

experimental variability and repeatability. As a result, this approach would necessitate a larger number of PQD tests (relative to confirming the applicability of the regulatory guide). Analytical limits, along with the experimental procedures, protocols, and specimen test results used in their development, would be subject to NRC review and approval.

This approach would require that the PQD test results on irradiated cladding segments documented in NUREG/CR-6967 be considered in the development of analytical limits. Deviations in cladding performance relative to this empirical database must be identified and dispositioned.

#### *Existing Cladding Alloys*

In the case of existing cladding alloys, the rule may specify the following performance requirement to ensure an adequate retention of cladding ductility:

Accumulation of  $\geq 1.00$  percent permanent strain prior to failure during ring-compression loading at a temperature of 135 °C and a displacement rate of 0.033 mm/sec on a cladding specimen exposed to double-sided steam oxidation up to a specified peak oxidation temperature and CP-ECR.

Analytical limits on allowable time-at-temperature (CP-ECR) and peak cladding temperature would need to be defined as a function of initial cladding hydrogen content (wppm in metal) to demonstrate this performance requirement is met. A topical report (TR) would be generated to document the basis for the new analytical limits. Existing alloys which were included in the NRC high-burnup research program may reference the test results documented in NUREG/CR-6967 in the development of new analytical limits. This data was generated following experimental protocols acceptable to the NRC, so no further justification related to its validity would be required.

Using an approved hydrogen uptake model for an existing cladding alloy, the TR would provide the methodology to convert the hydrogen-based analytical limits to some unit of measure more readily applied within reload safety analyses (e.g., fuel rod burnup or fuel duty). Uncertainties related to hydrogen uniformity and uncertainties introduced by the conversion from hydrogen to another unit of measure would need to be addressed.

#### *New Cladding Alloys*

In the case of new cladding alloys, the rule may specify the following performance requirement to ensure an adequate retention of cladding ductility:

Accumulation of  $\geq 1.00$  percent permanent strain prior to failure during ring-compression loading at a temperature of 135 °C and a displacement rate of 0.033 mm/sec on a cladding specimen exposed to double-sided steam oxidation up to a specified peak oxidation temperature and CP-ECR.

Analytical limits on allowable time-at-temperature (CP-ECR) and peak cladding temperature would need to be defined as a function of initial cladding hydrogen content (wppm in metal) to demonstrate this performance requirement is met. A TR would be generated to document the basis for the

new analytical limits. The PQD test results on irradiated cladding segments documented in NUREG/CR-6967 would need to be considered in the development of analytical limits. PQD testing would be required to (1) establish analytical limits in accordance with the performance requirements that would be specified within the rule, and (2) demonstrate the applicability of the NUREG/CR-6967 empirical database. A TR could document that the PQD testing had been conducted to strictly adhere to the accepted experimental protocols documented in regulatory guidance documents, or if alternative testing procedures were used, then NRC review and approval of those laboratory procedures would be required.

For this approach, defining analytical limits for new cladding alloys would likely require testing at a range of hydrogen contents, with ring-compression test results at multiple calculated oxidation levels. Test samples with calculated oxidation levels sufficient to display brittle behavior, as well as test samples with calculated oxidation levels which display ductile behavior, would be necessary to define the transition from ductile to brittle behavior. Regulatory guidance would be provided to address the variability in measured offset strain of ring-compression test results. Section IV of this ANPR specifically seeks comment on the treatment of variability in ductility measurements of ring-compression tests. The range of hydrogen contents in test samples required may be limited by proposing cladding hydrogen design limits based on hot cell examinations of irradiated samples of the new cladding alloy following lead test assembly campaigns.

#### *Multifaceted Analytical Limits*

Recognizing that higher burnup fuel rods (with higher hydrogen concentrations) operate at a reduced power level (relative to lower burnup fuel rods), defining analytical limits for maximum allowable ECR at multiple peak oxidation temperatures would also be possible. For example, a TR could document the results of testing conducted at peak oxidation temperatures of 2200 °F (1204 °C), 2000 °F (1093 °C), and 1800 °F (982 °C), which are targeted at low burnup (low corrosion), medium burnup (medium corrosion), and high burnup (high corrosion) fuel rods, respectively. Testing to support these new limits would require testing at a range of hydrogen contents, with ring-compression test results at multiple calculated oxidation levels to define the transition from ductile to brittle behavior. In this case, it may be necessary to elect to strictly adhere to the accepted experimental protocols documented in regulatory guidance documents, thereby limiting regulatory exposure related to testing procedures and the validity of the data.

