in Appendix 4) .

- The advantages of coordination of AMOC requests with the Type Certificate Holder for the affected product prior to contacting the ACO's.

2) FAA should revise the AD manual to require that future AD's:

- Allow forwarding of the AMOC requests to the ACO and the PMI concurrently. This requires a change in the current language of the AMOC paragraph in the AD's.

- Include the language for allowing certain AMOC approvals by TCH's structural DER's.

- Include the language for a note stating the acceptability of previously approved AMOC's in superseded and revised AD's.

- Include guidance regarding the transferability of AMOC approvals.

3) FAA should develop guidance material for PMI's highlighting their role in supporting the ACO's in approval of various types of requests.

Delegation

1) The FAA should implement a new policy to authorize certain TCH structural DERs to approve on individual airplanes alternative configurations for AD required repairs and modifications where the FAA determines that the intent of the AD was to restore the airplane into compliance with the airplane type certification basis or other defined airworthiness standard.

2) The FAA should issue a Notice for use by the ACO's to address the delegation issues identified by the team. This Notice would address numerous implementation issues and limitations arising from this recommendation (A draft Notice has been developed by the team and is included in Appendix 2).

3) Regarding temporary repairs of components that are subject of an AD, the FAA ACO's should use the guidance developed by the team to determine whether AMOC approvals can be delegated to the TCH structural DER's.

4) The FAA should develop guidance material for PMI's regarding their role in light of the new policy delegating the AMOC approvals to TCH DER's. The team has developed this proposed guidance material (Appendix 3).

Service Bulletin/Airworthiness Directive Improvements

1) ATA should provide a more detailed checklist for ATA's "lead airline" process as a means of improving the quality of service bulletins referenced in AD's. The objective of this checklist is to stimulate discussions between the lead airline contact and the TCH in reviewing the technical content of service bulletins. The need for fewer AMOC's should result.

2) ATA should define the limits of the lead airline process so that its role in reducing the number of AMOCs is clearly understood. In reviewing an airworthiness concern in which the industry takes an opposing view of the FAA on whether an AD is necessary, the "lead airline" process should nonetheless provide a quality service bulletin in the event the FAA adopts an AD.

3) ATA should revise ATA Specification 100 so that the scope of the approved AMOC for service bulletin revisions is more clearly understood.

Supplemental Structural Inspection Programs

1) For SSIP AD's that require approval of repairs by the manager of the responsible ACO, the FAA should delegate approval of SSIP PSE repairs to the TCH structural DER's.

SECTION 1: INTRODUCTION

Background:

The FAA Act provides the FAA with the authority to publish regulations to correct unsafe conditions. When the FAA identifies an unsafe condition on a certificated product, an Airworthiness Directive (AD) is issued to correct the unsafe condition in accordance with 14 CFR Part 39. The unsafe condition may or may not result from the product's failure to comply with the applicable regulations defined in the Certification Basis. In fact, AD's occasionally impose safety requirements, beyond the scope of the product certification basis or current Federal Aviation Regulations (FAR's), that are determined to be necessary by the FAA's discretionary judgment.

Upon identification of an unsafe condition in a product, an intense joint effort involving the FAA and the Type Certificate Holder (TCH) is initiated to correct the unsafe condition. The corrective action may involve either inspections, modifications or other actions within a specified time period (compliance time). In most cases, a TCH issues a Service Bulletin (SB) which contains the required corrective action. The FAA Aircraft Certification Office (ACO) responsible for continued airworthiness of that product follows the TCH's action with the preparation of an AD mandating the accomplishment instructions contained in the SB. Issuance of an AD on a particular component heightens the awareness of the identified unsafe conditions, requiring special handling of all future repairs and modifications, which may interfere with the mandated corrective action and the continued safe operation.

When an operator of a product subject to an AD finds it necessary or desirable to deviate from the requirements of an AD, the operator is required to submit a request for approval of an alternative method of compliance (AMOC) in accordance with provisions contained within the AD. These deviations have typically included alternative inspection methods, repairs, modifications, and adjustment to the compliance times. Historically, AMOCs have been referred back to the ACO for approval. This was necessary because the Federal Aviation Administration (FAA) has previously not authorized Designated Engineering Representatives (DERs) to approve any deviations to Airworthiness Directives (ADs). This policy was based, in part, on section 314 (a) of the FAA Act of 1958 which provides for the Administrator to delegate to any properly qualified person any work, business, or function respecting (1) the examination, inspection, and testing necessary to the issuance of certificates under Title VI of the Act, and (2) the issuance of such certificates in accordance with standards established by the Administrator. Thus, while the Act allows the FAA to delegate to DERs the findings of compliance to known, defined, and published standards established by the FAA, such as 14 CFR Parts 23, 25, 27, 29, 33, and 36, leading to the issuance of certificates, the act does not permit the FAA to delegate discretionary determinations of acceptability, such as those involved in approving deviations from ADs.

A number of FAA/Industry initiatives such as those dealing with aging aircraft along with a growing number of in-service aircraft have resulted in a substantial increase in the

number of AMOC requests and a corresponding increased workload for the cognizant ACOs, TCHs, and operators. Many of these AMOCs have been for relatively minor deviations to mandated instructions.

In order to respond to the growing number of AMOCs without compromising safety and customer satisfaction, ACOs in conjunction with the TCHs' Designated Engineering Representatives (DER's) have developed various processes for review and approval of AMOC requests. Although those processes have been working well they are designed to address relatively minor deviations and are not sufficient in dealing with increasing number of AMOC requests.

In addition, the existing processes for an AMOC request and approval involve coordination and communication among the applicant, Principal Maintenance Inspector, ACO, and TCH. Within each of the offices involved, there exist additional coordination processes. There have been cases that have resulted in delays in the approval of an AMOC request due to the inefficiencies of the processes involved.

An FAA/Industry Working Group (hereafter referred to as the AMOC team) was formed to review existing processes and find ways to improve them. The AMOC team's objectives were as follows;

1) Improve the timeliness of issuance of AMOC approvals
2) Maintain the same level of safety under the existing system
3) Reduce the need for AMOC while maintaining legal enforceability of the ADs
4) Standardize the process for issuing AMOCs throughout the FAA
5) Accomplish the foregoing in a cost effective manner for industry, and without increasing the need of FAA resources

The AMOC team has completed the assigned tasks and has developed a series of recommendations, which if implemented will satisfy the objectives. The recommendations developed address various processes to provide more delegation to the TCHs with appropriate oversight and improved coordination during early development of SBs and ADs. This report, developed by the team, documents how the team reached consensus in formulation of the recommendations and provides detailed justification and supporting data for those recommendations.

AMOC Team Membership and Charter:

The initiative to form a team to improve issuance of AMOC approvals, was introduced by the FAA Aircraft Certification and Flight Standards Services management and supported by the Air Transport Association (ATA), Regional Airlines Association (RAA), Aerospace Industries Association (AIA).

In developing the AMOC team charter, attempts were made to ensure that the interested industry groups are represented on this team. In order to reflect the interests of all major stakeholders the following team composition was included in the team charter;

ATA airlines 2-3
RAA airlines 1
Aircraft Certification Offices 2
Flight Standards Services 2
Regional Counsel 1
AIA manufacturers.....1

In addition, two linking members to the oversight management team were also identified. The identification of the members was left up to the participating organizations.

In June of 1994, the AMOC team's charter was finalized and the team members were identified. The RAA elected not to participate and was satisfied with the representation of the ATA on the AMOC team. The AMOC team charter as originally defined is included in Appendix 1.

The first meeting of the AMOC team took place on August 2, 1994, at the ATA headquarters in Washington D.C. The entire team membership, including the linking members were present. During this meeting, concerns were raised by certain team members that the team charter may be in violation of the Federal Advisory Committee Act (FACA). Under FACA any team formed with the intent to make recommendations to a government agency must go through the process of notifying the public and provide the opportunity for all interested parties to attend the meetings. The team agreed to investigate the possibility of being chartered under the Aviation Rulemaking Advisory Committee (ARAC) to prevent potential complications which may occur during the implementation of the recommendations. Further, the team agreed to continue its work while certain members pursued the ARAC option. This in effect required opening the membership of the group and effectively altering the final composition.

During the September 7th and 8th meeting, the AMOC team was informed that the team will be chartered as an ARAC working group reporting to the Transport Airplane and Engine Issue Group (TAEIG). During this two-day meeting, the team drafted a letter outlining the objectives of the team which was used to officially request the formation of the team. On January 20, 1995, the team's charter was published in the Federal Register notifying the public of the formation of the team under ARAC and providing a description of the charter and the team's objectives. A copy of the published notice is included in Appendix 1.

The final membership of the AMOC team was as follows;

ATA airlines

Mr. David Lotterer, ATA (Working Group Chairman)
Mr. Donn Knight, United Parcel Services (UPS)
Mr. Gregg Delker, USAir
Mr. Paul Atwell, Northwest Airlines (NWA)

AIA manufacturers

Mr. Edgar Kupcis and Mr. Herb Lancaster, Boeing Company, Seattle, Washington.
Mr. Amos Hoggard, Douglas Aircraft Company, Long Beach, California.

FAA

Mr. Ali Bahrami, Los Angeles Aircraft Certification Office (LAACO), ANM-100L
Ms. Maureen Moreland, Airframe Branch, ANM-120L, LAACO
Mr. Steven Fox, Airframe Branch, ANM-120S, Seattle Aircraft Certification Office (SACO)
Mr. Tim Dulin, Standardization Branch, ANM-113, Transport Airplane Directorate
Mr. Douglas Anderson, Office of Assistant Chief Counsel, Northwest Mountain Region, ANM-7
Mr. George Soteropoulos, Technical Programs and Continued Airworthiness Branch, AIR-120
Mr. William Rau, Long Beach Aircraft Evaluation Group (LGB-AEG)
Mr. Lonnie Giles, Phoenix Certificate Management Office (PHX-CMO)

Organization of Report:

The remainder of this report documents the process and findings of the AMOC team. It is organized in five major sections;

Section 2: Team Process: This section briefly describes the process through which the AMOC team analyzed various issues and developed recommendations based on the results of the analyses.

Section 3: Classification of the AMOC Issues: The team identified a series of issues/problems. They were then categorized into four groups and were addressed collectively. This section describes the different categories and provides the foundations for the recommendations. Additionally, during the analysis of the AMOC requests, it

became evident that although temporary structural repairs are common, guidelines and their applications vary. As a result the team defined some specific guidelines for evaluation of the repairs of components that are subject of an AD. This section presents those guidelines which must be in place prior to delegation of AD related temporary repairs to the TCH structural DER's.

Section 4: Conclusions and Recommendations: The section of the report presents the AMOC team's conclusions and recommendations.

Section 5: Delegation Implementation Plan: The AMOC teams' recommendations in the delegation area, if implemented, introduce new processes and handling of the AMOC's approved by the TCHs' DERs. To ensure a smooth transition and facilitate implementation, the team has developed an implementation plan, which is included.

Appendices: There are four appendices which contain the AMOC team's charter, a draft Notice concerning expansion of TCH DER's authority to approve AMOC's, a guidance material concerning the PMI's role in light of the new delegation policy and an AMOC information request checklist, respectively.

SECTION 2: TEAM PROCESS

Overview of the AMOC Team's Approach:

The diverse organizational background of the AMOC team provided a wide spectrum of views and challenges. These differences were helpful in determining the type of approach needed in order to succeed in completion of the tasks.

During the kick off meeting, the team agreed that a clear and common understanding of the problems associated with the AMOC approval processes was needed prior to any attempt to resolve the problems. In the same meeting the team reviewed the charter and discussed all the assigned tasks. This assisted the team in reaching agreement on the use of the following approach;

1) COMMON UNDERSTANDING OF THE CHARTER AND THE AMOC PROCEDURE

   Data to support the charter
   Processes within organizations
   Evaluation of the steps within and their purpose
   Legal aspects
   Specific attention to Aircraft on the Ground potential

2) IDENTIFICATION OF BARRIERS TO TIMELY ISSUANCE OF AMOC APPROVALS

   Sources and reasons of delays
   Classification of AMOCs
   Pareto analysis "The Biggest Bang for the Buck"

3) IDENTIFICATION OF NEEDS FOR AND BARRIERS TO DELEGATION

   Legal aspects and enforceability
   Safety objectives
   Delegation to manufacturers
   Delegation to operators
   Delegation to Foreign Regulatory Authorities (Foreign products)

4) IDENTIFICATION OF QUALITIES AND CHARACTERISTICS OF POTENTIAL FUTURE PROCESSES

Target responses
Substantive requirements

5) IDENTIFICATION OF STEPS TO OVERCOME BARRIERS

Legal
Safety objectives

6) DEFINITION OF THE "NEW PROCESS" AND IMPLEMENTATION PLAN

Training (FAA, Industry)
Process Standardization
Performance measure

The above approach charted the team's course of action. As the team progressed toward a series of recommendations some of the steps were found to be redundant or unnecessary. Nevertheless, the team believes that the outlined approach provided a comprehensive road map toward the fulfillment of the assigned charter. During meetings this approach was re-visited to maintain the team's focus on the key issues.

Data Collection and Analysis:

A comprehensive study was conducted in order to develop an understanding by the team regarding the depth and range of the problems associated with AMOCs in general and the AMOC processes in particular. In order to determine whether the problems discussed were real or perceived, the team queried the ATA member airlines to describe their specific problems with the AMOC process. AMOC data from the ACO's was compiled and compared to the operator findings to give the team a perspective of the problems, from both the FAA and industry viewpoint.

A list of questions was provided to ATA member airlines and was designed to give the airlines the opportunity to raise all problems associated with the AMOC issues. The list of questions was:

1) How many AMOC have you requested in the past year?
2) How many were approved/rejected?
3) Do you have any specific problems with the AMOC process that can be cited by specific AD number?
4) What were general subject matters of your request?
    a) Error in service bulletin procedures
    b) Increase in inspection or time interval
    c) Request alternate inspection procedures
    d) Alternate test procedures
5) What improvements would you suggest?

The responses from 10 airlines are presented in Table 1. Northwest Airlines, AMOC team member, provided the same type of data except that the data reflected a three year time span and provided an average elapsed time for approval of various types of AMOC requests. The NWA data is presented in Figures 1 and 2. Later, this proved to be significant in the analysis of the data.

During the same time frame, the FAA ACO members also researched AMOC approval files within their respective offices and determined the total number of AMOC requests and their types. Figures 3 through 6 summarize the results of their research.

The total number of AMOCs reviewed and analyzed by the team was approximately 1300. Based on this review the following conclusions were reached;

1) The number of AMOC requests for airframe ADs are substantially higher than any other discipline. As a result the team agreed to focus on airframe AMOC requests.

2) Data indicated that the volume of AMOC requests for approval of deviations to mandated repairs and modifications far exceeds any other reason for AMOC request, followed by AMOC requests for extensions of compliance time and for alternative inspection methods.

3) There are considerable differences in the number of AMOC requests for repairs of Principal Structural Elements (PSE's) covered by the Supplemental Structural Inspection Program (SSIP). Variations in the manufacturers' developed programs and the differences in the language of the ADs have been identified as the reasons for this difference.

4) Data generated by NWA highlights both the number of requests and the elapsed time for approval. The presentation of the data in this fashion is helpful to focus on the problem areas.

After the review of the data and reaching the above conclusions, the team agreed to proceed with the data collection as was done by NWA but concentrate on the following four areas.

1) SSIP related repairs/follow on inspection program
2) Alternate repairs(non SSIP)/modifications
3) Alternate inspection/methods/tests
4) Time extensions.

Additionally, the team agreed to expand the time frame of AMOC survey from one year to 18 months. This was done in an attempt to use consistent time frames and collect more

data. Similar to the first time, both FAA and industry members initiated the research on the number of AMOCs in the four areas listed above and the elapsed time for approval.

In addition, ATA member airlines were requested to provide the following data;

1) Number of AMOC requests during the period of Jan. 1993, through June of 1994 (18 months period)

2) Number of requests within each of the above four categories.

3) Requested response time of requests; actual FAA response time for request.

The results of the investigation by the FAA members are included in Figures 7 through 11. In general, the data were consistent in that the longest approval periods were associated with the extensions and approval of alternate means of inspections. Both these areas require extensive research and coordination with the operators, Type Certificate Holder and the PMI's. Based on the comments received by the operators and data collected by the ATA and the ACO's it is evident that the majority of the operators are satisfied with the AMOC approval time. However, it is clear that there are some sporadic problems in insuring timely responses to AMOC requests, including coverage during off duty hours.

The team spent a considerable amount of time in obtaining input from customers and identifying problem areas. Using the process of data gathering described above, the team agreed that the four categories identified are the ones that if improved will yield the highest benefit to the FAA and its customers.

TABLE 1.

AMOC REQUEST SUMMARY

AIRLINE	REQUESTS	REJECTIONS	ALTERNATE			MAINT PROG INSPECTION ALIGNMENT	TERMINATING AD REPAIRS
			REPAIRS	INSPECT	TESTS		
US AIR	73	4	41	14	-	18	-
CO	61	1	40	9	-	11	-
DELTA	60	1	✓	-	-	-	-
UNITED	47	3	✓	✓	✓	✓	-
UPS	28	1	14	14	-	-	-
AAL	26	2	-	✓	✓	✓	-
TWA	25	2	✓	-	-	-	-
ALOHA	19+/-	-	3	-	-	3	13
ALASKA	8*	-	3	-	-	3	-
EIA	7	-	✓	-	-	-	-
TOTAL	351	14	101+	37+	✓	35+	13+

* 2 AMOC REQUESTS SUBMITTED DUE TO ERRORS IN AD

FIGURE 1.

