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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. 2000-NM-110-AD; Amendment 39-13653; AD 2004-11-07]**

**RIN 2120-AA64**

#### **Airworthiness Directives; McDonnell Douglas Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), DC-9-87 (MD-87), and MD-88 Airplanes**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

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**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to all McDonnell Douglas Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), DC-9-87 (MD-87), and MD-88 airplanes, that requires implementation of a program of structural inspections of baseline structure to detect and correct fatigue cracking in order to ensure the continued airworthiness of these airplanes as they approach the manufacturer's original fatigue design life goal. This action is necessary to detect and correct fatigue cracking that could compromise the structural integrity of these airplanes. This action is intended to address the identified unsafe condition.

**DATES:** Effective July 9, 2004.

The incorporation by reference of a certain publication listed in the regulations is approved by the Director of the Federal Register as of July 9, 2004.

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplanes, Long Beach Division, 3855 Lakewood Boulevard, Long Beach, California 90846, Attention: Data and Service Management, Dept. C1-L5A (D800-0024). This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Transport Airplane Directorate, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to:  
*[http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html)*.

**FOR FURTHER INFORMATION CONTACT:** Mike Lee, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712-4137; telephone (562) 627-5325; fax (562) 627-5210.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to all McDonnell Douglas Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), DC-9-87 (MD-87), and MD-88 airplanes was published in the Federal Register on October 8, 2003 (68 FR 58046). That action proposed to require implementation of a program of structural inspections of baseline structure to detect and correct fatigue cracking in order to ensure the continued airworthiness of these airplanes as they approach the manufacturer's original fatigue design life goal.

## **Comments**

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

### **Request To Clarify Paragraph (b) of the Notice of Proposed Rulemaking (NPRM)**

One commenter, the airplane manufacturer, requests that paragraph (b) of the NPRM be clarified to specify what an operator should do to inspect a discrepant principal structural element (PSE). The commenter states that the preamble of the NPRM alludes to what to do, but that the body of the NPRM does not specify what actions to accomplish. Specifically, the commenter requests that the following clarification be added to paragraph (b) of the NPRM: "If, during the inspection of the PSE per Supplemental Inspection Document Volume II, a discrepancy is determined to exist, then the following applies: For an inspection prior to  $\frac{3}{4}N_{th}$  or  $N_{th}$ : The area of the PSE affected by the discrepancy must be inspected prior to  $N_{th}$  with a method approved by the Manager of the Los Angeles Aircraft Certification Office (ACO). For an inspection after  $N_{th}$ : The area of the PSE affected by the discrepancy must be inspected prior to the accumulation of an additional  $\Delta NDI/2$ , measured from the last non-discrepant inspection finding, with a method approved by the Los Angeles ACO."

The FAA agrees that clarification is needed. We have added a new paragraph (c) of this AD to clarify the actions and compliance times required if any discrepancy is detected during the inspections required by paragraph (b) of this AD. Paragraphs subsequent to paragraph (b) of the NPRM have been renumbered accordingly in this AD.

### **Request To Clarify the Method for Approving a Repair**

One commenter, the airplane manufacturer, requests clarification concerning the multiple state approach used for approving repairs. Specifically, the commenter requests that a "note" be added after paragraph (d) of the NPRM to clarify that Advisory Circular AC 25.1529-1, Instructions for Continued Airworthiness of Structural Repairs on Transport Airplanes, dated August 1, 1991, is appropriate guidance concerning the approval of repairs to PSEs.

We agree with the commenter's request and have revised the final rule to add a new "Note 2" advising that AC 25.1529-1 provides additional guidance concerning the approval of repairs.

### **Request To Clarify Compliance "Threshold" of Paragraph (d) of the NPRM**

One commenter, the airplane manufacturer, requests that the "threshold" specified in paragraph (d)(2) of the NPRM be clarified. The commenter asserts that the "threshold" could be interpreted as reaching 75% of the PSE inspection threshold and not the repair threshold. The commenter requests that paragraph (d)(2) of the NPRM be revised as follows: "(2) Prior to reaching 75% of the threshold as determined in paragraph (d)(1) of the NPRM, submit the inspection methods and repetitive inspection intervals for the repair for approval by the Manager of the Los Angeles ACO." The commenter notes that paragraph (d)(3) of the NPRM is clear concerning what threshold is being referred to.

We agree with the commenter that clarification is warranted. We have redesignated paragraph (d)(2) of the NPRM as paragraph (e)(2) of the final rule and revised the wording of new paragraph (e)(2) to clarify the threshold accordingly.

