

Airworthiness Directive

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [65 FR 48355 8/8/2000]

Docket No. 2000-NM-89-AD; Amendment 39-11847; AD **2000-15-15**

RIN 2120-AA64

Airworthiness Directives; McDonnell Douglas Model DC-9, Model MD-90-30, Model 717-200, and Model MD-88 Airplanes

PDF Copy (If Available):

▼ Preamble Information

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to all McDonnell Douglas Model DC-9, Model MD-90-30, Model 717-200, and Model MD-88 airplanes, that currently requires inspecting the general condition of the jackscrew assembly and the area around the jackscrew assembly to detect the presence of metal shavings and flakes. This amendment also requires inspecting for metallic particles in the lubrication for the jackscrew assembly of the horizontal stabilizer and surrounding area to detect any discrepancy; follow-on actions; and corrective actions, if necessary. This amendment is prompted by numerous reports from operators that indicate instances of metallic shavings in the vicinity of the jackscrew assembly and gimbal nut of the horizontal stabilizer. The actions specified in this AD are intended to prevent loss of pitch trim capability due to excessive wear of the jackscrew assembly of the horizontal stabilizer, which could result in reduced controllability of the airplane.

The incorporation by reference of Boeing Alert Service Bulletin DC9-27A362, Revision 02, dated March 30, 2000; Boeing Alert Service Bulletin MD90-27A034, Revision 02, dated March 30, 2000; and Boeing Alert Service Bulletin 717-27A0002, Revision 02, dated March 30, 2000; as listed in the regulations; is approved by the Director of the Federal Register as of August 23, 2000.

The incorporation by reference of Boeing Alert Service Bulletin DC9-27A362, dated

February 11, 2000; Boeing Alert Service Bulletin MD90-27A034, dated February 11, 2000; and Boeing Alert Service Bulletin 717-27A0002, dated February 11, 2000; as listed in the regulations; was approved previously by the Director of the Federal Register as of March 6, 2000 (65 FR 10379, February 28, 2000).

Comments for inclusion in the Rules Docket must be received on or before October 10, 2000.

DATES: Effective August 23, 2000.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2000-NM-89-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. Comments sent via the Internet as attached electronic files must be formatted in Microsoft Word 97 for Windows or ASCII text.

The service information referenced in this AD may be obtained from The Boeing Company, Long Beach Division, 3855 Lakewood Boulevard, Long Beach, California 90846, Attention: Technical Publications Business Administration, Dept. C1-L52 (2-60). This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Transport Airplane Directorate, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712-4137; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

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

SUPPLEMENTARY INFORMATION: On February 17, 2000, the FAA issued AD 2000-03-51, amendment 39-11595 (65 FR 10379, February 28, 2000), applicable to all McDonnell Douglas Model DC-9, Model MD-90-30, Model 717-200, and Model MD-88 airplanes, to require inspecting the general condition of the jackscrew assembly and the area around the jackscrew assembly to detect the presence of metal shavings and flakes. That action was prompted by a report from an operator that indicated two instances of metallic shavings in the vicinity of the jackscrew assembly and gimbal nut of the horizontal stabilizer. The actions required by that AD are intended to prevent loss of pitch trim capability due to excessive wear of the jackscrew assembly of the horizontal stabilizer, which could result in loss of vertical control of the airplane.

Actions Since Issuance of Previous Rule

Since the issuance of AD 2000-03-51, the FAA has received numerous reports of incidents in which metallic particles (including slivers and dust, as well as shavings and flakes) were found imbedded within the grease on the threaded portion of the jackscrew

assembly of the horizontal stabilizer actuator and on the area directly below the jackscrew assembly. Findings by the manufacturer indicate that such metallic particles can be identified as a non-magnetic metallic substance which is golden in color.

New Service Information

Since the issuance of the previous rule, the FAA has reviewed and approved the following new Boeing Alert Service Bulletins, which have been approved as alternative methods of compliance to the requirements of AD 2000-03-51:

DC9-27A362, Revision 02, dated March 30, 2000 (for Model DC-9 and Model MD-88 airplanes);

MD90-27A034, Revision 02, dated March 30, 2000 (for Model MD-90-30 airplanes); and

717-27A0002, Revision 02, dated March 30, 2000 (for Model 717-200 airplanes).