AMOC Summary by Category

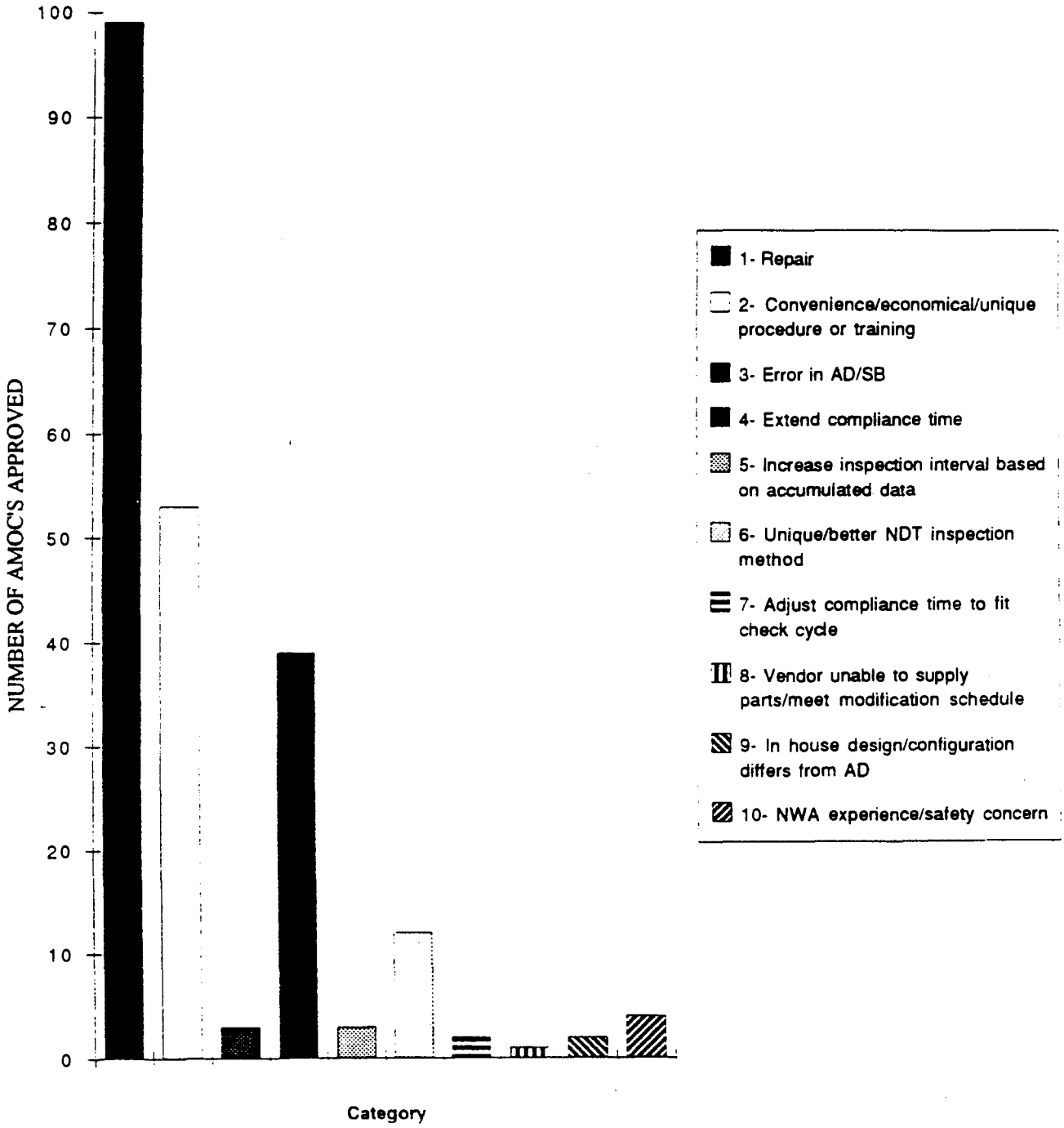


FIGURE 2.