### **Request To Clarify the Compliance Times of Paragraph (e) of the NPRM**

One commenter, the airplane manufacturer, requests that paragraph (e) of the NPRM be revised to delete the phrase that limits the applicability of paragraph (e) of the NPRM to airplanes that have exceeded the compliance times specified in paragraph (b) of the NPRM. The commenter states that, if the airplane has not exceeded these times, then the operator would only be required to comply per paragraph (b) of the NPRM.

We do not concur with the commenter's request. The purpose of this limitation is to avoid the need for air carriers to comply with this paragraph (redesignated as paragraph (f) in this final rule) if they are able to comply with paragraph (b) within the compliance times specified in paragraph (b) of the AD. Without this limitation, for example, an air carrier placing a relatively new airplane into service would either have to perform the inspections before placing it into service or obtain an FAA approval for performing them later.

In considering this comment, however, we recognize that the only time that an air carrier would need to address this issue is when the airplane has exceeded the fatigue life threshold ( $N_{th}$ ). Before that time, paragraph (b) of the AD allows for performance of the inspections within the compliance times specified in that paragraph. Therefore, we have revised paragraph (f) of the AD to reference only the fatigue life threshold ( $N_{th}$ ).

### **Request To Revise Certain Terminology**

One commenter, the airplane manufacturer, requests that the terms "SSIP" and "SSI" be removed from the NPRM and replaced with the terms "SIP" and "PSE," respectively, to be consistent with the terminology used in the MD-80 Supplemental Inspection Document.

We agree with the commenter's request. We have redesignated paragraph (e) of the NPRM as paragraph (f) of the final rule, and where those terms appeared in paragraph (e) of the NPRM, paragraph (f) of the final rule reflects those changes. However, other sections where usage of those terms appeared in the preamble of the NPRM do not appear in the final rule, and it is not necessary to revise in the final rule in that regard.

### **Request To Clarify a Reference in the SID**

One commenter, an airline operator, requests that clarification be given regarding possible misinterpretation of notes (\*\*) and (\*\*\*) of the Boeing MD80 SID, Volume 1. The commenter states that the two PSEs (PSEs 53.80.004 and 54.80.005) referenced in notes (\*\*) and (\*\*\*) can be inspected at "intervals specified" in the Maintenance Review Board (MRB) Report, and that the MRB Report mentions "C" check intervals. Therefore, the commenter suggests that the two PSEs could mistakenly be inspected at intervals of every "C" check.

We acknowledge the commenter's request for clarification, but note that no change is necessary to the final rule for the following reasons. The intent of notes (\*\*) and (\*\*\*) in the SID is to allow operators the opportunity to receive credit for MD80 SID inspections of the forward and aft engine pylon isolators land conebolts when inspections are performed at engine changes. However, the  $N_{th}$  still remains at 50,000 landings and  $\Delta NDI/2$  intervals still remain at 10,000 landings even if the inspections are performed at engine changes per notes (\*\*) and (\*\*\*) of the SID.

## **Request To Correct "SIP Inspection Requirements" of the Discussion**

One commenter, the airplane manufacturer, points out that the first sentence of the "SIP Inspection Requirements" of the Discussion section of the NPRM should be revised to reflect the correct threshold requirements. Specifically, the commenter requests that the first sentence be revised to read, "Paragraph (b) of this proposed AD also would require, for airplanes that have exceeded the  $N_{th}/2$ , that each PSE be inspected prior to reaching the established thresholds ( $3/4N_{th}$  and  $N_{th}$ ) or within 18 months after the effective date of this AD." The commenter notes that inspection of a PSE that exceeds  $N_{th}$  cannot be inspected prior to  $N_{th}$ .

We acknowledge the commenter's request to revise that paragraph of the Discussion section. Since that section of the preamble does not reappear in the final rule, no change to the final rule is necessary in that regard.

## **Conclusion**

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

## **Interim Action**

This is considered to be interim action. The FAA is currently considering requiring damage tolerance-based inspections and procedures that include all major structural repairs and modifications (RAMs), which may result in additional rulemaking.

## **Cost Impact**

There are approximately 1,167 Model DC-9-80 and MD-88 airplanes of the affected design in the worldwide fleet. The FAA estimates that 665 airplanes of U.S. registry will be affected by this AD.

Incorporation of the SIP into an operator's maintenance program is estimated to require 1,062 work hours (per operator), at an average labor rate of \$65 per work hour. Based on these figures, the cost to the 18 affected U.S. operators to incorporate the SIP is estimated to be \$1,242,540.