Revision 02 of the alert service bulletins revises certain procedures included in the original issue of the alert service bulletins, which were referenced in AD 2000-03-51 as the appropriate sources of service information. Revision 02 describes new procedures for detailed visual inspections to detect the presence of metallic particles (including slivers and dust, as well as shavings and flakes) in the lubrication for the jackscrew assembly. In addition, Revision 02 revises certain follow-on and corrective actions. Follow-on actions include performing repetitive inspections, testing the horizontal shutoff controls, and lubricating the jackscrew of the horizontal stabilizer actuator. Corrective actions include removing dirt/grease from exposed jackscrew threads, performing wear checks of the jackscrew (endplay and freeplay checks), adjusting the trim system and shutoff control system of the horizontal stabilizer, and replacing the jackscrew assembly of the horizontal stabilizer actuator with a new or serviceable unit.

Revision 02 also revises certain replacement procedures. For certain discrepancies, although the original issue of the alert service bulletins specifies replacement of the jackscrew assembly with a new or serviceable assembly, Revision 02 specifies such replacement action only if the wear check results are found to be outside specified limits.

Revision 02 describes procedures for follow-on and corrective actions, if necessary, following accomplishment of the inspection of the horizontal stabilizer actuator jackscrew and nut specified in Phase 2 of the Accomplishment Instructions. The original issue of the alert service bulletins did not specifically include the follow-on and corrective actions; however, the original issue referenced certain airplane maintenance manuals as additional sources of service information for accomplishing the follow-on and corrective actions, as well as the inspection.

FAA's Determination

In consideration of new findings by the manufacturer regarding the types of material found in the jackscrew assembly of the horizontal stabilizer since issuance of AD 2000-03-51, the FAA has determined that the required inspections should be expanded to include metallic particles such as slivers and dust, as well as the metal shavings and

flakes identified in AD 2000-03-51. The inspections, tests, and follow-on and corrective actions of the applicable alert service bulletins described previously are intended to minimize the possibility of failure of the horizontal stabilizer jackscrew assembly to maintain controllability of the airplane.

In addition, the FAA has determined that it is necessary for operators to report the results of the endplay checks required by paragraphs (a) and (b) of this AD to the manufacturer. These results are necessary to provide information regarding the wear rates of the jackscrew assembly. The FAA will use these data to confirm that the repetitive intervals of 650 flight hours, as specified by paragraph (a) of this AD, and the repetitive intervals of 2,000 flight hours, as specified by paragraph (b) of this AD, are appropriate compliance times for accomplishment of the endplay check and are adequate for ensuring the safety of the fleet.

Explanation of Requirements of Rule

Since an unsafe condition has been identified that is likely to exist or develop on other airplanes of this same type design, this AD supersedes AD 2000-03-51. This AD continues to require inspecting the general condition of the jackscrew assembly and the area around the jackscrew assembly to detect the presence of metal shavings and flakes. This amendment also requires inspecting for metallic particles (including slivers and dust, as well as shavings and flakes) in the lubrication for the jackscrew assembly of the horizontal stabilizer and surrounding area to detect any discrepancy; follow-on actions; and corrective actions, if necessary. The actions are required to be accomplished in accordance with the alert service bulletins described previously. This AD also requires operators to submit the results of the endplay check to the manufacturer.

Interim Action

This is considered to be interim action until final action is identified.

Determination of Rule's Effective Date

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified under the caption "ADDRESSES." All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2000-NM-89-AD." The postcard will be date stamped and returned to the commenter.

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.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, 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 removing amendment 39-11595 (65 FR 10379, March 6, 2000), and by adding a new airworthiness directive (AD), amendment 39-11847, to read as follows:

▼ Regulatory Information

2000-15-15 MCDONNELL DOUGLAS: Amendment 39-11847. Docket 2000-NM-89-AD. Supersedes AD 2000-03-51, Amendment 39-11595.

Applicability: All Model DC-9, Model MD-90-30, Model 717-200, and Model MD-88 airplanes, certificated in any category.

NOTE 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

NOTE 2: Inspections and follow-on and corrective actions accomplished prior to the effective date of this AD in accordance with Revision 1 of Boeing Alert Service Bulletin MD90-27A034, Revision 01, DC9-27A362, Revision 01, and 717-27A0002, Revision 01; all dated February 12, 2000; are considered acceptable for compliance with the applicable actions required by this AD that are specified in the original issue of the applicable alert service bulletin.