Average AMOC Approval Duration by Category

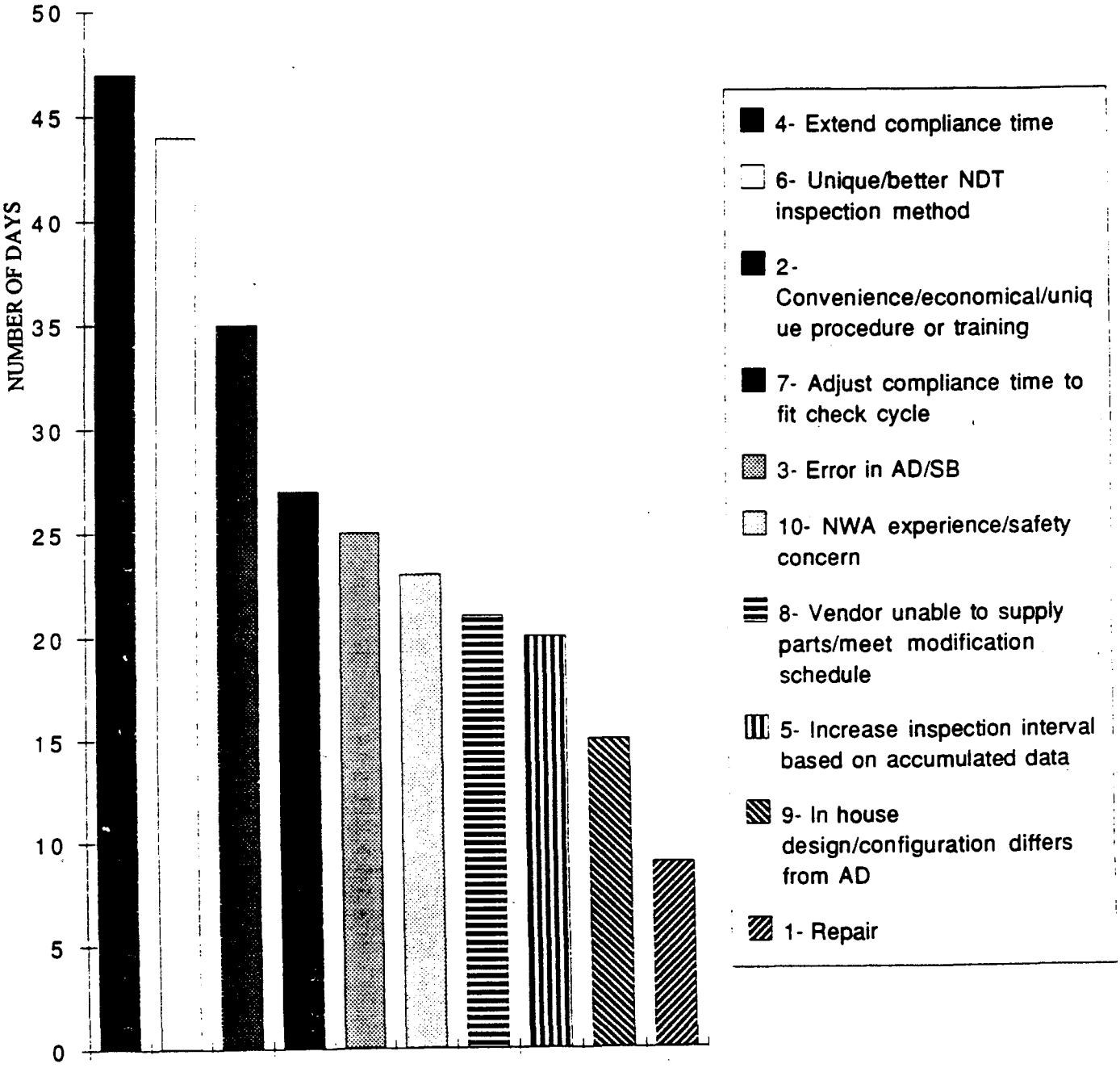


FIGURE 3

1993 Los Angeles Aircraft Certification Office Alternate Means of Compliance Requests by Branch

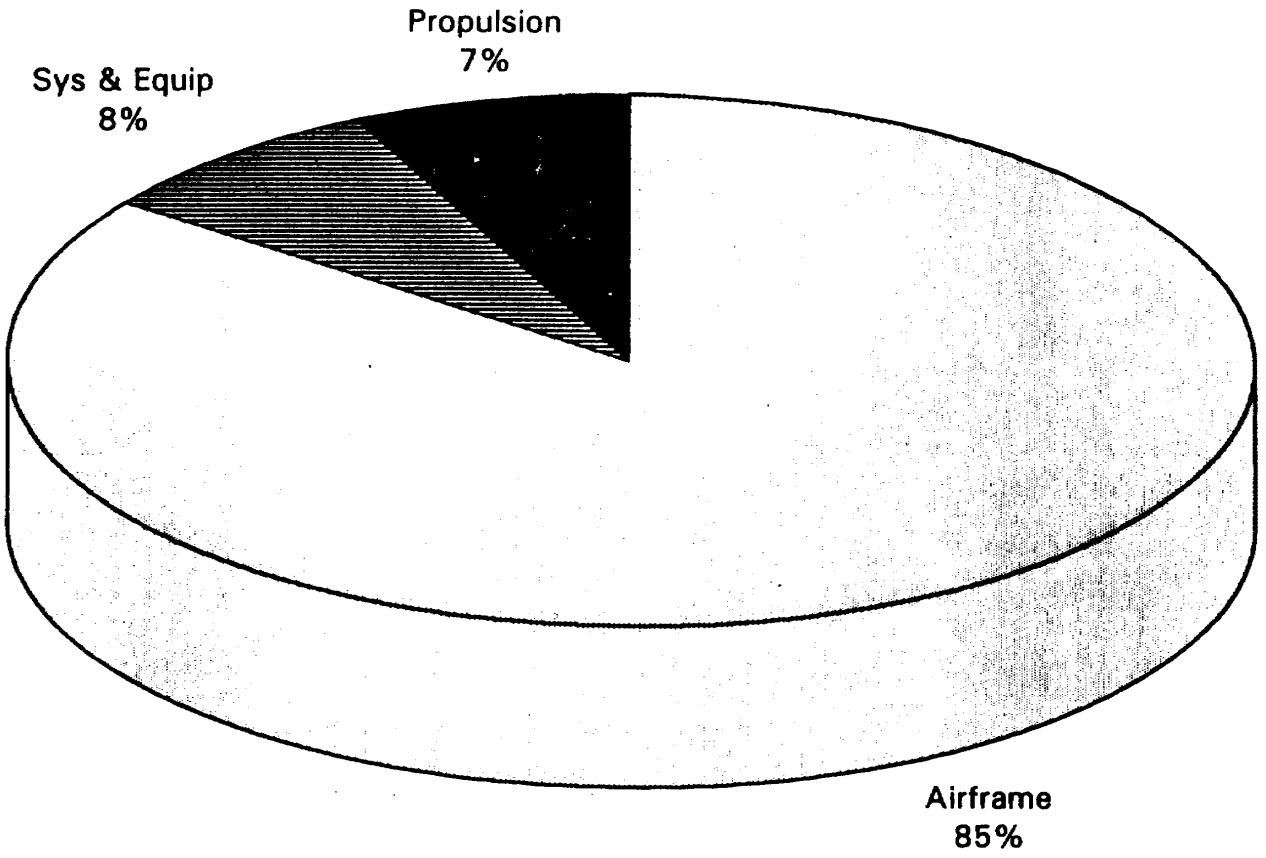


FIGURE 4

1993 Los Angeles Aircraft Certification Office Alternate Means of Compliance Requests by Reason

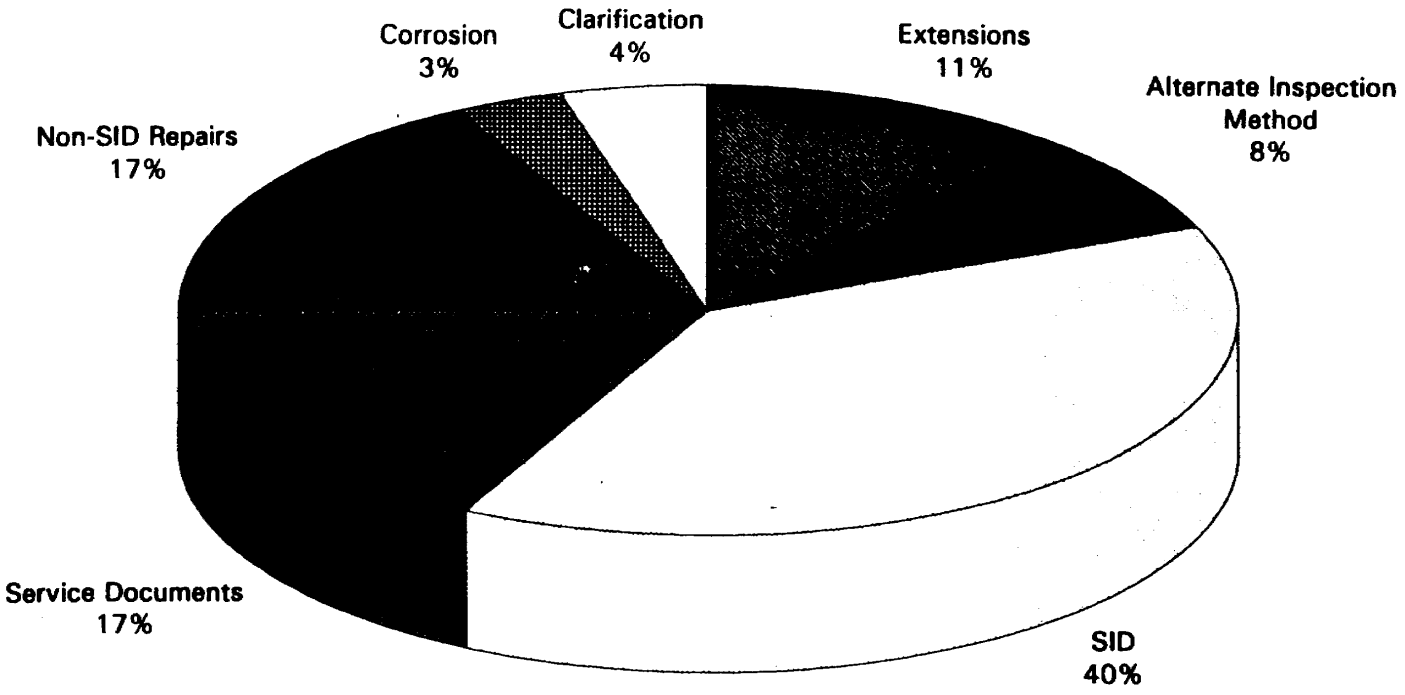


FIGURE 5

1993 Seattle Aircraft Certification Office Alternate Means of Compliance Requests by Branch

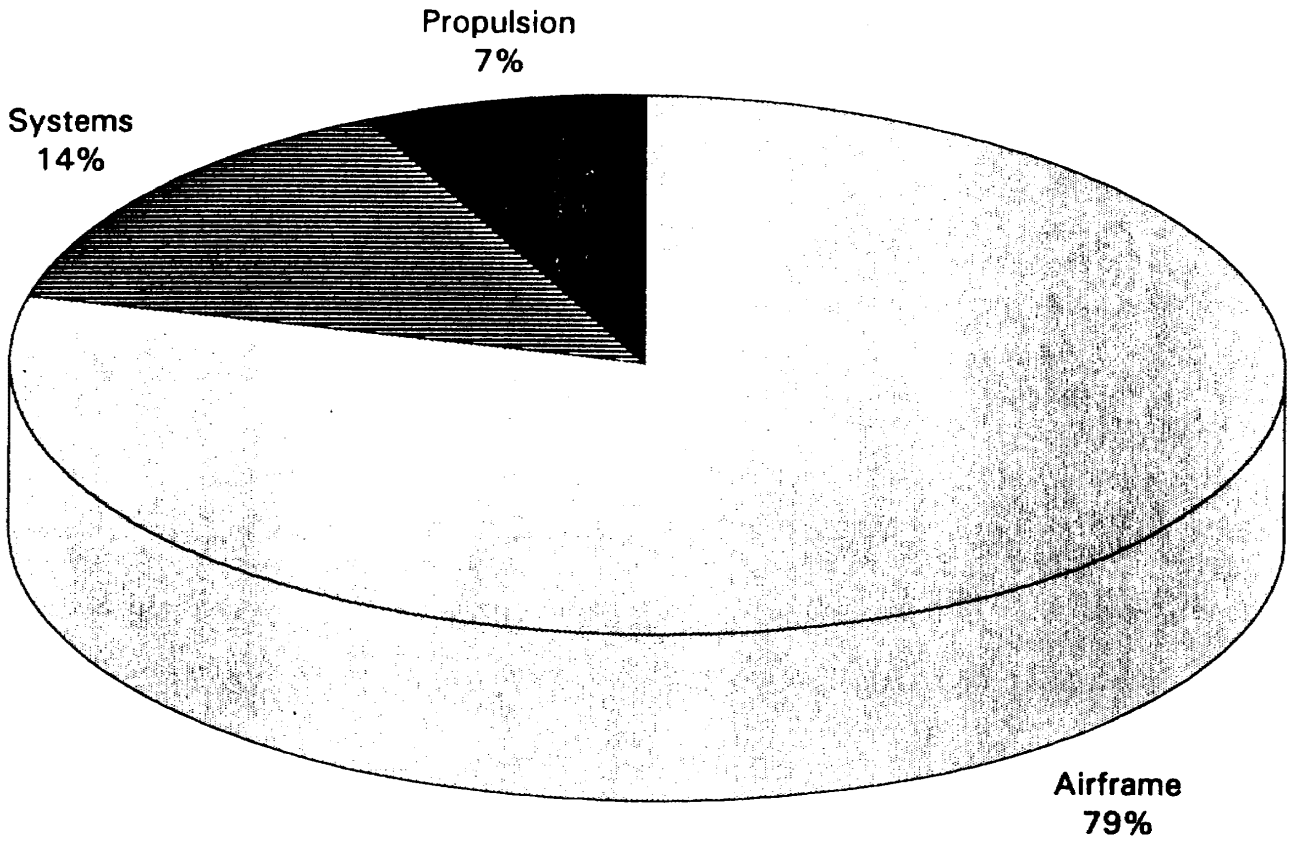


FIGURE 6

1993 Seattle Aircraft Certification Office Requests by Reason

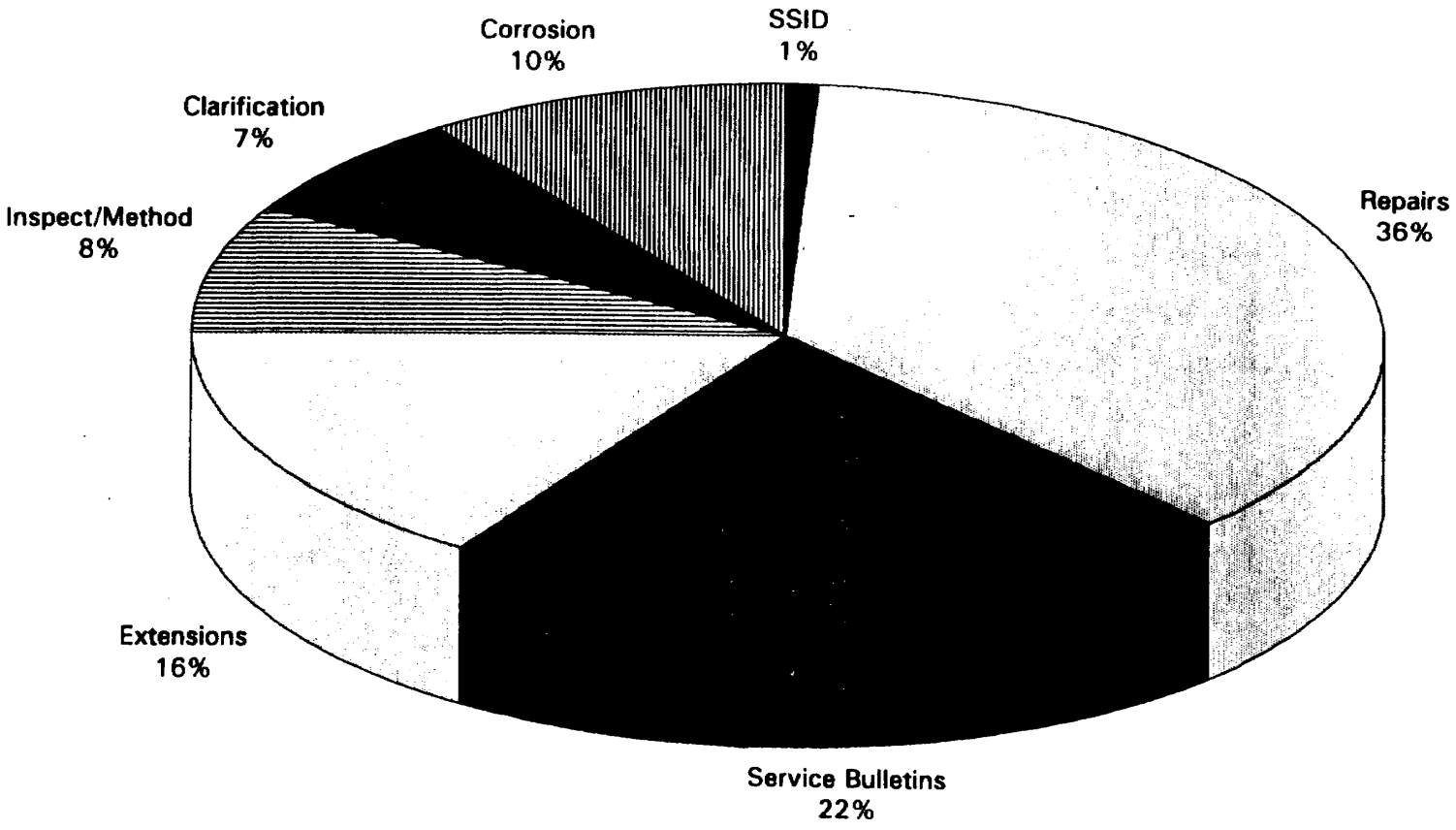


FIGURE 7

Los Angeles Aircraft Certification Office - Airframe Branch Total Number of Alternate Means of Compliance Requests by Category for 1/1/93 thru 6/31/94

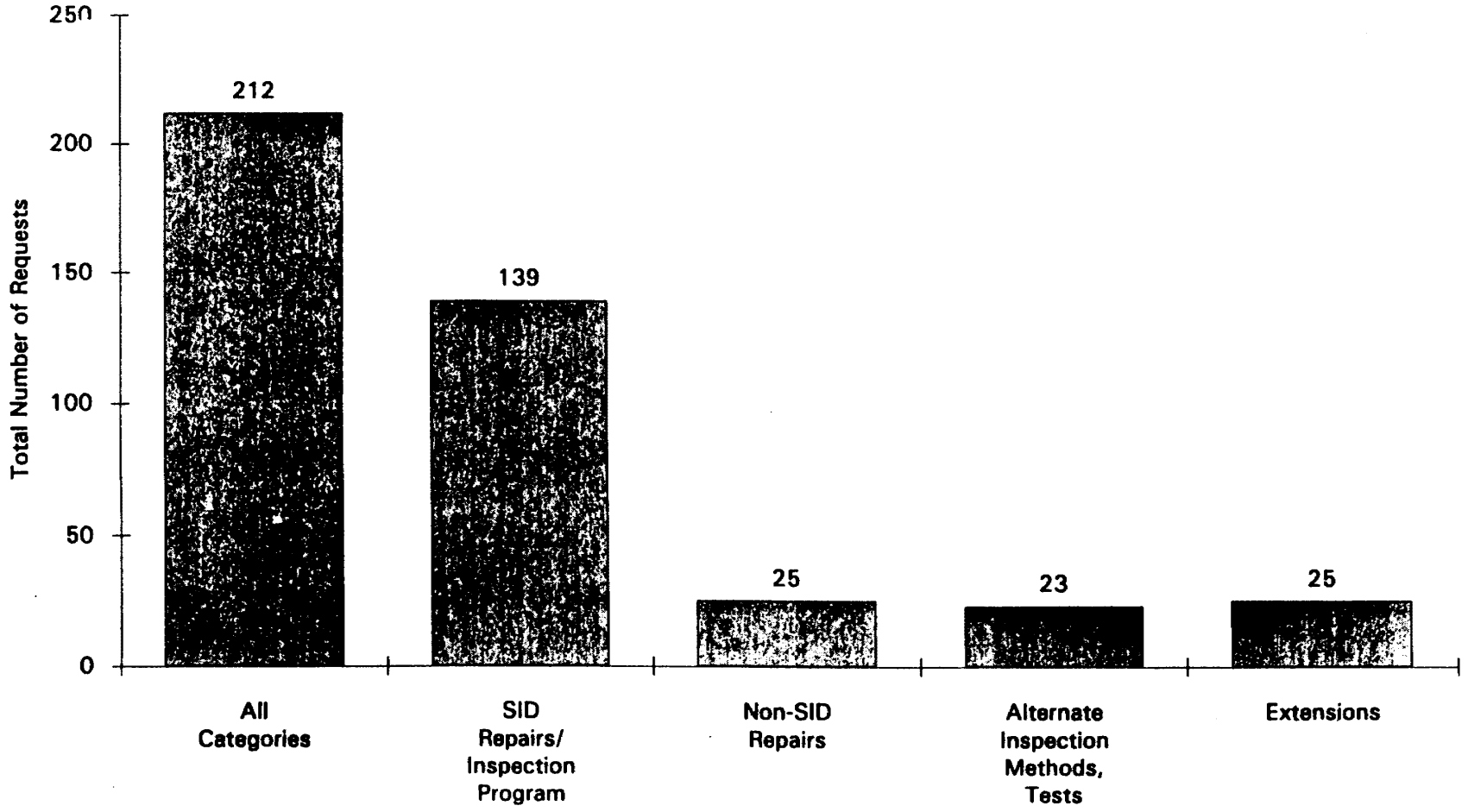


FIGURE 8

Los Angeles Aircraft Certification Office - Airframe Branch Alternate Means of Compliance Average Processing Time for 1/1/93 thru 6/31/94

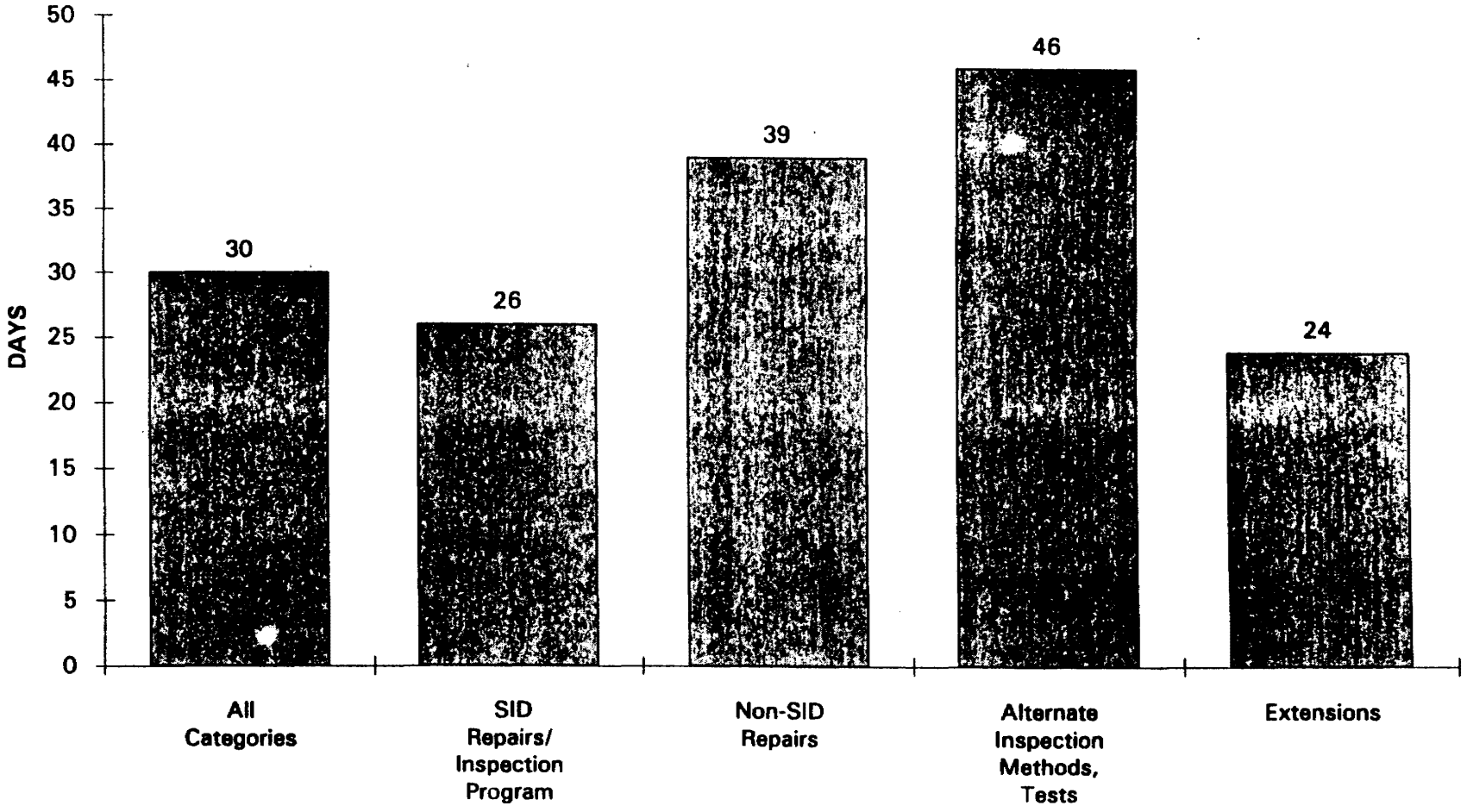
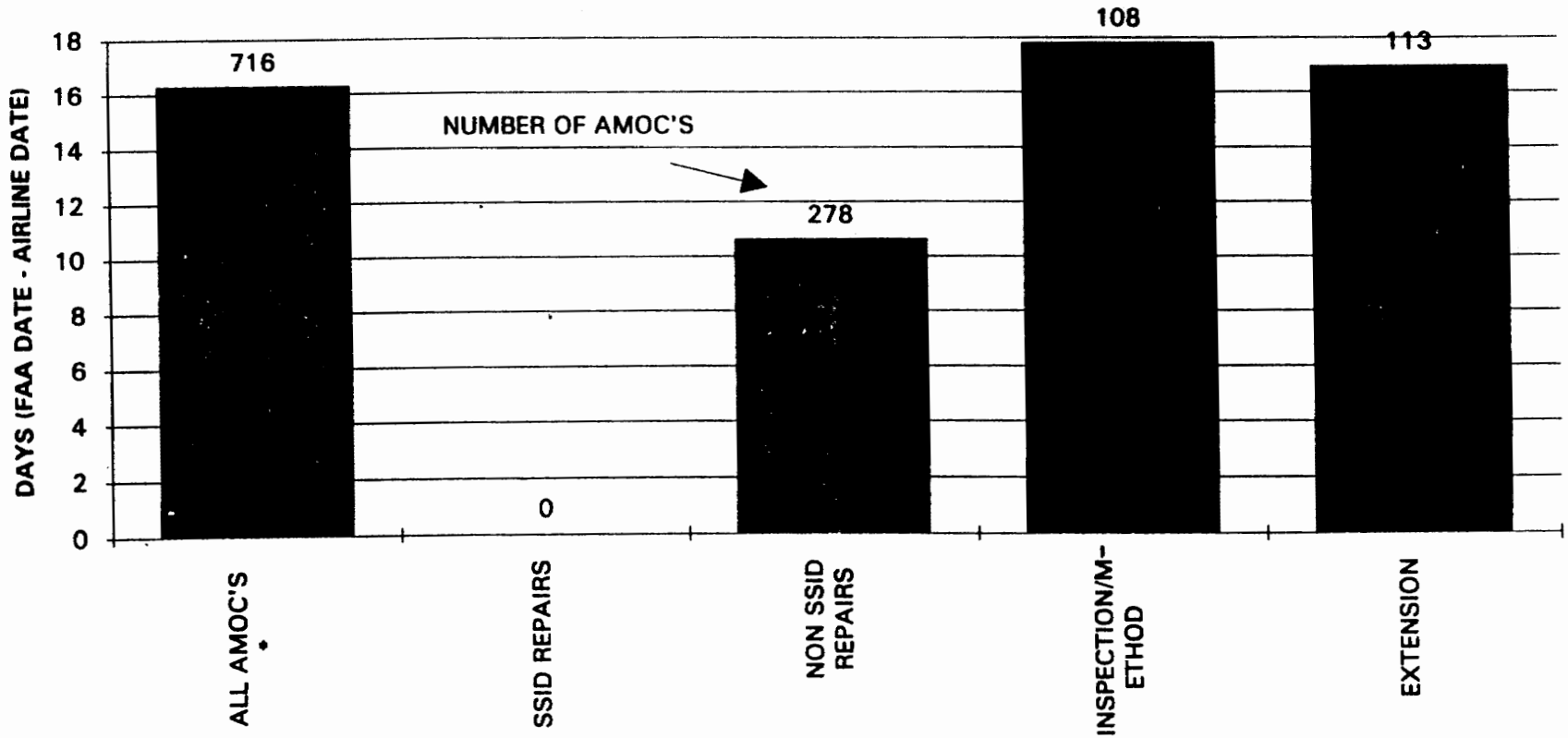


FIGURE 9

Seattle Aircraft Certification Office - Airframe Branch Total Number of Alternate Means of Compliance Requests by Category for 1/1/93 thru 6/31/94



* TOTAL AMOC'S INCLUDING CORROSION, SERVICE BULLETINS, AND CLARIFICATIONS

FIGURE 10

Seattle Aircraft Certification Office - Airframe Branch Alternate Means of Compliance Average Processing Time for 1/1/93 thru 6/31/94

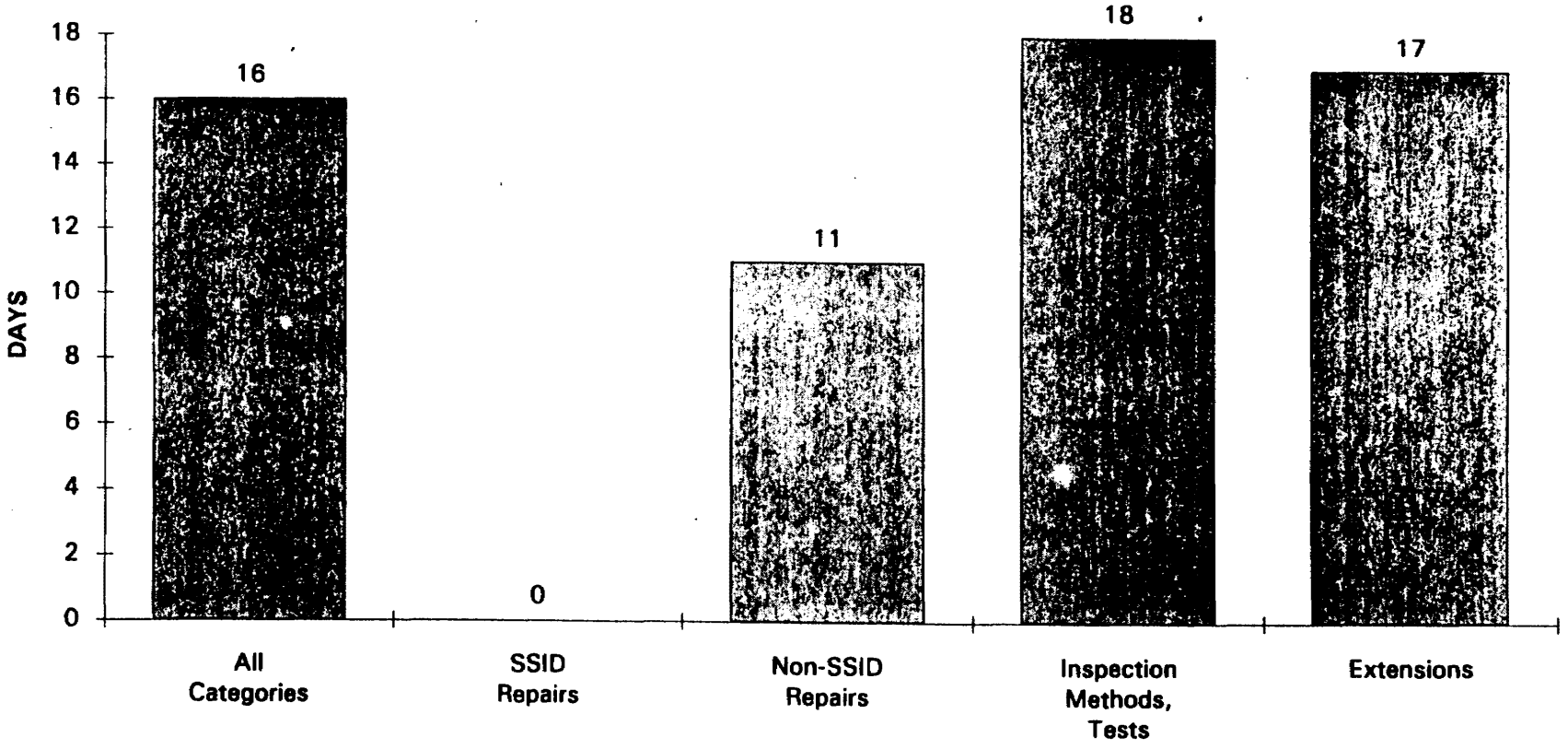
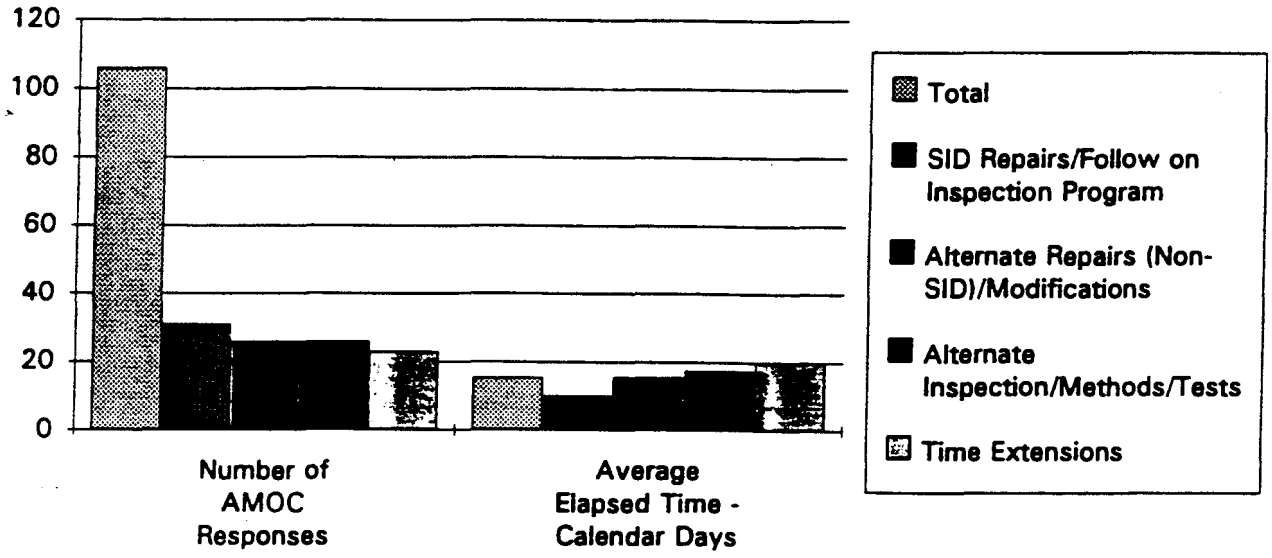