The recurring inspection costs in this AD are estimated to be 362 work hours per airplane per year, at an average labor rate of \$65 per work hour. Based on these figures, the recurring inspection costs are estimated to be \$23,530 per airplane, per inspection, or \$15,647,450 for the affected U.S. fleet.

Based on the above figures, the total cost impact of this AD on U.S. operators is estimated to be \$1,242,540 for the first year, and \$15,647,450 for each year thereafter. These "total cost impact" figures assume that no operator has yet accomplished any of the requirements of this AD.

Additionally, the number of required work hours for each required inspection (and the SIP), as indicated above, is presented as if the accomplishment of those actions are to be conducted as "stand alone" actions. However, in actual practice, these actions for the most part will be accomplished coincidentally or in combination with normally scheduled airplane inspections and other maintenance program tasks. Therefore, the actual number of necessary additional work hours will be minimal in many instances. Further, any cost associated with special airplane scheduling can be expected to be minimal.

## **Regulatory Impact**

The regulations adopted herein will 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. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under 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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

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

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. Section 39.13 is amended by adding the following new airworthiness directive:

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

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

*We post ADs on the internet at "www.faa.gov"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2004-11-07 McDonnell Douglas:** Amendment 39-13653. Docket 2000-NM-110-AD.

**Applicability:** Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), DC-9-87 (MD-87), and MD-88 airplanes, certificated in any category.

**Compliance:** Required as indicated, unless accomplished previously.

To detect and correct fatigue cracking that could compromise the structural integrity of these airplanes, accomplish the following:

## **Revision of the Maintenance Inspection Program**

(a) Within 12 months after the effective date of this AD, incorporate a revision into the FAA-approved maintenance inspection program that provides for inspection(s) of the Principal Structural Elements (PSEs), in accordance with Section 3 of Volume I, Revision B, dated March 2003, of Boeing Report No. L26-022, "MD-80 Supplemental Inspection Document (SID)." PSEs are also specified in the SID. Unless otherwise specified, all references in this AD to the "SID" are to Revision B, dated March 2003.

## **Non-Destructive Inspections (NDIs)**

(b) For all PSEs listed in Section 3 of Volume I of the SID, perform an NDI for fatigue cracking of each PSE in accordance with the NDI procedures specified in Section 2 of Volume II of the SID, at the times specified in paragraph (b)(1), (b)(2), or (b)(3) of this AD, as applicable.

(1) For airplanes that have less than three quarters of the fatigue life threshold ( $\frac{3}{4}N_{th}$ ) as of the effective date of the AD: Perform an NDI for fatigue cracking no earlier than one-half of the threshold ( $\frac{1}{2}N_{th}$ ) but prior to reaching three-quarters of the threshold ( $\frac{3}{4}N_{th}$ ), or within 18 months after the effective date of this AD, whichever occurs later. Inspect again prior to reaching the threshold ( $N_{th}$ ), but no earlier than ( $\frac{3}{4}N_{th}$ ). Thereafter, after passing the threshold ( $N_{th}$ ), repeat the inspection for that PSE at intervals not to exceed  $\Delta NDI/2$ .

(2) For airplanes that have reached or exceeded three-quarters of the fatigue life threshold ( $\frac{3}{4}N_{th}$ ), but less than the threshold ( $N_{th}$ ), as of the effective date of the AD: Perform an NDI prior to reaching the threshold ( $N_{th}$ ), or within 18 months after the effective date of this AD, whichever occurs later. Thereafter, after passing the threshold ( $N_{th}$ ), repeat the inspection for that PSE at intervals not to exceed  $\Delta NDI/2$ .

(3) For airplanes that have reached or exceeded the fatigue life threshold ( $N_{th}$ ) as of the effective date of the AD: Perform an NDI within 18 months after the effective date of this AD. Thereafter, repeat the inspection for that PSE at intervals not to exceed  $\Delta NDI/2$ .

## Discrepant Findings

(c) If any discrepancy (e.g., differences on the airplane from the NDI reference standard, such as PSEs that have been repaired, altered, or modified) is detected during any inspection required by paragraph (b) of this AD, accomplish the action specified in paragraph (c)(1) or (c)(2) of this AD, as applicable.

(1) If a discrepancy is detected during any inspection performed prior to  $\frac{3}{4}N_{th}$  or  $N_{th}$ : The area of the PSE affected by the discrepancy must be inspected prior to  $N_{th}$  per a method approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA.