Implementation of the multifaceted analytical limits would require separating all of the fuel rods in the core into three categories and then ensuring that all fuel rods within each category satisfies their respective analytical limits on both CP-ECR and PCT. While it is anticipated that this approach would provide flexibility, it would also necessitate a more complex LOCA analysis

and reload-by-reload confirmation. This approach also relies on tacit assumptions regarding the currently approved LOCA model's ability to accurately simulate the thermal-hydraulic conditions in every region of the reactor core (as opposed to simulating a core average response or pseudo hot channel location). Modeling uncertainties with respect to predicting local conditions throughout the reactor core would need to be addressed.

Using an approved hydrogen uptake model for a new cladding alloy, the TR would need to provide the methodology to convert the hydrogen-based analytical limits to some unit of measure more readily applied within reload safety analyses (e.g., fuel rod burnup or fuel duty). Uncertainties related to hydrogen uniformity and uncertainties introduced by the conversion from hydrogen to another unit of measure would need to be addressed.

For this description, it is assumed that sufficient justification for the use of hydrogen charged cladding specimens has been accepted as a surrogate for testing on irradiated cladding segments. If sufficient justification for the use of hydrogen charged cladding specimens has not been accepted as a surrogate for testing on irradiated cladding segments, approving new cladding alloys would require PQD testing of irradiated material. Section IV of this ANPR requests information on any ongoing or planned testing aimed at validating this pre-hydrated surrogate.

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2009-0713; Directorate Identifier 2007-NM-303-AD]

RIN 2120-AA64

#### **Airworthiness Directives; Airbus Model A318 Series Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of Proposed Rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for the products listed above. This proposed AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

Some operators have reported airframe vibration under specific flight conditions including gusts.

Investigations have revealed that under such conditions, vibrations may occur when

the hinge moment of the elevator is close to zero, associated to elevator free-play.

\* \* \* \* \*

The unsafe condition is excessive vibration of the elevators, which could result in reduced structural integrity and reduced controllability of the airplane.

**DATES:** We must receive comments on this proposed AD by September 14, 2009.

**ADDRESSES:** You may send comments by any of the following methods:

- **Federal eRulemaking Portal:** Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- **Fax:** (202) 493-2251.
- **Mail:** U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- **Hand Delivery:** U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-40, 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

#### Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Tim Dulin, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2141; fax (425) 227-1149.

#### SUPPLEMENTARY INFORMATION:

##### Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA-2009-0713; Directorate Identifier 2007-NM-303-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the

closing date and may amend this proposed AD based on those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

#### Discussion

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA Airworthiness Directive 2007-0163, dated June 11, 2007 (referred to after this as "the MCAI"), to correct an unsafe condition for the specified products. The MCAI states:

Some operators have reported airframe vibration under specific flight conditions including gusts.

Investigations have revealed that under such conditions, vibrations may occur when the hinge moment of the elevator is close to zero, associated to elevator free-play.

\* \* \* \* \*

The unsafe condition is excessive vibration of the elevators, which could result in reduced structural integrity and reduced controllability of the airplane. The corrective action includes inspecting the elevators for excessive freeplay and repairing the elevator or servo controls, if necessary. You may obtain further information by examining the MCAI in the AD docket.

#### FAA's Determination and Requirements of This Proposed AD

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design Authority, we have been notified of the unsafe condition described in the MCAI. We are proposing this AD because we evaluated all pertinent information and determined an unsafe condition exists and is likely to exist or develop on other products of the same type design.

#### Differences Between This AD and the MCAI or Service Information

We have reviewed the MCAI and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI.

We might also have proposed different actions in this AD from those in the MCAI in order to follow FAA

policies. Any such differences are highlighted in a NOTE within the proposed AD.

#### Costs of Compliance

We estimate that this proposed AD would affect about 11 products of U.S. registry. We also estimate that it would take about 2 work-hours per product to comply with the basic requirements of this proposed AD. The average labor rate is \$80 per work-hour. Based on these figures, we estimate the cost of the proposed AD on U.S. operators to be \$1,760, or \$160 per product.

#### Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

#### Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Safety.

**The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

**PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new AD:

**Airbus:** Docket No. FAA-2009-0713; Directorate Identifier 2007-NM-303-AD.

**Comments Due Date**

(a) We must receive comments by September 14, 2009.

**Affected ADs**

(b) None.

**Applicability**

(c) This AD applies to all Airbus Model A318 series airplanes; certificated in any category.