FIGURE 11

Transport Airplane Directorate - Standardization Branch (ANM-113)

AMOC Approvals 1/93 - 6/94



SECTION 3: CLASSIFICATION OF AMOC ISSUES

Discussion:

The results of customer survey, data gathering and analysis, as described in the previous section, highlighted that the customers are generally satisfied with the response time for approval of AMOC requests. However, the current increasing trend in the number of AMOC requests necessitates development of new approaches of handling the AMOC requests. In accordance with the team approach, the team sought to identify the sources of delays, problem areas and legal barriers in delegation of AMOC approvals.

The team was able to identify a comprehensive list of issues whose resolutions were significant to fulfill its charter successfully. The list was reviewed to reach consensus on a final list of issues. This second process led to consolidation of some of the items on the original list.

In the next step, the AMOC team reviewed the final list of issues and classified them into four different categories. The four categories and the issues in each are outlined below.

Category 1 - AMOC PROCESS

1-1 Coordination with the PMI's.
1-2 Signature delegation at the ACO including off-duty hours approval.
1-3 Lack of standard process of handling AMOC approvals within the FAA.
1-4 Lack of standardization of data required for an AMOC.
- need date
- data required
- lead time required

1-5 Communication of general AMOC approvals to users (OEMs and operators).
1-6 Approval time required for NDI technique.

Category 2 - DELEGATION

2-1. Define substantive parameters of delegation.
- Value added by ACOs review of AMOCs
- Lack of delegation external to ACO
- Definition of "acceptable level of safety"
    - Need Guidelines to allow delegation for approvals of some AMOCs by DERs
    - Lack of a system to define clear standards for DERs to find compliance in AMOCs
- Delegated system accountability and auditability to provide necessary enforceability of the AMOC.

2-2 Define process for delegation.

Category 3 - SB/AD PROCESS

3-1 Coordination between the TCH and FAA must ensure that S/B revisions are approved as AMOCs when applicable (statement needs to be more specific).

3-2 Authorization for an aircraft to return to service based on FAA approved data for a limited period with formal AMOC approval within a specified time interval.

3-3 Utilize the lead airline concept more completely to work out S/B problems before the A/D is published.

3-4 Revise an A/D more often when errors in the content are discovered to eliminate the need for an AMOC request.

Category 4 - Supplemental Structural Inspection Program (SSIP).

4-1 Investigate delegation of approval of SSIP repairs to the TCH.

The remainder of this section describes various issues highlighted above. The recommendations in each category are developed with an understanding of the issues listed above. In other words, the understanding of the above issues was necessary in order to develop recommendations for process improvement, expansion of delegation of AMOC approvals, improved coordination in SB/AD process and potential increased delegation of SSIP related repair approvals.

Category 1 - AMOC Process:

A review of the entire AMOC request and approval process, starting at the customers' facilities and ending with the issuance of the approval letter by ACOs was conducted, with the intent to identify the sources of delays. The AMOC team was then able to identify improved processes and define recommendations which will result in overall reduction of the time span associated with the handling of AMOC requests.

The following aspects of AMOC approval processes have been reviewed by the team;

1) Timing of the initiation of AMOC requests by the applicants airlines.
2) Information contained in a request.
3) Coordination with the Type Certificate Holders (TCHs).
4) Coordination with the PMI's.
5) Coordination of AMOC response within the ACOs.
6) Transferability of AMOC approvals.

The results of these reviews are summarized below;

1) Timing of the initiation of AMOC requests by applicants

The intent of this review was to learn what processes are in place at the applicants' facilities to ensure that timely requests are initiated and forwarded to the ACO. The AMOC team recognizes the need for timely approval of AMOCs, but believes that when dealing with an AD related deviation, proper planning is necessary to allow sufficient time for the appropriate coordination with the manufacturer and issuance of the approval letter.

Operators would prefer to conduct AD related inspections and modifications during an aircraft scheduled heavy maintenance. First , inspection teams conduct all AD related inspections, so that the need for deviating from the AD requirements are identified, repairs are developed and the process of initiating a request for AMOC can begin. Normally, a heavy maintenance visit could last from one to four weeks. This time is adequate for obtaining approval of the deviations.

Most AD inspections are accomplished during "C" checks, "B" checks or segmented "C" check holds, where an aircraft is in a scheduled maintenance hold for a period that may vary from a week to an overnight hold. Obviously it becomes more difficult to obtain AMOC approvals when inspections are accomplished on overnight holds than when an aircraft is scheduled for a week hold and the AD inspections are conducted during the first few days of the hold. Planning for the possibility that an AMOC approval will be necessary is obviously encouraged.

The team agreed that the operators are free to choose any system or approach they wish and that the team should focus on methods which are independent of the operators' maintenance practices. A point of interest, however, is that not all operators have written standard procedures for handling AMOC requests. This is an important issue and written material as part of their companies procedures may be helpful to institutionalize the selected processes, and to ensure adequate attention for timely initiation of the AMOC requests.

2) Information contained in a request

Information contained in a request for AMOC plays an important role in timely disposition of the request by an ACO. There have been cases in which incomplete information in a request has resulted in delays. An AMOC request should contain the following information in order to assist the ACO's in the evaluation of the request;

2.1) Complete mailing address of the applicant

2.2) Airplane model and series - There are AD's that are applicable to more than one model or series airplane. Identification of the airplane model and series is needed for review of the request.

2.3) Fuselage Number or Fuselage Serial Number - If a request is specific to one airplane as opposed to all of a particular model, documentation of the alternate means of compliance and any future inspections resulting from that approval is important. Therefore, fuselage number or fuselage serial numbers are needed to assist the PMI's and the manufacturers in tracking the status of the fleet.

2.4) Applicable AD number

2.5) Specific paragraph of the AD for which AMOC is requested - A paragraph within an AD may contain a series of instructions or mandate accomplishment instructions contained in a service bulletin. It is important that the request clearly state the specific deviation from the mandated instructions within that paragraph. This helps focus on the extent of the deviation and aids in more timely disposition of the request.

2.6) Reasons for deviation - Since alternate means of compliance is designed to provide flexibility for the applicants, there may be a variety of reasons for a request. It may have been requested for economic reasons, ease of accomplishment or impracticality of the mandated instructions. If reasons for the deviations are clearly identified, it will assist the ACOs and the manufacturers in taking appropriate action to assist other operators of the same product. This is not uncommon and often the manufacturer requests a generic AMOC (an AMOC that applies to all operators) such that all operators can benefit.

2.7) Need Date - This item is by far the most overlooked item. When an AMOC request is submitted to an ACO without a need date, it may incorrectly be assigned a lower priority. Proper planning, as mentioned above, along with a realistic need date will assist in disposition of the requests with no adverse impact on the applicants or the ACOs.

The above information does not guarantee a positive response from the ACOs, but does enhance communication and understanding of real issues which ought to be resolved prior to approval of AMOC. Appendix 4 provides an optional form that may be used to provide this information.

3) Coordination with the Type Certificate Holder (TCH)

In reviewing the current processes for requesting AMOC approvals, the working group noted that a request could end up in an ACO in various ways. The current language within ADs requires the operators to submit AMOC requests to the ACOs through the PMIs. However, TCHs often are in contact with the operators and some TCHs occasionally request AMOC approvals on behalf of the operators. Also there are cases in

which the applicants directly contact the ACOs. Regardless of how the request is initiated, a common step in the approval process is the coordination between the ACOs and the TCHs. The applicant may not be aware that coordination has taken place between the ACO and the TCH.

Early communication between the operators and the TCHs prior to forwarding an AMOC request to ACOs is highly encouraged. The benefits of such a contact are as follows;

- Enhances communication between the operators and the TCHs.
- It will allow the TCHs to review the merits of a request and if found to be advantageous, the necessary steps can be taken to help all operators.
- The status of the AMOC approval is no longer transparent to the operators since the communication between the TCH and the operators are established from the on-set.
- The TCH may act as the agent, on behalf of the operator, to secure approval of the AMOC.
- It helps the TCH to have a better knowledge of the status of the fleet.

If contact with the TCHs has taken place prior to the formal request, the TCHs' DERs can provide a signed copy of the form 8110-3 recommending approval of the substantiating data, which can then be submitted to the ACO in support of the AMOC request.

4) Coordination with the PMIs

The team reviewed and discussed various issues surrounding this topic. The team recognizes that the PMI must be kept well informed of AD AMOC issues. Furthermore, the team agreed that in certain situations, a close working relationship between the engineers at the ACO and the PMI's office is needed to resolve certain issues associated with AMOC approvals.

A quick review of the current process of AMOC requests revealed that the degree of involvement of the PMI's varies significantly. For example, although the AMOC paragraph within an AD calls for the applicant to forward the requests to the ACO through the PMI's office, not all PMIs wish to be a conduit for these requests. Furthermore, the current language of the AMOC paragraph states that the PMIs should provide comments regarding the requests to the ACOs. For most requests, the PMI's comments are simply a concurrence with the request. There are situations where the PMI's input, if well prepared, could assist the ACO engineers in expediting an AMOC approval.

As was mentioned earlier in this report four types of AMOC requests were identified, which if streamlined, could net the largest gain. They were;

- Repairs and modifications (non-SSIP), including repairs that must be approved by the Manager of the ACO
- Inspection methods
- Extensions and Adjustments to compliance times
- SSIP repairs/Follow on inspection programs

For each of the first three cases listed above, the role of a PMI may be somewhat different. In addition, the value added by the PMI's review of AMOC requests and comments to the ACO varies significantly. The team elected to evaluate the need for PMIs involvement for each case and make recommendations to maximize the potential values added.

4.1) Repairs and modifications, including repairs that must be approved by the Manager of the ACO

The turn around time for this type of request is generally short. By forwarding a request through the PMI's office an additional step is added to the process which often yields very little benefit. This step serves as a vehicle to make the PMIs aware of the activities at the operators' facility. The team believes that forwarding the AMOC request to the ACO and the PMI concurrently results in the same benefit with little or no delay. For approval of repairs that are AMOC, the PMIs comment is of very little value. Upon approval of the AMOC request the ACO must make sure that the PMIs are on the distribution list of the approval. This is extremely important for situations in which there are follow on inspections associated with the approval.

4.2) Inspection methods

In contrast to requests for repair approvals, alternative method of inspection requests often have a long lead time for approval. In this case, PMIs' comments could have a major impact on the approval process.

The ACO engineers often are not familiar with the capability of the operators. Often, when they receive such a request, they begin the interaction with the TCH who may or may not be familiar with the particulars of the proposed alternative inspection methods. The team encourages a close working relationship between the operators and the TCHs, however, this is not always possible. The PMI's input to the ACO regarding the capability of the applicant and actual witnessing of the inspection method can help the engineers immensely. At times, the inability of the ACO engineer to gain the appropriate confidence level in accomplishment of a sophisticated inspection method by the applicant can be a source of delay. Consequently, if an applicant and the TCH are not working together, involvement of the PMI is necessary, to the degree that forwarding the AMOC requests through the PMIs office becomes a necessity. Input from the PMIs regarding the applicant capability and comments after witnessing of an inspection method can alleviate some of the concerns and may lead to reduction of approval time.

The AMOC team recommends increased communication between the TCHs and the applicant. Specifically, when approval of alternate inspection methods are sought. This allows the TCH to disseminate approval of AMOC to all operators who wish to take advantage of the new approved method.

4.3) Extensions and Adjustment of compliance time

In reviewing a request for extensions to the compliance time, the ACO engineers assess the potential unsafe situation that may exist if an AD is not complied with within the mandated compliance times. In a situation such as this, it is of value to know the overall operator compliance to the scheduled maintenance inspections. Only PMIs can provide this type of information to the ACOs. Their comments are of value and therefore, the requests for extensions should continue to go through the PMI's office.

Regardless of the type of request, if the PMI submits a recommendation with which the ACO disagrees, the ACO should coordinate with the PMI before either granting or denying the request. If the ACO and PMI continue to disagree following coordination, the ACO's position would prevail.

5) Coordination of AMOC response within the ACOs and with TCH DER's

Currently, upon receipt of a request for an AMOC approval, the request is forwarded to the appropriate technical branch within the ACO. The project engineer within the branch who is responsible for the continued airworthiness of the product has the assignment to review the request, complete all relevant coordination and prepare an approval letter which will be signed by the ACO manager.

The possibility of a delay in the approval of an AMOC request exists at the ACO's as a result of higher priority tasks that may shift resources. The team believes that tracking of the AMOC requests at the ACOs could eliminate inadvertent delays in approval of AMOCs. Tracking of the requests can be done either at the branch level or the ACO level. The team believes that the ACOs are in a better position to determine whether and how this tracking should be accomplished.

As was mentioned earlier, coordination with the TCH DERs is an important step in the review and approval of AMOC requests. This process often occurs without the applicant awareness. The team believes that if prior to the formal requests, an applicant contacts the TCH and seeks assistance in securing approval of the requests, there is a significant reduction in approval time. The benefits are due to the following reasons;

5.1) TCH DERs may have been delegated authority to approve AMOC requests for the AD in question.

5.2) TCH DERs may be able to support the request by issuing a signed copy of the Form 8110-3 which can then be forwarded with the request to the ACO.

5.3) The TCH may already have approval of the AMOC being requested which can then be easily approved for the applicant.

Coordination of the approval letters has also been designated as another source of delay. Currently, signature of the ACO manager is needed for AMOC approvals. The AMOC team believes that signature authority should be delegated to the lowest level consistent with the need to ensure sound decision-making. However, the team recommends a gradual transition to this ultimate goal. For the time being, approval should be delegated to the branch managers or the program managers depending on the structure within the ACOs.

Another aspect of coordination is the involvement of the Aircraft Evaluation Group (AEG). The ACO and AEG should jointly consider whether the approval letter should be coordinated with the AEG office. The AEG evaluates the merits of the request from the operational and maintainability point of views which eventually could prove to be of value to the PMIs. Furthermore, the AEG can ensure that the PMIs receive a copy of the approval letters.

6) Transferability of AMOC approvals

Questions frequently arise at the time an aircraft is transferred as to whether AMOCs approvals that have been issued for that aircraft are transferable to the new operator, or whether the new operator must request that AMOCs be reissued. Usually, the ACO approving the AMOC in the first instance can determine the answer to this question at the time of the original approval. For example, if the AMOC consists of a different configuration of a required modification, the approval should be transferable. On the other hand, if AMOC consists of a different inspection method that has been developed by the applicant using specialized equipment and techniques, the approval should normally not be transferable.

To eliminate the need for unnecessary requests for transfer of AMOC approvals, and to ensure that operators do not assume that approvals are transferable when they should not be, one of the following statement should be included in each AMOC approval letter:

- This AMOC approval is transferable with the affected airplane(s).

- This AMOC approval is not transferable with the affected airplane(s). Any subsequent operator must either comply with the AD or obtain a separate AMOC approval.

The AMOC team recommends that the FAA's AD Manual be revised to include this guidance.

Category 2 - Delegation

The Federal Aviation Administration's (FAA) has historically not authorized Designated Engineering Representatives (DERs) to approve any deviations to Airworthiness Directives (ADs). This policy was based, in part, on section 314 (a) of the FAA Act of 1958 which provides for the Administrator to delegate to any properly qualified person any work, business, or function respecting (1) the examination, inspection, and testing necessary to the issuance of certificates under Title VI of the Act, and (2) the issuance of such certificates in accordance with standards established by the Administrator. Thus, while the Act allows the FAA to delegate to DERs the findings of compliance to known, defined, and published standards established by the FAA, such as 14 CFR Parts 23, 25, 27, 29, 33, and 36, leading to the issuance of certificates, the act does not permit the FAA to delegate discretionary determinations of acceptability, such as those frequently involved in approving deviations from ADs.

A number of initiatives have been undertaken in order to ensure the continued structural integrity of older airplanes. Many of these initiatives have required extensive structural modifications and repairs which have resulted in a substantial increase in the number of AMOC requests and a corresponding increased workload at the cognizant Aircraft Certification Office (ACO). Many of these AMOCs have been for relatively minor structural changes from the mandated repairs or modifications.