(2) If a discrepancy is detected during any inspection performed after  $N_{th}$ : The area of the PSE affected by the discrepancy must be inspected prior to the accumulation of an additional  $\Delta NDI/2$ , measured from the last non-discrepant inspection finding, per a method approved by the Manager of the Los Angeles ACO.

## Reporting Requirements

(d) All negative, positive, or discrepant (discrepant finding examples are described in paragraph (c) of this AD) findings of the inspections accomplished under paragraph (b) of this AD must be reported to Boeing, at the times specified in, and in accordance with the instructions contained in, Section 3 of Volume I of the SID. Information collection requirements contained in this regulation have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

## Corrective Actions

(e) Any cracked structure of a PSE detected during any inspection required by paragraph (b) of this AD must be repaired before further flight in accordance with an FAA-approved method. Accomplish follow-on actions described in paragraphs (e)(1), (e)(2), and (e)(3) of this AD, at the times specified.

(1) Within 18 months after repair, perform a damage tolerance assessment (DTA) that defines the threshold for inspection of the repair and submit the assessment for approval to the Manager of the Los Angeles ACO.

(2) Prior to reaching 75% of the threshold as determined in paragraph (e)(1) of this AD, submit the inspection methods and repetitive inspection intervals for the repair for approval by the Manager of the Los Angeles ACO.

(3) Prior to the threshold as determined in paragraph (e)(1) of this AD, incorporate the inspection method and repetitive inspection intervals into the FAA-approved structural maintenance or inspection program for the airplane.

**Note 1:** For the purposes of this AD, the FAA anticipates that submissions of the damage tolerance assessment of the repair, if acceptable, should be approved within six months after submission.

**Note 2:** Advisory Circular AC 25.1529-1, Instructions for Continued Airworthiness of Structural Repairs on Transport Airplanes, dated August 1, 1991, is considered to be additional guidance concerning the approval of repairs to PSEs.

## **Inspection for Transferred Airplanes**

(f) Before any airplane that has exceeded the fatigue life threshold ( $N_{th}$ ) can be added to an air carrier's operations specifications, a program for the accomplishment of the inspections required by this AD must be established per paragraph (f)(1) or (f)(2) of this AD, as applicable.

(1) For airplanes that have been inspected per this AD, the inspection of each PSE must be accomplished by the new operator per the previous operator's schedule and inspection method, or the new operator's schedule and inspection method, at whichever time would result in the earlier accomplishment date for that PSE inspection. The compliance time for accomplishment of this inspection must be measured from the last inspection accomplished by the previous operator. After each inspection has been performed once, each subsequent inspection must be performed per the new operator's schedule and inspection method.

(2) For airplanes that have not been inspected per this AD, the inspection of each PSE required by this AD must be accomplished either prior to adding the airplane to the air carrier's operations specification, or per a schedule and an inspection method approved by the Manager, Los Angeles ACO. After each inspection has been performed once, each subsequent inspection must be performed per the new operator's schedule.

## **Inspections Accomplished Before the Effective Date of This AD**

(g) Inspections per Boeing Report No. L26-022, "MD-80 Supplemental Inspection Document (SID)," Revision A, dated September 2000, accomplished prior to the effective date of this AD, are acceptable for compliance with the requirements of paragraph (b) of this AD.

## **Acceptable for Compliance**

(h) McDonnell Douglas Report No. MDC 91K0263, "DC-9/MD-80 Aging Aircraft Repair Assessment Program Document," dated July 1997, provides inspection/replacement programs for certain repairs to the fuselage pressure shell. These repairs and inspection/replacement programs are considered acceptable for compliance with the requirements of paragraphs (b) and (e) of this AD for repairs subject to that document.

## **Alternative Methods of Compliance**

(i) In accordance with 14 CFR 39.19, the Manager, Los Angeles ACO, is authorized to approve alternative methods of compliance (AMOCs) for this AD.

## **Incorporation by Reference**

(j) Unless otherwise specified in this AD, the actions shall be done in accordance with Section 3 of Volume I, Revision B, dated March 2003, of Boeing Report No. L26-022, "MD-80 Supplemental Inspection Document (SID)." This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Airplanes, Long Beach Division, 3855 Lakewood Boulevard, Long Beach, California 90846, Attention: Data and Service Management, Dept. C1-L5A (D800-0024). Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

**Effective Date**

(k) This amendment becomes effective on July 9, 2004.

Issued in Renton, Washington, on May 5, 2004.

Ali Bahrami,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service

[FR Doc. 04-12398 Filed 6-3-04; 8:45 am]

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