**Subject**

(d) Air Transport Association (ATA) of America Code 27: Flight Controls.

**Reason**

(e) The mandatory continuing airworthiness information (MCAI) states:

“Some operators have reported airframe vibration under specific flight conditions including gusts.

“Investigations have revealed that under such conditions, vibrations may occur when the hinge moment of the elevator is close to zero, associated to elevator free-play.”

\* \* \* \* \*

The unsafe condition is excessive vibration of the elevators, which could result in reduced structural integrity and reduced controllability of the airplane. The corrective action includes inspecting the elevators for excessive freeplay, and repairing the elevator or servo controls, if necessary.

**Actions and Compliance**

(f) Unless already done, do the following actions.

(1) At the later of the times specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this AD, inspect the elevators for excessive freeplay, using a load application tool and a spring scale assembly, in accordance with a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the European Aviation Safety Agency (EASA) (or its delegated agent). Repeat the inspection at intervals not to exceed 20 months.

**Note 1:** Guidance on the inspection procedures can be found in Task 27-34-00-

200-001 of the A318/A319/A320/A321 Aircraft Maintenance Manual (AMM).

(i) Within 20 months since the date of issuance of the original French, German, or EASA airworthiness certificate or the date of issuance of the original French, German, or EASA export certificate of airworthiness, or within 3 months after the effective date of this AD, whichever occurs later.

(ii) Within 20 months since the last inspection of the elevators for excessive freeplay performed in accordance with Task 27-34-00-200-001 of the Airbus A320 Airplane Maintenance Manual.

(2) If any inspection required by paragraph (f)(1) of this AD indicates that the freeplay in the elevator exceeds 7 millimeters, before further flight, repair the elevator or servo controls in accordance with a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the EASA (or its delegated agent).

**FAA AD Differences**

**Note 2:** This AD differs from the MCAI and/or service information as follows:

(1) The EASA AD applies to Airbus Model A318, A319, A320, and A321 series airplanes, but the FAA AD applies only to Airbus Model A318 series airplanes. The actions required by the EASA AD for Airbus Model A319, A320, and A321 series airplanes are addressed in FAA AD 2001-16-09, amendment 39-12377, and FAA AD 2005-22-10 R1, amendment 39-14354.

(2) This FAA AD does not require modification of the elevator neutral setting as specified in paragraph 2. of the EASA AD because this modification is already part of the FAA-approved type design for Airbus Model A318 series airplanes.

(3) This FAA AD does not require a detailed inspection to determine the position of each tail cone triangle as specified in paragraph 3. of the EASA AD because that action was already accomplished on all Airbus Model A318 series airplanes during production.

**Other FAA AD Provisions**

(g) The following provisions also apply to this AD:

(1) **Alternative Methods of Compliance (AMOCs):** The Manager, International Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Tim Dulin, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2141; fax (425) 227-1149. Before using any approved AMOC on any airplane to which the AMOC applies, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office.

(2) **Airworthy Product:** For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority

(or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(3) **Reporting Requirements:** For any reporting requirement in this AD, under the provisions of the Paperwork Reduction Act, the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120-0056.

**Related Information**

(h) Refer to MCAI EASA Airworthiness Directive 2007-0163, dated June 11, 2007, for related information.

Issued in Renton, Washington, on August 3, 2009.

**Ali Bahrami,**

*Manager, Transport Airplane Directorate, Aircraft Certification Service.*

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**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 39**

[Docket No. FAA-2009-0712; Directorate Identifier 2007-NM-152-AD]

RIN 2120-AA64

**Airworthiness Directives; Bombardier Model DHC-8-100 and DHC-8-200 Series Airplanes, and Model DHC-8-301, -311, and -315 Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT)

**ACTION:** Notice of Proposed Rulemaking (NPRM).

**SUMMARY:** The FAA proposes to adopt a new airworthiness directive (AD) for certain Bombardier Model DHC-8-100 and DHC-8-200 series airplanes, and DHC-8-301, -311, and -315 airplanes. This proposed AD would require implementing a corrosion prevention and control program (CPCP) either by accomplishing specific tasks or by revising the maintenance inspection program to include a CPCP. This proposed AD results from the determination that, as airplanes age, they are more likely to exhibit indications of corrosion. We are proposing this AD to prevent structural failure of the airplane due to corrosion.

**DATES:** We must receive comments on this proposed AD by September 14, 2009.

**ADDRESSES:** You may send comments by any of the following methods:

- **Federal eRulemaking Portal:** Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.