In order to address the growing number of AMOCs from these initiatives without increasing FAA resources, a process was developed to allow delegation to DER's of certain approvals for minor deviations from structural AD requirements. This process was based on the FAA Act requirement of finding compliance to a known standard and does not involve discretionary determinations of acceptability. It was determined that the type certification basis of the product identified in the applicability statement of the AD, which includes the FAR amendment level, special conditions, exemptions and equivalent safety findings, would be an acceptable defined standard for minor deviations to the structural AD requirements with which the DER could make findings of compliance.

On this basis, the FAA has authorized certain TCH DERs to approve minor changes to repairs and modifications mandated by any AD on their respective airplanes without further need to secure an AMOC approval. The types of minor changes that these DERs are authorized to approve are edge distance deviations, oversized fasteners, fastener substitution, trimming and machining necessary for fit-up or alignment, lubrication, or finish requirements. The FAA has also authorized certain TCH DERs to approve deviations to the modifications required by the aging fleet mandatory modification ADs on their respective airplanes. These deviations are to permit the proper installation of service bulletin modifications because of construction, the differences between airplanes, local damage, adjacent repairs, or to change blend out or rework limits. In all cases, approvals must be based on a finding that with the change the repair or modification continues to meet the type certification basis of the airplane. This authority has been limited to the

TCH DERs, because they have access to all the type design data and they are under the direct supervision of the cognizant ACO.

The AMOC team was tasked to develop industry and FAA methods for improving the timeliness of AMOC approvals for ADs, while maintaining the same level of safety. The AMOC working group evaluated the possibility of delegating more findings to DERs in areas covered by ADs in order to accomplish the following:

(1) Improve the timeliness of the AMOC issuance.
(2) Maintain at least the same level of safety achieved under the existing process.
(3) Reduce the need for AMOC while maintaining legal enforceability of ADs.
(4) Standardize the process for issuing AMOCs throughout the FAA.
(5) Accomplish the foregoing in a cost effective manner for industry and without increasing the need for FAA resources.

In considering whether the FAA could expand the DER authority in areas covered by AD's, the following subjects were addressed:

In considering whether the FAA could delegate AMOC findings, the team first identified the value added by the ACO review and approval of AMOC requests. The purpose was to ensure that any proposed delegation system would not eliminate the value that is added by the ACO review and approval of AMOC requests and therefore maintain at least the same level of safety. The team identified the following items as value added by ACO review and approval of AMOC requests:

1. Ensures that the safety concern is adequately addressed and that all applicable rules are considered.
2. Provides an additional independent check of the substantiating data and any assumptions used.
3. Provides a means for supervising and coaching DER's, since most AMOC requests are submitted with DER recommend approval.
4. Ensures that safety is not compromised due to economic considerations.
5. Ensures timely completion of required damage tolerance assessments.
6. Facilitates communication between the ACO and the Principal Maintenance Inspectors.

The barriers to delegation were considered so that the team could identify the allowable boundaries of any proposed AMOC delegation. The team identified the following barriers to delegation for deviations from ADs:

1. The FAA Act only permits the FAA to delegate to DERs the findings of compliance to defined standards. The FAA Act does not permit the FAA to delegate discretionary judgments or determinations of acceptability.
2. It is difficult for an ACO to perform DER surveillance/oversight with DERs who are not under their direct supervision.

3. The ACO must ensure that DER approved deviations are within the scope of the delegated authority and consistent with the intent of the AD.
4. It would be difficult for the ACO to retract DER approvals found to be inappropriate.

Evaluation of the value added by the ACO and the barriers to delegation led the team to conclude that any AMOC delegation should be limited to TCH DERs. By limiting this authority to TCH DER's the value added by ACO would not be eliminated and the identified barriers to delegation could be overcome. The team identified the following reasons to limit AD delegation authority to TCH DERs:

1. They have access to all type design data including all the load cases, safety margins, design practices, and analytical methods that were originally used to show compliance with the airplane type certification basis.
2. They are under the direct supervision of the ACO which originated the AD, thus all approvals can be monitored and corrective actions initiated if necessary.
3. They are familiar with the history and basis for the actions required by an AD mandated service bulletin and the original airworthiness concern.
4. It is necessary that the DER, and the ACO via monitoring, is aware of the deviations to ADs since the deviations may be the result of unforeseen new problems. This awareness also enables management of the Continued Airworthiness of the airplane.
5. The ACO originating the AD needs to be aware of previously issued AMOCs in order to determine the applicability to any superseding AD. The type certificate product manufacturer DERs would have this data.

The team considered the following AMOC delegations to be inappropriate:

1. Delegating to non type certificate product manufacturer DERs.
2. Allowing any ACO other than the originating to approve data.
3. Multiple airplane approvals for the same alternative method.
4. Revisions to Service Documents that are referenced in ADs.

Areas that the team concluded would require a discretionary finding and thus could not be delegated:

1. Extensions or adjustments to the compliance times specified in ADs.
2. Discretionary judgments of acceptability.
3. Inspection methods.
4. Unrepaired Damage, such as corrosion and cracks.
5. AMOCs for which analysis or paperwork has yet to be formally submitted.

Finally, the team considered the Supplemental Structural Inspection Program (SSIP) ADs, since these ADs have resulted in a significant number of AMOC requests. In reviewing

the SSIP ADs it was apparent that all the SSIP ADs required repair prior to further flight in the case of a finding. However, there were significantly different AD requirements imposed depending on the method selected by the manufacturer in implementing the guidance provided in AC 91-56. Despite these difference, the AMOC team considered that the approvals for repairs of damage found per domestic airplane SSIP ADs could be delegated to the TCH DERs provided the standard is defined and adequate FAA oversight is assured. Please note that technically these requests are for approval of a means of compliance and not an alternative means of compliance.

Based on the data review of AMOC approvals from January 1993 to June 1994, and on information provided by the operators and manufacturers, the team concluded that deviations from the structural repair/modification ADs create the most problems for the operators and represent the largest workload area that does not involve discretionary determinations of acceptability. Therefore, the team has concentrated on this area to allow delegation. Based on the above discussion, the team considered extending the TCH structural DER's approval authority with respect to ADs in the area of structural repairs and modifications. The team also concluded that extending this authority would significantly reduce the number of AMOC requests submitted to the ACOs for approval. Should this program be successful, the team recommends that the FAA consider extending TCH DERs' approval authority into other areas such as systems and propulsion.

The FAA should implement a new policy to authorize certain TCH structural DERs to approve on individual airplanes general deviations or alternative configurations for AD required repairs and modifications where the FAA determines that the intent of the AD was to restore the airplane into compliance with the airplane type certification basis or other defined airworthiness standard.

Temporary (Time-Limited) Repairs

In establishing the parameters and the barriers to delegation of AMOC approvals, a question concerning the feasibility of delegating the approval of temporary repairs in areas affected by an AD was raised. The question resulted in a number of long discussions to reach consensus among the team members. For the record, a temporary repair is one that will have to be removed within a certain time frame.

Temporary repairs are allowed by the manufacturers and are included as a part of the Structural Repair Manual (SRM) which is an FAA approved document. Also, temporary repairs for damages which exceed the limits specified in the SRM are reviewed and approved by the manufacturers' DERs. In the latter case, the evidence of approval is a signed copy of the form 8110-3. There may be required inspection intervals associated with such approvals.

As was described earlier in this section, the AMOC team agreed that with an adequate oversight system, when the standards required by an AD are well defined, it is possible to delegate approval of any repair (interim or permanent) that may have arisen in conjunction

with showing compliance with that AD. For example, if the intent of the AD is to bring the level of safety to that of the certification basis of a model airplane, then those standards are well defined and delegation to a DER is feasible. There have been instances in which SBs have made provisions for temporary repairs.

The question of applicable standards for temporary repairs generated a substantial amount of discussion and exchange of ideas. There appeared to be a wide range of understandings regarding the standards for temporary repairs. Often, temporary repairs are approved contingent upon accomplishment of repetitive inspections. These inspections may or may not be based on a damage tolerance assessment. This issue may have caused some of the team members to believe that temporary repairs do not meet the certification basis of the aircraft.

For pre-Amendment 45 (no Damage Tolerance Assessment) airplanes the inspections may be based on company practices and/ or DER's judgment. For post-Amendment 45, a temporary repair meets the ultimate strength, and with properly defined inspection intervals could be in compliance with the certification basis as well. However, the accomplishment of damage tolerance assessment is time consuming and often is not completed within the time frame that a repair is needed by an operator to return the aircraft to service.

The AMOC team is of the opinion that if standards required by an AD are well defined and temporary repairs are fully substantiated, then the TCHs' structural DER's can be delegated to approve them. However, the majority of these repairs are designed for a short life and by nature may not be of high quality in either material or, potentially, in design practices. It is this aspect of the temporary repairs that causes the members to define specific guidelines for approval of AD related temporary repairs by the DERs.

Guidelines for Temporary Repairs:

The following guidelines are recommended by the team for the delegation of AD related temporary repairs to TCHs' DERs.

1. Repair must meet the certification basis of the aircraft. It is, however, understood that it may lack certain normally recommended design practices.

2. The durability of the most critical detail of the repair will be at least twice the structural maintenance period and not less than 18 months (based on projected aircraft utilization) .

3. Repair would be replaced by a permanent repair (or terminating action in the case of an AMOC) by the next structural maintenance check not to exceed 24 months. Further, the temporary repair must be designed such that its inspection threshold is greater than its replacement period. In other words there should not be a need for inspection of the repair while it remains installed.

4. TCH whose DER authorizes such repair would be required to:

- Provide a copy of the 8110-3 Form indicating approval of the repair to the airline specifying the terms of the life limited DER approved repair for the particular AD. The 8110-3 Form would indicate that the approval is time limited and that the repair will have to be removed on or before specific date (or flight cycle limit, time limit etc.).

- Provide a copy of the 8110-3 Form indicating approval of the repair to the cognizant ACO within 72 hours of such an approval or other time agreed upon between the TCH and the cognizant ACO.

- The 8110-3 Form shall include the following information:

  - AD number and paragraph.
  - Airplane model, serial number and operator.
  - A description of the temporary repair including part names and numbers, part serial number if applicable, description of damage, cracks, and repair.

- Keep all records (telex's, stress and life analyses, letters etc.) for a period of time consistent with normal continuing airworthiness record keeping requirements, not less than one year after the removal of said repair from the aircraft.

- Have available the necessary paper work to support any audits that the cognizant ACO deems necessary to oversee the system.

The intent of the above guidelines is to revert back to the certification basis of the aircraft which is well defined and the DERs can easily find compliance to the applicable rules. There are situations where a temporary repair may not meet these guidelines, in which case ACO involvement is necessary.

Category 3 - Service Bulletin/AD Process

A significant source of avoidable AMOCs is associated with errors in documentation referenced in ADs. The source of these errors can be either technical or clerical. Their existence however drives significant uses of resources within the FAA and industry. If the error is substantive, the service bulletin must be revised and a new AD issued to mandate the corrective change. AMOCs are required until a revised AD is available. If the error is non-substantive, the manufacturer will none-the-less be interested in revising the service bulletin to avoid confusion even though the FAA may not reissue the AD. AMOCs may be required in this case for an operator to take advantage of the changes. In all cases the errors contained in the initial issue of the service bulletin causes significant unnecessary use of resources.

The ATA introduced the Airworthiness Concern Process (a.k.a. "Lead Airline") in October 1992. (ATA Report AC92). The objectives of this process is to reduce the number of service bulletin errors by a pre-issue critique of the proposed service bulletin. This pre-issue critique includes a review of both the text and the accomplishment instructions to insure accuracy. In some cases an airline actually accomplishes the service bulletin. The information gained in the process quite often leads to revisions in the service bulletin prior to issuance and inclusion in the data referenced by the AD.

The lead airline process is designed to examine potential safety problems in which a companion service bulletin has not yet been written. Occasionally, however, an older service bulletin is mandated by an AD based on evidence that the service bulletin addresses a risk to airworthiness. These situations generally create conditions that were never envisioned at the time the service bulletin was published. The lead airline process is used in this area to ensure that the published data is as accurate as it can be to reduce the possibility of future AMOCs.

For example, in developing the Effectivity section of a service bulletin, the TCH's primary focus is on reviewing the original design data and its own changes that may have been incorporated either in production or in service. However, there may also be design changes (e.g. STCs) that also should be considered in determining Effectivity of a service bulletin. For example, in developing a service bulletin to address a problem associated only with airplanes that are configured for passenger carriage (e.g., defective emergency evacuation equipment), the TCH may include all airplanes that were originally certificated for carrying passengers. If some of those airplanes have been converted to cargo-only configurations in accordance with STCs, an AD referencing the SB's Effectivity section would apply to those airplanes, even though they are not equipped with the affected equipment. Therefore, those operators would have to obtain an AMOC for those airplanes. This can be prevented if, in the first instance, the TCH and the lead airline and other operators are aware, in developing and reviewing the Effectivity section of the SB, that, where possible, it should be limited to airplanes "equipped with" the affected equipment.

While the ATA lead airline process has been successful in reducing errors and requests for AMOC's, there is still room for improvement. The AMOC team has three recommendations directed to the ATA:

RECOMMENDATION 1: Provide a revised checklist for the lead airline process as a way of reducing the number of AMOC requests.

The checklist that has been created by the ATA to assist the lead airline in critiquing an existing or future planned service bulletin is inadequate. In reviewing the ATA checklist, the AMOC team believes that a more detailed checklist is required to comprehensively examine all aspects of the issues that may occur after AD publication.

RECOMMENDATION 2: Define the limits of the lead airline process so that its role in reducing the number of AMOCs is clearly understood.

There are times when a difference of opinion exists between the manufacturers/operators and the FAA on whether a service document needs to be mandated . The operators/manufacturers are provided the opportunity to submit their comments to the proposed rule. Should the FAA adopt an AD, the lead airline process should still be supportive in ensuring that the referenced service document does not lead to increased AMOC's.

RECOMMENDATION 3: Revise ATA's Specification 100 so that the scope of the approved AMOC is clearly understood.

The present wording of ATA Specification 100, Section 2-7-4 reads as follows:

Approval - If a subsequent revision to the service bulletin is issued as an equivalent means of FAA Airworthiness Directive (AD) compliance and the phrase" --- or later FAA approved revision" is not included in the provision of the AD, the following shall be included in the SB revision:

"This revision has been approved by the FAA (or other applicable airworthiness government authority) as an equivalent means of compliance with AD XX-XX-XX."

It may also be necessary to revise this section of ATA Specification 100:

Sometimes certain provisions of the accomplishment instructions are not part of the Alternate Means of Compliance approval. For example, the manufacturer may include two separate accomplishment instructions even though only one is approved under the AMOC. Under these circumstances, the blanket statement now required by ATA Spec 100 would not be accurate and may lead to a situation of non-compliance. In addition, a revised service bulletin may provide an AMOC for only a portion of an AD. These problems would be addressed by revising Spec 100 to state: "The FAA has approved the accomplishment of Paragraph(s) _____ of this service bulletin as an alternative method of compliance with Paragraph(s) _____ of AD _____."

Category 4 - Supplemental Structural Inspection Program AMOC Issues

Supplemental Structural Inspection Program AMOC issues addressed by the Category 4 group included repair requirements imposed by SSIP AD's on different models of airplanes as well as delegation issues associated with repairs to structure defined as Principal Structural Elements (PSE's) by the SSIP AD's. The Category 4 group discussed not only AMOC issues pertaining to the SSIP AD's, but issues relating to repair approval by ACO's. These repair approvals are handled in the same manner as AMOC approvals and constitute much of the AMOC activity.

The category 4 group reviewed the wording in the SSIP ADs for different model airplanes. Following are the two basic wordings of SSIP AD repair paragraphs among the various affected airplane models:

- "repair in a manner approved by the manager ACO"
- "repair in accordance with an FAA approved method (DER approved data, SRM, SB)"

These differences have resulted in significantly larger number of AMOCs for the ADs with the first statement than for those with the second statement.

Some SSIP ADs mention the certification basis of the airplane and approval by the FAA or other airworthiness authorities. The group determined that specific repair approval paragraphs were written by the ACOs in harmony with what they understood the programs to accomplish and the FAA oversight necessary to monitor the program.

The category 4 team concluded that approval of repairs to PSEs could be delegated to TCH DERs as long as a definable standard for determining acceptability is identified and adequate oversight of the cognizant ACO is assured. The oversight system which will be put into place for category 2 (delegation) could be used for Category 4 (SSIP) repair approval delegation.

SECTION 4: CONCLUSIONS AND RECOMMENDATIONS

The AMOC team was chartered to improve issuance of AMOC approvals in a cost effective manner while maintaining at least the same level of safety. To achieve this objective, the team concentrated on four distinct categories with the aim to develop recommendations, which if implemented, result in the desired objective. The four areas were;

1) AMOC process.
2) Delegation.
3) Service Bulletin/AD coordination.
4) Supplemental Structural Inspection Program.

AMOC request and approval processes were reviewed. The team found that there are certain aspects of the current processes that can be improved without a reduction in level of safety. The team developed specific recommendations regarding the roles of the applicants, ACO's, TCH's and PMI's. Additionally, the team has addressed the interaction and coordination of these stakeholders.

Although the process improvements will be helpful in preventing delays in AMOC approvals, the team believes that delegation of some AMOC approvals to the TCH structural DER's, with the appropriate oversight, will yield the most benefit. The team determined that if the standards for approval of structural AMOC's are well defined then the TCH structural DER's can be delegated to approve AMOCs. Furthermore, the AMOC team identified certain items that can not be delegated. They are:

1. Extensions or adjustments to the compliance times specified in ADs.
2. Discretionary judgments of acceptability.
3. Inspection methods.
4. Unrepaired Damage, such as corrosion and cracks.
5. IOU by operator to get AMOC at a later date.

Historically, the ACO's have approved temporary repairs of components that are subject of an AD. The AMOC team recognized the need for developing guidelines for approval, by TCH s' structural DERs, of these types of temporary repairs. These guidelines are listed in Section 3. The team believes that the guidelines along with the recommended oversight system should be used by the ACO's in authorizing the TCH DER's to approve temporary repairs.

With regard to service bulletin/AD coordination, the team determined that the number of AMOC requests can be reduced if a better coordination of SB/AD has taken place. The current ATA lead airline process can further be improved in order to enhance the coordination process. In addition, the approval statement on a service bulletin can be used to reduce the need for AMOC requests.