To prevent loss of pitch trim capability due to excessive wear of the jackscrew assembly of the horizontal stabilizer, which could result in reduced controllability of the airplane, accomplish the following:

Inspections, Check, and Test (Phase 1)

(a) Prior to the accumulation of 650 hours total time-in-service (TTIS), or within 72 hours after March 6, 2000 (the effective date of AD 2000-03-51, amendment 39-11595), whichever occurs later, accomplish the actions required by paragraphs (a)(1), (a)(2), (a)(3), (a)(4), and (a)(5) of this AD; in accordance with Phase 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin DC9-27A362, dated February 11, 2000 (original issue), or Revision 02, dated March 30, 2000 (for Model DC-9 and Model MD-88 airplanes); MD90-27A034, dated February 11, 2000 (original issue), or Revision 02, dated March 30, 2000 (for Model MD-90-30 airplanes); or 717-27A0002, dated February 11, 2000 (original issue), or Revision 02, dated March 30, 2000 (for Model 717-200 airplanes); as applicable. Repeat the actions required by paragraph (a) of this AD thereafter at intervals not to exceed 650 flight hours. As of the effective date of this AD, the repetitive inspections required by this paragraph must be accomplished as detailed visual inspections in accordance with Phase 1 of the Accomplishment Instructions of

Revision 02 of the applicable alert service bulletin.

(1) Perform a general visual inspection of the lubricating grease on the jackscrew assembly and the area directly below the jackscrew and surrounding areas for the presence of metallic particles (including slivers, dust, shavings, and flakes) in accordance with Phase 1 of the Accomplishment Instructions of either the original issue or Revision 02 of the applicable alert service bulletin. If the presence of metallic particles is detected, prior to further flight, remove and replace the jackscrew assembly with a new or serviceable assembly; or accomplish the detailed visual inspections, follow-on actions, and corrective actions, as applicable; in accordance with Phase 1 of the Accomplishment Instructions of Revision 02 of the applicable alert service bulletin.

(2) Perform a general visual inspection of the jackscrew assembly to detect the presence of corrosion, pitting, or distress in accordance with Phase 1 of the Accomplishment Instructions of either the original issue or Revision 02 of the applicable alert service bulletin. If any corrosion, pitting, or distress is detected, prior to further flight, remove and replace the jackscrew assembly with a new or serviceable assembly; or accomplish the detailed visual inspections, follow-on actions, and corrective actions, as applicable; in accordance with Phase 1 of the Accomplishment Instructions of Revision 02 of the applicable alert service bulletin.

(3) During any inspection conducted prior to the effective date of this AD, check the condition of the jackscrew assembly lubricant in accordance with Phase 1 of the Accomplishment Instructions of the original issue of the applicable alert service bulletin. If the jackscrew assembly is dry, prior to further flight, lubricate the assembly in accordance with Phase 1 of the Accomplishment Instructions of Revision 02 of the applicable alert service bulletin.

NOTE 3: During other inspections required by this AD, lubrication of the jackscrew is checked in accordance with Phase 1 of the Accomplishment Instructions of Revision 02 of the applicable alert service bulletin.

(4) Inspect the horizontal stabilizer jackscrew upper and lower mechanical stops for general condition in accordance with the Phase 1 of the Accomplishment Instructions of either the original issue or Revision 02 of the applicable alert service bulletin; and record the condition.

(5) Perform a test of the horizontal stabilizer shutoff controls in accordance with Phase 1 of the Accomplishment Instructions of either the original issue or Revision 02 of the applicable alert service bulletin. If the mechanical stop on the jackscrew contacts the mechanical stop on the acme nut prior to limit switch shutoff, prior to further flight, adjust the horizontal stabilizer trim system in accordance with operator-approved maintenance instructions.

NOTE 4: For the purposes of this AD, a general visual inspection is defined as: "A visual examination of an interior or exterior area, installation or assembly to detect obvious

damage, failure, or irregularity. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or drop-light and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked."

NOTE 5: For the purposes of this AD, a detailed visual inspection is defined as: "An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc. may be used. Surface cleaning and elaborate access procedures may be required."

NOTE 6: Accomplishment of steps (b) through (e) of BOECOM message number M-7200-00-00456, dated February 9, 2000, constitutes compliance with paragraphs (a)(2), (a)(3), (a)(4), and (a)(5) of this AD.