The AMOC requests associated with mandated Supplemental Structural Inspection Programs were reviewed. The differences among the SSIP programs necessitate various AD language for AMOC approvals. In some cases, the number of SSIP related AMOC's is substantially high. However, the team believes that delegating approval of the PSE repairs to the TCH DER's will provide the manufacturers with the flexibility to respond to the requests in a timely manner.

Recommendations:

The AMOC team has identified the following recommendations, which if implemented would increase the efficiency of current processes and reduce the volume of AMOC requests through the ACO's.

The AMOC Process

1) ATA/manufacturers should develop guidance material for operators on AMOC processes. The document should emphasize the following points:

- The need for written processes within each operator's organization to ensure consistent, timely initiation of AMOC requests.

- The necessary information that must be included in a request (A checklist is provided in Appendix 4) .

- The advantages of coordination of AMOC requests with the Type Certificate Holder for the affected product prior to contacting the ACO's.

2) FAA should revise the AD manual to require that future AD's:

- Allow forwarding of the AMOC requests to the ACO and the PMI concurrently. This requires a change in the current language of the AMOC paragraph in the AD's.

- Include the language for allowing certain AMOC approvals by TCH's structural DER's.

- Include the language for a note stating the acceptability of previously approved AMOC's in superseded and revised AD's.

- Include guidance regarding the transferability of AMOC approvals.

3) FAA should develop guidance material for PMI's highlighting their role in supporting the ACO's in approval of various types of requests.

Delegation

1) The FAA should implement a new policy to authorize certain TCH structural DERs to approve on individual airplanes alternative configurations for AD required repairs and modifications where the FAA determines that the intent of the AD was to restore the airplane into compliance with the airplane type certification basis or other defined airworthiness standard.

2) The FAA should issue a Notice for use by the ACO's to address the delegation issues identified by the team. This Notice would address numerous implementation issues and limitations arising from this recommendation (A draft Notice has been developed by the team and is included in Appendix 2).

3) Regarding temporary repairs of components that are subject of an AD, the FAA ACO's should use the guidance developed by the team to determine whether AMOC approvals can be delegated to the TCH structural DER's.

4) The FAA should develop guidance material for PMI's regarding their role in light of the new policy delegating the AMOC approvals to TCH DER's. The team has developed this proposed guidance material (Appendix 3).

Service Bulletin/Airworthiness Directive Improvements

1) ATA should provide a more detailed checklist for ATA's "lead airline" process as a means of improving the quality of service bulletins referenced in AD's. The objective of this checklist is to stimulate discussions between the lead airline contact and the TCH in reviewing the technical content of service bulletins. The need for fewer AMOC's should result.

2) ATA should define the limits of the lead airline process so that its role in reducing the number of AMOCs is clearly understood. In reviewing an airworthiness concern in which the industry takes an opposing view of the FAA on whether an AD is necessary, the "lead airline" process should nonetheless provide a quality service bulletin in the event the FAA adopts an AD.

3) ATA should revise ATA Specification 100 so that the scope of the approved AMOC for service bulletin revisions is more clearly understood.

Supplemental Structural Inspection Programs

1) For SSIP AD's that require approval of repairs by the manager of the responsible ACO, the FAA should delegate approval of SSIP PSE repairs to the TCH structural DER's.

SECTION 5: DELEGATION IMPLEMENTATION PLAN

Delegation of AMOC approval to the TCH structural DER's is by far the most significant change recommended by the team. This recommendation, if implemented, is new to the applicants, TCH DER's , ACO's and the PMI's. Therefore, an implementation plan designed to ensure a successful transition, reduce potential confusion, and most expeditiously achieve the team's objective of reducing the number of AMOC's were needed.

The team believes that issuance of a Notice describing the new delegation policy and the implementation of that policy is essential. In addition, the guidance material for the PMI's should also be released prior to implementation of this new policy. The Draft Notice and the Draft guidance material are included in Appendices 2 and 3 respectively.

The implementation of the process enhancements recommendations are not time critical and are rather simple to implement. The team has developed the appropriate language changes to implement some of the process enhancement recommendations involving the future AD's.

The issues related to the expansion of TCH DER's authority to approve certain AMOCs are more involved and complex. The team recommends the following implementation plan:

The authorization for a TCH structural DER to approve general deviations or alternative configurations for AD required repairs and modifications shall be in a letter from the cognizant ACO manager to each TCH DER determined to be qualified to make such findings. Specifics of the delegation process shall be provided in a letter from the cognizant ACO manager to the TCH.

The letter to the TCH DERs should include or specify the following:

1. A listing of those ADs for which the FAA has determined that the DER is authorized to make findings (i.e. those ADs that the FAA has determined were intended to restore the airplane to compliance with the airplane type certification basis or other defined airworthiness standard).

2. A statement that the DER is authorized to make these findings for specified models of airplanes for future ADs which contain a statement allowing TCH DER's approval of certain AMOCs.

3. An identification of the standards to be applied for the DER to find compliance and the methods for showing compliance that would be acceptable to the FAA.

4. A statement that these approvals must be granted in accordance with the process detailed in the letter to the TCH (as described below).

The letter to the TCH should include or specify the following:

1. A description of how the ACO will administer oversight and monitoring and of any separate reporting requirements associated with this authorization.

2. A statement that the ACO has the authority to rescind any DER approval that is granted in accordance with this delegation and found to be inappropriate; however, this would be done only after consultation with the operator of the affected airplane and in consideration of the operator's needs.

3. A statement that the authority of individual DERs regarding particular ADs may be limited by subsequent letter to the individual DER.

The listing of ADs should be developed in consideration of operator and manufacturer inputs with priority placed on those ADs that have resulted in the most AMOC requests. The list of ADs may be revised as necessary to include other ADs or to remove ADs, at the ACO's discretion.

In order to standardize the approval process and to ensure recognition that the DER was properly authorized to make such findings, the following minimum standards should be imposed regardless of which ACO grants the authority. The approvals by the DERs must be executed on FAA form 8110-3 and must specify the following:

1) Description of AMOC including the nature of the deviation.
2) AD number and the specific paragraph for which AMOC approval is granted.
3) That the approval meets the applicable sections of the airplane type certification basis or other defined airworthiness standard for that AD.
4) Reference to the FAA letter (reference and date) that granted this authority to that particular DER.
5) A statement as to whether the approval is transferable to a new operator of the affected aircraft.
6) DER signature and date.

For ADs that are issued after the initial identification of eligible ADs and authorized DERs is made, the ACO issuing the AD shall determine whether the intent of the AD is to restore the structure into compliance with the airplane type certification basis or other defined airworthiness standard. If the level of safety intended by the AD does not exceed that defined by the type certification basis or other defined airworthiness standard, then delegation of deviations to DERs should be granted to authorized TCH DER's. If a discretionary level of safety is determined to be required by the ACO manager, then delegation to DERs for that AD is not possible.

If delegation is acceptable, a statement similar to the following should be included in the AD:

"Modify/repair the (item) in accordance with the (service document), or in accordance with other data meeting the certification basis of the airplane (or other defined airworthiness standard) approved by the Manager of the ( ) ACO or by a (type certificate product manufacturer) DER authorized to make such findings."

The ACO should monitor and review such approvals ensuring that they continue to achieve the required level of safety imposed by the AD. The ACO must take appropriate action as necessary to correct any approvals which do not achieve the required level of safety including revocation of the approval and delegation if deemed necessary.

Finally, a notice should be issued to inform all aircraft certification engineers and all flight standards aviation safety inspectors of this policy change, and FAA Order 8110.37A and AD Manual FAA-AIR-M-8040.1 should be revised to include this information.

Delegation Oversight System:

Expansion of AMOC approval delegation to the TCH DERs requires an appropriate oversight system. Currently, the oversight systems which are in place are developed at a local level and are based on agreements between the TCHs and the ACOs. With the expansion of delegation of AMOC approvals, the existing oversight processes should be re-evaluated. The team believes that timely reporting of the AMOC approvals to the ACO is essential to maintain the existing level of safety.

The AMOC team does not recommend a specific process and believes that the ACOs are in a better position to develop such a system. However, for the purposes of standardization, certain key features should be common among all oversight processes. It is clear that prior to any increased delegation, a comprehensive oversight system for monitoring TCHs with this authority must be put into place.

Some of the essential features of a comprehensive system are as follows;

- The TCH shall provide the 8110-3 Form to the ACO within 10 working days of the approval or other time agreed upon between the TCH and the cognizant ACO.

- The operators' maintenance program shall include a system for notification of the PMI by the operator of these approvals.

- The PMI should ensure that the system established by the operator is adequate to ensure timely notification.

The AMOC team believes an oversight system with the above features provides adequate means for the ACO's to monitor the AMOC approval activities by the TCH DER's.

APPENDIX 1:

Team Charter

GROUP 2.

GOAL #2: Develop and implement a more efficient and effective airworthiness system.

CHARTER
INDUSTRY/FAA TEAM
IMPROVE ISSUANCE OF ALTERNATE MEANS OF COMPLIANCE

Objective: Develop industry and FAA methods for reducing the amount of time it time it takes for the air carriers to obtain alternate means of compliance (AMOC) to airworthiness directives while at least maintaining the same level of safety.. The solution must maximize the air carrier's ability to obtain fast turnaround approvals after normal FAA work hours and on the weekend and holidays when the FAA is not in the office. The methods must not result in any increased FAA resources once implemented.

Team Leader:

Team Members:

ATA airlines - 2-3
RAA Airline -1
Aircraft Certification -2
Flight Standards - 2
Regional - 1
Manufacturer - 1

Linking Members: Tom McSweeny, AIR-1
Dave Lotterer, ATA

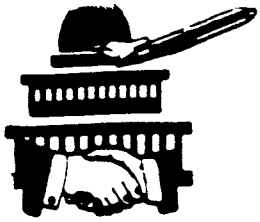
Tasks:

1. Identify the barriers to timely issuance of alternate means of compliance

2. Identify content and where the delays are in obtaining alternate means of compliance. Categorize requests according to routine and special attention and assess using a parieto analysis where the biggest bang for the buck can be made.

3. Identify what legal barriers, if any, there are to delegating some or all alternate means of compliance to Air Carriers and Production Approval Holder DERs as one possible solution.

4. Develop a document summarizing all substantive discussions and issues on the subject and a recommended procedure that meets the objectives. The document should fully justify the recommendation and clearly indicate how it has maximized the solution to all of the known issues.



5. The team shall also develop an executive level briefing paper to be used to brief the Joint Management Team (JMT) and others.

6. Each member of the team must coordinate all issues and recommendations with their organization and consistency to ensure they obtain necessary inputs and buy-in. This includes ADAPT airworthiness concern coordinated procedures task force.

7. Evaluate what can be accomplished for both U.S. produced and foreign produced airplanes.

8. Develop language for the ADs that identify clearly what AMOC findings may be made.

9. Identify changes that must be made to the DER program and guidance to implement the recommended program.

10. Identify what training is necessary for the FAA employees, the DERs and the airlines to implement this program.

11. Identify a plan for implementation of the recommendations throughout the FAA and the industry. That plan must be consistent with the new AIR process for implementing change and take into account the needs within AFS to coordinate such changes with the union.

12. Identify how we can better define the safety objectives of an AD so DOR's can measure the appropriateness of an AMOC.

13. The preference of the JMT is for non-regulatory solutions wherever possible.

14. Define the PMI's role in AMOC's approved by DER's.

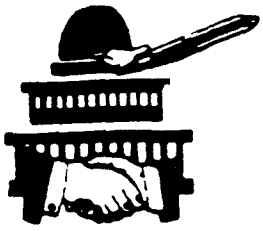
15. Develop a tracking system to assess the effectiveness of team recommendations, if implemented, including any perceived degradation in safety.

16. The team should consider previous problems and history on related issues including how to convey to future owners/operators of the airplane the conditions under which the AMOC was issued.

Considerations

1. Consider delegation of some AMOC findings to PAH and air carriers designees as only one possible solution..

2. It may be that this effort should exclude, fo this time, ADs issued on foreign produced products.



3. There may be some ADs that the FAA wishes to issue all AMOC findings for.

4. Consider the need for quick notification of FAA of the cognizant ACO of all AMOC granted.

5. Is it possible to identify a laundry list of AMOC findings that can be generically granted.

6. Consider that there may be differing levels of delegationsfor air carriers and PAH DOR's.

7. To what degee can FAA further delegate AOC signatue authority within the FAA.

8. Consider the need for a full time facilitator.

9. Consider the legal implications at the PAH.

Timing:

The team should begin within 30 days. A verbal report with handouts, should be presented to the JMT meeting on August 24 identifying progress and issues to

date. The final report is to be presented to the JMT no later than 6 months. The first meeting must be scheduled so that the linking members can attend the first day.

Aviation Rulemaking Advisory Committee; Transport Airplane and Engine Issues

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of establishment of the Alternative Methods of Compliance (AMOC) Working Group.

SUMMARY: Notice is given of the establishment of the Alternative Methods of Compliance (AMOC) Working Group and a new task assigned to the Aviation Rulemaking Advisory Committee (ARAC). This notice informs the public of the activities of ARAC.

FOR FURTHER INFORMATION CONTACT: Stewart R. Miller, Manager, Transport Standards Staff, ANM–110, Transport Airplane Directorate, Federal Aviation Administration, 1601 Lind Avenue, SW., Renton, WA 98055–4056; telephone (206) 227–2190; fax (206) 227–1320.

SUPPLEMENTARY INFORMATION: The Federal Aviation Administration (FAA) has established an Aviation Rulemaking Advisory Committee (ARAC) (56 FR 2190, January 22, 1991; and 58 FR 9230, February 19, 1993). One area the ARAC deals with is transport airplane and engine issues. These issues involve the airworthiness standards for transport category airplanes and engines in 14 CFR parts 25, 33, and 35 and parallel provisions in 14 CFR parts 121 and 135.

Task

The Alternative Methods of Compliance (AMOC) Working Group is charged with the following task and making its recommendations to ARAC:

- Develop industry and FAA methods for improving the timeliness of approvals for alternative methods of compliance with Airworthiness Directives (AD), while maintaining at least the same level of safety.

The objectives of the task are to evaluate the process for issuing alternative means of compliance (AMOC) and to develop recommendations for improving that process in order to accomplish the following:

(1) Improve the timeliness of the AMOC issuance;

(2) Maintain at least the same level of safety achieved under the existing process;

(3) Reduce the need for AMOC while maintaining legal enforceability of ADs;

(4) Standardize the process for issuing AMOCs throughout the FAA; and

(5) Accomplish the foregoing in a cost effective manner for industry and without increasing the need for FAA resources.

ARAC is forming the Alternative Methods of Compliance (AMOC) Working Group to analyze and recommend to its solutions to issues contained in the assigned task. If ARAC accepts the working group's recommendations, it forwards them to the FAA.

ARAC working groups are comprised of technical experts on the subject matter. A working group member need not necessarily be a representative of one of the member organizations of ARAC. An individual who has expertise in the subject matter and wishes to become a member of the working group should write the person listed under the caption **FOR FURTHER INFORMATION CONTACT** expressing that desire, describing his or her interest in the task, and the expertise he or she would bring to the working group. The request will be reviewed by the ARAC assistant chair, the working group leader, and the assistant executive director, and the individual will be advised whether or not the request can be accommodated.

Working Group Reports

Each working group formed to consider an ARAC task is expected to comply with the procedures adopted by ARAC and given to the working group chair. As part of the procedures, the working group is expected to:

A. Recommend a work plan for completion of the task, including rationale for consideration at the meeting of the ARAC to consider transport airplane and engine issues held following publication of this notice.

B. Give a detailed conceptual presentation on the task to the ARAC before proceeding with the task.

C. Give a status report on the task at each meeting of ARAC held to consider transport airplane and engine issues.

The Secretary of Transportation has determined that the formation and use of the ARAC are necessary in the public interest in connection with the performance of duties imposed on the FAA by law. Meetings of ARAC will be open to the public except as authorized by section 10(d) of the Federal Advisory Committee Act. Meetings of the Alternative Methods of Compliance (AMOC) Working Group will not be open to the public, except to the extent that individuals with an interest and expertise are selected to participate. No public announcement of working group meetings will be made.

Issued in Washington, DC, on January 13, 1995.

Chris A. Christie,

Executive Director, Aviation Rulemaking Advisory Committee.

[FR Doc. 95–1544 Filed 1–19–95; 8:45 am]

BILLING CODE 4910-13-M

APPENDIX 2:

Proposed Notice on AMOC Delegation

NOTICE DRAFT December 3, 1995

U.S. Department of Transportation
Federal Aviation Administration

SUBJECT: STRUCTURAL DESIGNATED ENGINEERING REPRESENTATIVE (DER) APPROVALS OF ALTERNATE MEANS OF COMPLIANCE TO AIRWORTHINESS DIRECTIVES (AD) AND AD MANDATED REPAIRS

REFERENCE (reference the ARAC report here)

1. PURPOSE. This notice provides guidance for delegating authority to certain type certificate holder (TCH) Structural Designated Engineering Representatives (DER's) to approve general deviations or alternative configurations for Airworthiness Directive (AD) required repairs and modifications. This delegation can be granted where the FAA determines that the intent of the AD was to restore the airplane found to have damaged structure into compliance with the airplane type certification basis or other identified regulatory airworthiness standard. This guidance will increase standardization of DER authorizations that may be granted by various Aircraft Certification Offices (ACO's) to TCH DERs.

2. DISTRIBUTION. This notice is distributed to the Washington headquarters branch levels of the Aircraft Certification Service; to the branch, section, and staff levels in the Aircraft Certification Directorates; to the Brussels Aircraft Certification Staff; to the branch level in all Aircraft Certification Offices and Field Offices; to Office of the Chief Counsel and Assistant Chief Counsels; to the Washington headquarters branch levels of the Flight Standards Divisions; and to all Aircraft Evaluation Groups.

3. BACKROUND. The Federal Aviation Administration (FAA) has historically not authorized Designated Engineering Representatives (DERs) to approve any deviations to the repairs or modifications mandated by Airworthiness Directives (ADs). This policy was based, in part, on section 314(a) of the FAA Act of 1958 which provides for the Administrator to delegate to any properly qualified person any work, business, or function respecting the examination, inspection, and testing necessary to the issuance of certificates under Title VI of the Act, and the issuance of such certificates in accordance with standards established by the Administrator. Thus, while the Act allows the FAA to delegate to DERs the findings of compliance to known, defined, and published standards established by the FAA, such as 14 CFR Parts 23, 25, 27, 29, 33, and 36, leading to the issuance of certificates, the act does not permit the FAA to delegate discretionary determinations of acceptability, such as those frequently involved in approving deviations from ADs.

A number of initiatives have been undertaken in order to ensure the continued structural integrity of older airplanes. Many of these initiatives have required extensive structural modifications and repairs which have resulted in a substantial increase in the number of AMOC requests for structural ADs and a corresponding increased workload at the cognizant Aircraft Certification Office (ACO). Many of these AMOCs have been for relatively minor deviations to mandated instructions.

In order to respond to the growing number of AMOC requests without compromising safety and customer satisfaction, ACOs in conjunction with the TCHs' Designated Engineering Representatives (DER's) have developed various processes for review and approval of AMOC requests. Although those processes have been working rather well, they are designed to address relatively minor deviations and are not sufficient to respond to an ever increasing number of AMOC requests.

An FAA/Industry Working Group (hereafter referred to as the AMOC team) was formed to review existing processes and find ways to improve them. The AMOC team's objectives were as follows;

A) Improve the timeliness of issuance of AMOC approvals

B) Maintain the same level of safety under the existing system

C) Reduce the need for AMOC while maintaining legal enforceability of the ADs

D) Standardize the process for issuing AMOCs throughout the FAA

E) Accomplish the foregoing in a cost effective manner for industry, and without increasing the need for FAA resources

The AMOC team has completed the assigned tasks and has developed a series of recommendations, which if implemented will satisfy the above objectives. This notice describes one of the recommendations of the AMOC team.

Based on a review of AMOC approvals and on information provided by TCHs and operators, the team concluded that deviations from structural repair/modification ADs create the most problems for the operators and represent the largest AMOC workload that does not involve discretionary determinations of acceptability. The team concluded that the FAA should authorize certain TCH DER's approval authority for AMOCs to structural repair and modification ADs. Extending this authority would significantly reduce the number of AMOC requests submitted to the ACOs for approval. Should this program be successful, the team recommended that the FAA consider extending approval authority to TCH DERs in other areas, such as system and propulsion.

This notice provides guidance for delegating authority to TCH DER's to approve engineering data for general deviations or alternate configurations for AD required repairs

and modifications of individual airplanes. It also provides guidance for delegating authority to DER's to approve certain repairs mandated by AD where no previously ACO approved repair exists. This delegation can be granted where the FAA determines that the intent of the AD was to restore the airplane found to have damaged structure into compliance with the airplane type certification basis or other defined airworthiness standard. Implementation guidelines for a more comprehensive TCH DER oversight and monitoring system necessitated by expanded TCH delegation are included. This guidance will enable the standardization of DER authorizations for approval of deviations from ADs that may be granted by various ACO's.

When the standards required by an AD are well defined, it is possible to delegate approval of any repair (interim or permanent) that may have arisen in conjunction with showing compliance to that AD. If the intent of an AD is to bring the level of safety to that of the certification basis of the airplane, or some other defined standard, then delegation is feasible. TCH DERs can be delegated to approve temporary or interim repairs that are the subject of an AD if the standards required by the AD are well defined and the temporary repairs are fully substantiated. The Limitations section of this Notice contains guidelines for the delegation of approval of AD related temporary or interim repairs.

4. IMPLEMENTATION PROCEDURES. The ACO should determine for which existing structural ADs delegation of general deviations and alternate configurations for AD required repairs and modifications is acceptable. Operator and manufacturer inputs should be considered with priority placed on those ADs which have resulted in the most AMOC requests.

The authorization for TCH DERs to approve general deviations or alternate configurations for AD required repairs and modifications should be in a letter from the cognizant ACO manager to each TCH DER determined to be qualified to make such a finding. Specifics of the delegation process shall be provided in a letter from the cognizant ACO manager to the TCH.

The letter to the TCH DERs should include or specify the following:

A. A listing of those ADs that the FAA has determined that the DER is authorizd to make findings (i.e. those ADs that the ACO has determined were intended to restore the airplane into compliance with the airplane type certification basis or other defined airworthiness standard.).

B. A statement that the DER is authorized to make these findings for specified models of airplanes for future ADs which contain a statement allowing TCH DER's approval of certain AMOCs.

C. An identification of the standards to be applied for the DER to find compliance and the methods for showing compliance that would be acceptable to the FAA. The standard to be applied can be the certification basis of the airplane. However, in some cases it

will be necessary to define a standard not included in the certification basis, by specific Federal Aviation Regulation (FAR).

D. A statement that these approvals must be granted in accordance with the process detailed in the letter to the TCH (as described below).

The letter to the TCH should indicate or specify the following:

A. A description of how the ACO will administer oversight and monitoring and of any separate reporting requirements associated with this authorization.

B. A statement that the ACO has the authority to rescind any DER approval that is granted in accordance with this delegation and found to be inappropriate; however, this would be done only after consultation with the operator of the effected airplane and in consideration of the operator's needs.

C. A statement that the authority of individual DERs regarding particular ADs may be limited by subsequent letter to the individual DER.

The listing of ADs should be developed in consideration of operator and manufacturer inputs with priority placed on those ADs that have resulted in the most AMOC requests. The list of ADs may be revised as necessary to include other ADs or to remove ADs, at the ACO's discretion.

In order to standardize the approval process and to ensure recognition that the DER was properly authorized to make such findings, the following minimum standards should be imposed regardless of which ACO grants the authority. The approvals by the DERs must be executed on FAA form 8110-3 and must specify the following:

A. Description of AMOC including the nature of the deviation
B. AD number and the specific paragraph for which AMOC approval is granted
C. That the approval meets the applicable sections of the airplane type certification basis or other defined airworthiness standard for that AD
D. Reference to the FAA letter (reference and date) that granted this authority to that particular DER
E. DER signature and date

For ADs that are issued after the initial identification of eligible ADs and authorized DERs is made, the ACO issuing the AD shall determine whether the intent of the AD is to restore the structure into compliance with the airplane type certification basis or other defined airworthiness standard. If the level of safety intended by the AD does not exceed that defined by the certification basis or other defined airwothiness standard, then delegation of deviations should be granted to authorized TCH DERs. If a discretionary level of safety is determined to be required by the ACO Manager, then delegation to DERs for that AD is not possible.

If delegation is acceptable, a statement similiar to the following should be included in the AD:

Modify/repair the (item) in accordance with the (service document), or in accordance with other data meeting the certification basis of the airplane (or other defined airworthiness standard) approved by a (type certificate product manufacturer) DER who has been authorized by the Manager of the (cognizant ACO) to make such findings.

The ACO should monitor and review such approvals ensuring that they continue to achieve the required level of safety imposed by the AD. The ACO must take appropriate action as necessary to correct any approvals which do not achieve the required level of safety including revoction of the approval and delegation if deemed necessary.

5. DELEGATION OVERSIGHT SYSTEM.

Expansion of AMOC approval delegation to the TCH DERs requires an appropriate oversight system. Currently, the oversight systems which are in place are developed at a local level and are based on agreements between the TCHs and the ACOs. With the expansion of delegation of AMOC approvals, the existing oversight processes should be re-evaluated. The team believes that a timely reporting of the AMOC approvals to the ACO is essential to maintain the existing level of safety.

The AMOC team does not recommend a specific process and believes that the ACOs are in a better position to develop such a system. However, for the purposes of standardization, certain key features should be common among all oversight processes. It is clear that prior to any increased delegation, a comprehensive oversight system for monitoring TCHs with this authority must be put into place.

Some of the essential features of a comprehensive system are as follows;

A. The TCH shall provide the 8110-3 Form to the ACO within 10 working days of the approval or other time agreed upon between the TCH and the cognizant ACO.

B. The 8110-3 Form will include the following information;

- AD number and paragraph
- Airplane model, serial number and operator
- A description of the AMOC including part names and numbers, part serial number if applicable, description of damage, cracks, repair.

C. The operators' maintenance program shall include a system for notification of the PMI by the operator of these approvals.

D. The PMI should ensure that the system established by the operator is adequate to ensure timely notification.

The AMOC team believes an oversight system with the above features provides adequate means for the ACO's to monitor the AMOC approval activities by the TCH DER's.

6. LIMITATIONS

A) The ACO that initiated the AD is the only ACO that has the authority to approve AMOCs to that AD and is therefore, the only ACO that can delegate that authority to TCH DERs.

B) This delegation is limited to certain TCH Structural DERs to approve general deviations or alternative configurations for Airworthiness Directive (AD) required repairs and modifications. The following cannot be delegated:

- Extensions or adjustments to the compliance times specified in ADs.
- Discretionary judgments of acceptability
- Alternate inspection methods.
- Unrepaired damage, such as corrosion and cracks.
- AMOCs for which analysis or paperwork has yet to be formally submitted.

C) Only TCH DERs with structural authorization shown in FAA Order 8110.37A, Appendix 2., Figure 1., Chart A are eligible for this delegation authority, since only deviations to structural repairs and modifications are being delegated.

D) The delegation must be only for the defined deviations to AD's for repairs and/or modifications to a single aircraft. Approvals of the same AD deviation for multiple airplanes shall not be accomplished by a TCH DER. Requests for an alternate means of compliance to an AD will be submitted to the cognizant ACO Manager.

E) The following guidelines should be followed for the delegation of AD related temporary repairs to TCHs' DERs.

a. Repair must meet the certification basis of the aircraft. It is, however, understood that it may lack certain normally recommended design practices.

b. The durability of the most critical detail of the repair will be at least twice the structural maintenance period and not less than 18 months (based on projected aircraft utilization).

c. Repair would be replaced by a permanent repair (or terminating action in the case of an AMOC) by the next structural maintenance check not to exceed 24 months. Further, the temporary repair must be designed such that its inspection threshold is

greater than its replacement period. In other words there should not be a need for inspection of the repair while it remains installed.

d. TCH whose DER authorizes such repair would be required to:

- Notify the airline of the terms of the life limited DER approved repair for the particular AD. The notification would include a copy of the 8110-3 form indicating DER approval and stating that the approval is time limited and will have to be removed on or before a specific date (or flight cycle limit, time limit etc.).

- Notify the cognizant ACO within 72 hours of such an approval or other time agreed upon between the TCH and the cognizant ACO.

- Keep all records (telex's, stress and life analyses, letters etc.) for a period of time consistent with normal continuing airworthiness record keeping requirements, not less than one year after the removal of said repair from the aircraft.

- Have available the necessary paper work to support any audits that the cognizant ACO deems necessary to oversee the system.

- Follow other ACO/AEG/PMI notification requirements as defined in the delegation oversight system.

The intent of the above guidelines is to revert back to the certification basis of the aircraft which is well defined and the DERs can easily find compliance to the applicable rules. There are situations where a temporary repair may not meet these guidelines, in which case ACO involvement is necessary.

F) The delegating ACO may rescind any AMOC approval granted by a TCH DER; however, this must be done only after consultation with the operator of the effected airplane and in consideration of the operator's needs.

7. TERMINATION OF AUTHORIZATION. The ACO should monitor and review such approvals ensuring that they continue to achieve the required level of safety imposed by the AD. The ACO must take appropriate action as necessary to correct any approvals which do not achieve the required level of safety including revocation of the approval and delegation if deemed necessary. This delegation may be revoked at any time for any reason the ACO manager determines is appropriate.

NOTICE.DOC

APPENDIX 3:

Proposed Guidance Material for the PMI's

ORDER: 8300. 10
APPENDIX: 4 **DRAFT**
ORDER-8300.10

BULLETIN TYPE: FSIB

BULLETIN NUMBER: XXXX

BULLETIN TITLE: Designated Engineering Representatives (DER), Approvals Alternate means of Compliance to Airworthiness Directives (AD's), and AD Mandated Repairs.

1. **PURPOSE:** This FSIB contains information regarding the delegation of authority to certain Type Certificate Holders (TCH), Designated Engineering Representatives (DER's) to approve general deviations or alternative configurations for Airworthiness Directives (AD) required repairs and modifications. This delegation can be granted where the FAA determines that the intent of the AD was to restore the aircraft found to have damaged structure into compliance with the aircraft type certification basis or other defined airworthiness standard.

2. **BACKGROUND:** The Federal Aviation Administration (FAA) has historically not authorized DER's to approve any deviations to the repairs or modifications mandated by AD's This policy was based in part, on section 314(a) of the FAA Act of 1958 which provides for the Administrator to delegate to any properly qualified person any work, business, or function respecting the examination, inspection, and testing necessary to the issuance of certificates under Title VI of the Act, and the issuance of such certificates in accordance with standards established by the Administrator. Thus, while the Act allows the FAA to delegate to DER's the findings of compliance to known, defined, and published standards established by the FAA, such as 14 CFR Parts 23, 25, 27, 29, 33, and 36, leading to the issuance of certificates, the act does not permit the FAA to delegate discretionary determinations of acceptability, such as those frequently involved in approving deviations from AD's.

A number of initiatives have been undertaken in order to ensure the continued structural integrity of older airplanes. Many of these initiatives have required extensive structural modifications and repairs which have resulted in a substantial increase in the number of Alternate Means of Compliance (AMOC) requests and a corresponding increased workload at the cognizant Aircraft Certification Office (ACO). Many of these AMOCs have been for relatively minor deviations to mandated instructions. The existing process for an AMOC request and approval involve coordination and communication among the applicant, Principal Maintenance Inspector (PMI), ACO, and TCH. Within each of the offices involved, there exist additional coordination processes. These processes have proven to be inefficient and have resulted in needless delays in the approval of AMOC's to AD's.

In order to improve the processes and reduce delays, cognizant ACO's have issued authorizations for certain TCH DER's to approve deviations to structural AD's when those deviations are findings of compliance to known defined and published standards established by the FAA.

TCH - DER's do not have the authority to approve AMOC's for different inspection methods, intervals, or multiple airplane approval for the same alternative method.

3. **ACTION:** PMI's should make their assigned operators aware of the availability of certain TCH - DER's authorized to approve AMOC's for structural repairs and modifications. In addition, those operators who choose to use the services of the TCH - DER's for AMOC's should have included in their -manuals a procedure to notify the assigned PMI when application is made to a TCH - DER for an AMOC and to provide a copy of the AMOC and any limitation to the PMI when granted. This would ensure that PMI's are knowledgeable of the status of applicable AD's and AMOC's that could have an impact on the operator's continuous airworthiness maintenance program.

4. **INQUIRIES:** XXXX

5. **EXPIRATION:** XXXX

APPENDIX 4:

Proposed AMOC Request Checklist

APPLICATION FOR AMOC APPROVAL

NAME OF APPLICANT:

MAILING ADDRESS:

NAME OF CONTACT:

PHONE:

FAX:

AFFECTED AIRPLANE MODEL & SERIES:

FUSELAGE OR SERIAL NUMBER(S):

AD NUMBER:

AD PARAGRAPH NUMBER(S) AND SPECIFIC PROVISION(S) FOR WHICH AMOC IS PROPOSED:

NEED DATE:

REASON(S) FOR AMOC:

DETAILED DESCRIPTION OF AMOC (ATTACH DRAWINGS, ETC. AS APPLICABLE):

JUSTIFICATION OF AMOC AS PROVIDING ACCEPTABLE LEVEL OF SAFETY:

OTHER INFORMATION (OPTIONAL):

HAS COPY OF APPLICATION BEEN PROVIDED TO PMI? Y___ N___

WOULD APPLICANT OBJECT TO PUBLIC DISCLOSURE OF AMOC? Y___ N___

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. 28930; Amdt. No. 25–98]

RIN 2120–AF82

Revision of Gate Requirements for High-Lift Device Controls

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This action amends the airworthiness standards for transport category airplanes to revise the requirements concerning gated positions on the control used by the pilot to select the position of an airplane's high-lift devices. The FAA is taking this action to update the current standards to take into account the multiple configurations of the high-lift devices provided on current airplanes to perform landings and go-around maneuvers. This final rule also harmonizes these standards with those being adopted by the European Joint Aviation Authorities (JAA).

EFFECTIVE DATE: March 10, 1999.

FOR FURTHER INFORMATION CONTACT: Don Stimson, FAA, Airplane and Flight Crew Interface Branch, ANM–111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, WA 98055–4056; telephone (425) 227–1129; facsimile (425) 227–1320, e-mail Don.Stimson@faa.gov.

SUPPLEMENTARY INFORMATION:

Availability of Final Rule

An electronic copy of this document may be downloaded using a modem and suitable communications software from the FAA regulations section of the FedWorld electronic bulletin aboard service (telephone: 703–321–3339), the Government Printing Office's electronic bulletin board service (telephone: 202–512–1661), or the FAA's Aviation Rulemaking Advisory Committee Bulletin Board service (telephone: 800–322–2722 or 202–267–5948).

Internet users may reach the FAA's web page at http://www.faa.gov/avr/arm/nprm/nprm.htm or the Government Printing Office's web page at http://www.access.gpo.gov/nara for access to recently published rulemaking documents.

Any person may obtain a copy of this document by submitting a request to the Federal Aviation Administration, Office of Rulemaking, ARM–1, 800 Independence Avenue, SW., Washington, DC 20591, or by calling (202) 267–9680. Communications must reference the amendment number or docket number of this final rule.

Persons interested in being placed on the mailing list for future notices of proposed rulemaking and final rules should request from the above office a copy of Advisory Circular (AC) No. 11–2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedure.

Small Entity Inquiries

The Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA) requires the FAA to report inquiries from small entities concerning information on, and advice about, compliance with statutes and regulations within the FAA's jurisdiction, including interpretation and application of the law to specific sets of facts supplied by a small entity.

The FAA's definitions of small entities may be accessed through the FAA's web page (http://www.faa.gov/avr/arm/sbrefa.htm), by contacting a local FAA official or by contacting the FAA's Small Entity Contact listed below.

If you are a small entity and have a question, contact your local FAA official. If you do not know how to contact your local FAA official, you may contact Charlene Brown, Program Analyst Staff, Office of Rulemaking, ARM–27, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591, 1–888–551–1594. Internet users can find additional information on SBREFA in the "Quick Jump" section of the FAA's web page at http://www.faa.gov/avr/arm/sbrefa.htm and may send electronic inquiries to the following Internet address: 9–AWA–SBREFA@faa.gov.