Wear Checks (Phase 2)

(b) Within 2,000 flight hours since the last endplay check of the jackscrew and acme nut conducted in accordance with the McDonnell Douglas DC-9 Maintenance Manual, Chapter 27-40-1; McDonnell Douglas MD-80 Maintenance Manual, Chapter 27-40-01; McDonnell Douglas MD-90 Maintenance Manual, Chapter 27-41-10; or Boeing 717 Maintenance Manual, Chapter 27-41-04; or within 30 days after March 6, 2000, whichever occurs later: Perform endplay and freeplay checks of the jackscrew and acme nut in accordance with Phase 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin DC9-27A362, dated February 11, 2000, or Revision 02, dated March 30, 2000 (for Model DC-9 and Model MD-88 airplanes); MD90-27A034, dated February 11, 2000, or Revision 02, dated March 30, 2000 (for Model MD-90-30 airplanes); or 717-27A0002, dated February 11, 2000, or Revision 02, dated March 30, 2000 (for Model 717-200 airplanes); as applicable. Repeat the endplay and freeplay checks thereafter at intervals not to exceed 2,000 flight hours. As of the effective date of this AD, only Phase 2 of the Accomplishment Instructions of Revision 02 of the applicable alert service bulletin shall be used to accomplish the requirements of this paragraph (including the corrective actions specified in Phase 2 of the Accomplishment Instructions of Revision 02 of the applicable alert service bulletin).

NOTE 7: Accomplishment of step (a) of BOECOM message number M-7200-00-00456, dated February 9, 2000, constitutes compliance with paragraph (b) of this AD.

Reporting Requirement

(c) At intervals not to exceed 90 days after accomplishing the endplay checks required by paragraphs (a) and (b) of this AD, submit a report of the results of the endplay checks to The Boeing Company, Long Beach Division, P.O. Box 1771, Long Beach, California 90801, Attention: Senior Manager - Systems, Technical and Fleet Support, Service Engineering D035-0035; fax: (562) 497-5811. Results of the endplay checks may be accumulated and submitted at the intervals required by this paragraph. 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.

Alternative Methods of Compliance

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles ACO.

NOTE 8: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Manager, Los Angeles ACO.

Special Flight Permits

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(f) Except as provided by paragraph (a)(5) of this AD for adjusting the horizontal stabilizer trim system, the actions shall be done in accordance with Boeing Alert Service Bulletin DC9-27A362, dated February 11, 2000; Boeing Alert Service Bulletin DC9-27A362, Revision 02, dated March 30, 2000; Boeing Alert Service Bulletin MD90-27A034, dated February 11, 2000; Boeing Alert Service Bulletin MD90-27A034, Revision 02, dated March 30, 2000; Boeing Alert Service Bulletin 717-27A0002, dated February 11, 2000; or Boeing Alert Service Bulletin 717-27A0002, Revision 02, dated March 30, 2000.

(1) The incorporation by reference of Boeing Alert Service Bulletin DC9-27A362, Revision 02, dated March 30, 2000; Boeing Alert Service Bulletin MD90-27A034, Revision 02, dated March 30, 2000; and Boeing Alert Service Bulletin 717-27A0002, Revision 02, dated March 30, 2000; is approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The incorporation by reference of Boeing Alert Service Bulletin DC9-27A362, dated February 11, 2000; Boeing Alert Service Bulletin MD90-27A034, dated February 11, 2000; and Boeing Alert Service Bulletin 717-27A0002, dated February 11, 2000; was approved previously by the Director of the Federal Register as of March 6, 2000 (65 FR 10379, February 28, 2000).

(3) Copies may be obtained from The Boeing Company, Long Beach Division, 3855 Lakewood Boulevard, Long Beach, California 90846, Attention: Technical Publications Business Administration, Dept. C1-L52 (2-60). Copies may be inspected at the FAA, Transport Airplane Directorate, 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 Office of the Federal Register,

800 North Capitol Street, NW., suite 700, Washington, DC.

Effective Date

(g) This amendment becomes effective on August 23, 2000.

▼ Footer Information

Issued in Renton, Washington, on July 28, 2000.

Donald L. Riggan,

Acting Manager, Transport Airplane Directorate,

Aircraft Certification Service.

▼ Comments