Background

Section 25.145(c) of 14 CFR part 25 of the Federal Aviation Regulations prescribes conditions under which it must be possible for the pilot, without using exceptional piloting skill, to prevent losing altitude while retracting the airplane's high-lift devices (e.g., wing flaps and slats). The intent of this requirement is to ensure that during a go-around from an approach to landing, the high-lift devices can be retracted at a rate that prevents altitude loss if the pilot applies maximum available power to the engines at the same time the control lever is moved to begin retracting the high-lift devices.

Prior to Amendment 25–23 to part 25, the §25.145(c) requirement applied to retractions of the high-lift devices from any initial position to any ending position, including a continuous retraction from the fully extended position to the fully retracted position. In Amendment 25–23 to part 25, the FAA revised this requirement to allow the use of segmented retractions if gates are provided on the control the pilot uses to select the high-lift device position.

Gates are devices that require a separate and distinct motion of the control before the control can be moved through a gated position. The purpose of the gates is to prevent pilots from inadvertently moving the high-lift device control through the gated position. Gate design requirements were introduced into part 25 with Amendment 25–23, which revised §25.145(c) to allow the no altitude loss requirement to be met by segmented retractions of the high-lift devices between gated positions of the high lift devices. As amended by Amendment 25–23, §25.145(c) specifies that the no altitude loss requirement applies to retractions of the high-lift devices between the gated positions and between the gates and the fully extended and fully retracted positions. In addition, the first gated control position from the landing position must correspond to the position used to establish the go-around procedure from the landing configuration.

In Notice of Proposed Rulemaking 97–9, which was published in the **Federal Register** on June 9, 1997 (62 FR 31482), the FAA proposed to update the gate design standards to clarify which positions of the high-lift device control should be gated and to harmonize these standards with those being proposed for the European Joint Airworthiness Requirements (JAR–25). The proposal contained in Notice 97–9 was originally developed by the Aviation Rulemaking Advisory Committee (ARAC) and presented to the FAA as a recommendation for rulemaking.

The Aviation Rulemaking Advisory Committee

The ARAC was formally established by the FAA on January 22, 1991 (56 FR 2190), to provide advice and recommendations concerning the full range of the FAA's safety-related rulemaking activity. This advice was sought to develop better rules in less overall time using fewer FAA resources than are currently needed. The committee provides the opportunity for the FAA to obtain firsthand information and insight from interested parties regarding proposed new rules or revisions of existing rules.

There are over 60 member organizations on the committee,

representing a wide range of interests within the aviation community. Meetings of the committee are open to the public, except as authorized by section 10(d) of the Federal Advisory Committee Act.

The ARAC establishes working groups to develop proposals to recommend to the FAA for resolving specific issues. Tasks assigned to working groups are published in the **Federal Register**. Although working group meetings are not generally open to the public, all interested parties are invited to participate as working group members. Working groups report directly to the ARAC, and the ARAC must concur with a working group proposal before that proposal can be presented to the FAA as an advisory committee recommendation.

The activities of the ARAC will not, however, circumvent the public rulemaking procedures. After an ARAC recommendation is received and found acceptable by the FAA, the agency proceeds with the normal public rulemaking procedures. Any ARAC participation in a rulemaking package will be fully disclosed in the public docket.

Discussion of the Proposals

In Notice 97–9, the FAA proposed to update the gate design standards to clarify which positions of the high-lift device control should be gated and to harmonize these standards with those being proposed for the European Joint Airworthiness Requirements. First, the FAA proposed to re-codify the gate requirements of § 25.145(c) as a new § 25.145(d). Second, the FAA proposed to update and clarify the requirement that the first gated control position from the landing position corresponds to the configuration used to execute a go-around from an approach to landing. Third, the FAA proposed to clarify that performing a go-around maneuver beginning from any approved landing configuration should not result in a loss of altitude, regardless of the location of gated control positions. Fourth, the FAA proposed to add a statement to clarify that the "separate and distinct motion" required to move the high-lift device control through a gated position must be made at that gated position.

The existing gate requirements are contained in a separate, but undesignated paragraph at the end of § 25.145(c). To be consistent with current codification practices, the FAA proposed to re-codify these requirements as a new § 25.145(d). Re-codification would not affect the content or intent of the requirement.

Currently, § 24.145(c) requires the first gated control position from the landing position to "correspond with the high-lift devices configuration used to establish the go-around procedure from the landing configuration." The wording of this requirement implies that airplanes have only one configuration that can be used for landing and one configuration that can be used to perform a go-around maneuver. Modern transport category airplanes, however, typically have multiple configurations that can be used for performing a landing or a go-around. Airplane manufacturers provide multiple landing and go-around configurations to optimize airplane performance for different environmental conditions (e.g., field elevation and temperature) and for non-normal situations (e.g., inoperative engines or systems).

To provide for airplanes with multiple landing and go-around configurations, the FAA proposed to revise the portion of the gate requirements relating to the placement of the first gated control position from the landing position by inserting the word "maximum" preceding "landing position" and by replacing "the high-lift devices configuration" and the go-around procedure" with "a configuration of the high-lift devices" and "a go-around procedure," respectively. The FAA considered allowing the location of the flap gates to be made independent of the go-around position; however, from a human factors standpoint, providing a gate at a go-around position assists the pilot in selecting the proper configuration for a maneuver that is usually unexpected and entails a high workload. The FAA considers that requiring a gate at every approved go-around position would also be undesirable. Too many gates would make it difficult for the pilot to move the control through high-lift device positions that might not be used during normal operations. For go-around maneuvers using a different high-lift device position than the position that is gated, the gate can still serve as a guide for selecting the proper configuration (e.g., the pilot could move the control to the gate and either forward or backward one or more positions).

The FAA also proposed a revision to Advisory Circular (AC) 25–7, "Flight Test Guide for Certification of Transport Category Airplanes" (June 17, 1997, 62 FR 32852) to provide additional guidance regarding criteria for locating the gate when the airplane has multiple go-around configurations.

Regardless of the location of any gates, initiating a go-around from any of the approved landing configurations should not result in a loss of altitude. Therefore, the FAA proposed to further revise the existing gate standards to require applicants to demonstrate that no less altitude will result from retracting the high-lift devices from each approved landing position to the position(s) corresponding with the high-lift device configuration(s) used to establish the go-around procedure(s) from that landing configuration.

The existing § 25.145(c) also requires that a separate and distinct movement of the high-lift device control must be made to pass through a gated position. The FAA proposed to further clarify the gate design criteria in the proposed § 25.145(d) to specify that this separate and distinct movement can occur only at the gated position. This provision would ensure that the pilot receives tactile feedback when the control reaches a gated position. Although the FAA has always interpreted the current requirements in a manner consistent with this provision, this proposal will assist applicants by clarifying the part 25 design requirements for gated high-lift device control positions.

The amendments proposed in Notice 97–9 were harmonized with proposed amendments to JAR–25. The Joint Aviation Authorities published Notice of Proposed Amendment (NPA) 25B–238 on June 20, 1997, which, in combination with the proposed part 25 changes, would achieve complete harmonization of the affected positions of part 25 and JAR–25.

Discussion of Comments

Very few comments were received on the part 25 rule changes proposed by the FAA in Notice 97–9. Three of the commenters, which were organizations represented in the ARAC process that developed these proposals, expressed their support for the proposals. One of these commenters noted that the ARAC process was highly successful in developing a better proposal than what was envisaged at the beginning of the process, did so in a very short period of time, and ended up with a proposal that was unanimously supported by all the participants. This commenter expressed hope that the FAA will continue to make improvements in the process to develop rules in less overall time.

One commenter, whose organization was also represented in the ARAC deliberations, expressed support for the proposals, but also suggested several changes be made. First, the commenter notes that § 25.145 uses both terms "wing flaps" and "high lift devices." The commenter suggests standardizing on the single term "high lift devices" throughout.

Second, the commenter alleges that the FAA proposal differs from the JAA proposal relative to the position of the first gated position from the maximum landing position. The commenter claims that the FAA proposal would require the gate to correspond with the configuration used to establish a go-around procedure from "the" landing position, implying that the landing position is the maximum position. The commenter notes that the JAA proposal refers to "a" landing position, which the commenter believes allows the optimum gate position to be chosen when there are multiple landing configurations.

Third, the commenter notes that there is no reference within part 25 regarding the relationship between the configuration for the missed approach (§§ 25.101(g) and 25.121(d)) and the configuration used for go-around (proposed § 25.145(d)). Since these configurations can be different, the commenter believes that the definitions and procedures should be clarified. The commenter did not fully explain why such clarification is needed, nor were any specific suggestions provided.

Last, the commenter notes that there could be a landing flap position at a lesser flap angle than the gated go-around position. Under the proposed rules, there would not be a requirement to have any gates between that position and the clean configuration. This could lead to an inadvertent retraction of the high lift leading edge devices (e.g., slats) during a go-around, which the commenter believes may be a hazardous event even if the "don't sink" requirement is met.

Although the FAA agrees in principle with the commenter's first suggestion, to standardize on a single term, this issue is outside the scope of the proposed rulemaking. The terms "flaps," "wing flaps," and "high lift devices" are used in other part 25 sections in addition to § 25.145, and any attempt to standardize these terms should include a thorough review of these other sections. The objective of this rulemaking is to clarify and harmonize the requirements regarding gates on the high lift device control, taking into account current airplane designs.

Regarding the commenter's second suggestion, the commenter is incorrect in stating that the FAA and JAA proposals are different. The FAA and JAA proposals are exactly the same; they both contain the wording that the commenter prefers. In fact, it is the existing § 25.145(c) and JAR 25.145 that contain the wording the commenter is objecting to, which the FAA and JAA proposed to revise due to the issue raised by the commenter.

The commenter is correct in stating that there is no reference within part 25 regarding the relationship between the configuration for the missed approach (used to comply with §§ 25.101(g) and 25.121(d)) and the configuration used for go-around (used to comply with § 25.145(d)). Although a single configuration is typically specified by the applicant for both situations, the commenter points out that this is not a part 25 requirement. The FAA disagrees that further clarification of the definitions and procedures associated with the missed approach and go-around configurations is necessary. The configuration associated with a missed approach is specifically defined in § 25.121(d), which refers to an approach configuration prior to selection of the landing configuration. The go-around configuration, which is used to show compliance with § 25.145(d), is the climb configuration referenced in the procedures for a balked landing from the landing configuration. The references to and relationships between these configurations have not been changed by this rulemaking.

The issue brought up by the commenter's last suggestion was considered during the development of the proposed rule. However, a specific requirement to place a gate at the position preceding the one at which the wing's leading edge high lift devices (e.g., slats) retract was considered to be too prescriptive. The performance effect of retracting the wing's leading edge high lift devices can vary significantly, depending on the design of the high lift system on the particular airplane. Other than the "no loss of altitude" provision of § 25.145(c), it is difficult to quantify a minimum performance requirement that would appropriately address any safety concerns with an inadvertent leading edge device retraction. The FAA considers the "no loss of altitude" criterion, coupled with industry design practice, to adequately address this issue.

A commenter who was not involved in the ARAC process leading to the proposed amendment suggests that a gate should be required at all approved go-around positions of the high lift devices, rather than at "a" go-around position. This commenter believes that from a human factors standpoint the benefits of maintaining a consistent procedure for selecting the go-around configuration outweigh any drawbacks associated with having too many gates.

The FAA addressed this issue in the preamble of the proposed amendment (which is repeated in the background discussion above). The FAA considers that requiring a gate at every approved go-around position would be undesirable. Too many gates would make it difficult for the pilot to move the control through high-lift device positions that might not be used during normal operations. For go-around maneuvers using a different high-lift device position than the position that is gated, the gate can still serve as a guide for selecting the proper configuration (e.g., the pilot could move the control to the gate and either forward or backward one or more positions).

Although the FAA generally agrees that from a human factors standpoint a consistent operational procedure is desirable, this objective would not necessarily be achieved even if the commenter's suggestion were adopted. For a typical transport category airplane with multiple go-around positions requiring multiple gates, the procedure for selecting the desired go-around configuration may involve moving the selector to the first gate, through a gate to another gate, or through multiple gates to the gate corresponding to the desired configuration. Such a procedure is roughly equivalent to moving the control to the gate and either forward or backward one or more positions to select the desired configuration. The FAA does not consider the presence of multiple gates to provide enough of an enhancement to the flightcrew's ability in selecting the proper configuration to outweigh the potential drawbacks associated with the need to negotiate the control through multiple gates during normal operations.

In light of the foregoing discussion, the amendment is adopted as proposed.

Final Regulatory Evaluation, Initial Regulatory Flexibility Determination, and Trade Impact Assessment

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Office of Management and Budget directs agencies to assess the effects of regulatory changes on international trade. And fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of

$100 million or more annually (adjusted for inflation). In conducting these analyses, the FAA has determined that this rule: (1) will generate benefits that justify its costs and is not a "significant regulatory action" as defined in the Executive Order; (2) is not "significant" as defined in DOT's Regulatory Policies and Procedures; (3) will not have a significant impact on a substantial number of small entities; (4) will lessen restraints on international trade; and (5) does not contain a significant intergovernmental or private sector mandate. These analyses, available in the docket, are summarized below.

Regulatory Evaluation Summary

U.S. manufacturers currently design high-lift device controls in compliance with the final rule. Industry representatives indicate that U.S. manufacturers will not have to redesign high-lift device controls on either newly certificated airplanes or derivatives of currently certificated models. The costs of the rule, therefore, will be negligible. The FAA solicited information from manufacturers of transport category airplanes concerning any possible design changes and associated costs that would result from the proposed amendment. No comments were received concerning these matters.

The primary benefit of the rule is the clarification of gate design standards of high-lift device controls. A second benefit is the harmonization of FAR certification requirements for controls of high-lift devices with JAR certification requirements, and this benefit may result in cost savings to manufacturers of transport category airplanes in the United States and in JAA countries. Although the FAA is unable to quantify these benefits, the FAA has determined that these benefits exceed the negligible costs of the final rule.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation." To achieve that principle, the Act requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions. The Act covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposal or final rule will have a significant economic impact on a substantial number of small entities. If the determination is that it will, the agency must prepare a regulatory flexibility analysis as described in the Act.

However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the 1980 act provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear. For manufacturers, a small entity is one with 1,500 or fewer employees. No transport category airplane manufacturer has 1,500 or fewer employees, thus there are no affected small entities. In addition, the rule has negligible costs. Consequently, the FAA certifies that the rule will not have a significant economic impact on a substantial number of small transport category airplane manufacturers.

International Trade Impact Assessment

Consistent with the Administration's belief in the general superiority, desirability, and efficacy of free trade, it is the policy of the Administrator to remove or diminish, to the extent feasible, barriers to international trade, including both barriers affecting the export of American goods and services to foreign countries, and those affecting the import of foreign goods and services into the United States.

In accordance with that policy, the FAA is committed to develop, as much as possible, its aviation standards and practices in harmony with its trading partners. Significant cost savings can result from this, both to American companies doing business in foreign markets, and foreign companies doing business in the United States.

This rule is a direct action to respond to this policy by increasing the harmonization of the U.S. Federal Aviation Regulations with the European Joint Aviation Requirements. The result will be a positive step toward removing impediments to international trade.

Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104–4 on March 22, 1995, requires each Federal agency, to the extent permitted by law, to prepare a written assessment of the effects of any Federal mandate in a proposed or final agency rule that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more (adjusted annually for inflation) in any one year. Section 204(a) of the Act, 2 U.S.C. 1534(a), requires the Federal agency to develop an effective process to permit timely input by elected officers (or their designees) of State, local, and tribal governments on a proposed "significant intergovernmental mandate." A "significant intergovernmental mandate" under the Act is any provision in a Federal agency regulation that will impose an enforceable duty upon State, local, and tribal governments, in the aggregate, of $100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533, which supplements section 204(a), provides that before establishing any regulatory requirements that might significantly or uniquely affect small governments, the agency shall have developed a plan that, among other things, provides for notice to potentially affected small governments, if any, and for a meaningful and timely opportunity to provide input in the development of regulatory proposals.

The rule does not contain any Federal intergovernmental or private sector mandate. Therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

Federalism Implications

The regulations adopted herein will not have substantial direct effects on the States, on the relationship between the national government and the States, or the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this rule will not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to comply with ICAO Standards and Recommended Practices to the maximum extent practicable. The FAA has determined that this rule does not conflict with any international agreement of the United States.

Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying regulations in Title 14 of the CFR in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by

transportation modes other than aviation, and to establish such regulatory distinctions as he or she considers appropriate. Because this final rule applies to the certification of future designs of transport category airplanes and their subsequent operation, it could affect intrastate aviation in Alaska. The Administrator has considered the extent to which Alaska is not served by transportation modes other than aviation, and how the final rule could have been applied differently to intrastate operations in Alaska. However, the Administrator has determined that airplanes operated solely in Alaska would present the same safety concerns as all other affected airplanes; therefore, it would be inappropriate to establish a regulatory distinction for the intrastate operation of affected airplanes in Alaska.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The Amendment

In consideration of the foregoing, the Federal Administration (FAA) amends part 25 of Title 14, Code of Federal Regulations (14 CFR part 25) as follows:

PART 25—AIRWORTHINESS STANDARDS—TRANSPORT CATEGORY AIRPLANES

1. The authority citation for part 25 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701–44702, 44704.

2. Section 25.145 is amended by revising paragraph (c) introductory text, revising the text following paragraph (c)(3), and designating the text as paragraph (d) to read as follows:

§ 25.145 Longitudinal control.

* * * * *

(c) It must be possible, without exceptional piloting skill, to prevent loss of altitude when complete retraction of the high-lift devices from any position is begun during steady, straight, level flight at 1.1 V_{S1} for propeller powered airplanes, or 1.2V_{S1} for turbojet powered airplanes, with—

(1) * * *

(2) * * *

(3) * * *

(d) if gated high-lift device control positions are provided, paragraph (c) of this section applies to retractions of the high-lift devices from any position from the maximum landing position to the first gated position, between gated positions, and from the last gated position to the fully retracted position. The requirements of paragraph (c) of this section also apply to retractions from each approved landing position to the control position(s) associated with the high-lift device configuration(s) used to establish the go-around procedure(s) from that landing position. In addition, the first gated control position from the maximum landing position must correspond with a configuration of the high-lift devices used to establish a go-around procedure from a landing configuration. Each gated control position must require a separate and distinct motion of the control to pass through the gated position and must have features to prevent inadvertent movement of the control through the gated position. It must only be possible to make this separate and distinct motion once the control has reached the gated position.

Issued in Washington, DC, on February 3, 1999.

Jane F. Garvey,

Administrator.

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