

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

[Docket No. 2001-NM-197-AD; Amendment 39-12749; AD 2002-10-03]

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), MD-88, and MD-90-30 Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain McDonnell Douglas Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), DC-9-87 (MD-87), MD-88, and MD-90-30 airplanes. This AD requires replacement of certain main landing gear (MLG) shock strut piston assemblies with new or serviceable, improved assemblies, which constitutes terminating action for the requirements of certain other ADs. This action is necessary to prevent fatigue cracking of the MLG shock strut pistons, which could result in failure of the MLG shock strut pistons during landing or jacking of the airplane, and consequent damage to the airplane structure and injury to the passengers, flightcrew, or ground personnel. This action is intended to address the identified unsafe condition.

DATES: Effective June 20, 2002. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 20, 2002.

ADDRESSES: The service information referenced in this AD may be obtained from Boeing Commercial Aircraft Group, 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; at the FAA, 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.

FOR FURTHER INFORMATION CONTACT: David Y. J. Hsu, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office,

3960 Paramount Boulevard, Lakewood, California 90712-4137; telephone (562) 627-5323; 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 certain McDonnell Douglas Model DC-9-81, -82, -83, and -87 series airplanes; Model MD-88 airplanes; and Model MD-90-30 series airplanes; was published in the **Federal Register** on August 29, 2001 (66 FR 45657). That action proposed to require replacement of certain main landing gear (MLG) shock strut piston assemblies with new or serviceable, improved assemblies, which would constitute terminating action for the requirements of certain other ADs.

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 Compliance Threshold

One commenter requests that the FAA clarify the compliance threshold stated in paragraph (a) of the proposed AD. The commenter states that the compliance time stated in the proposed AD, "Before the accumulation of 30,000 total landings, or within 5,000 landings after the effective date of this AD, whichever occurs later," should be revised to "(Before) the accumulation of 30,000 total landings . . . on an MLG shock strut piston, or within 5,000 landings after the effective date of this AD, whichever occurs later." The commenter states that it has airplanes in its fleet with more than 40,000 total landings that are equipped with affected MLG shock strut pistons that have accumulated fewer than 1,000 landings. The commenter points out that, as written, the proposed AD would require discarding a piston with significantly fewer than 30,000 landings (i.e., the compliance threshold for the proposed replacement) because the piston is installed on an airplane with more than 30,000 total landings. The commenter requests that the compliance threshold be stated in terms of total landings on the MLG shock strut piston.

The FAA concurs that the compliance time stated in paragraph (a) of this AD needs to be clarified. As the commenter notes, the compliance threshold should be stated in terms of total accumulated landings on the MLG shock strut piston assembly, not in terms of total landings of the airplane. Paragraph (a) of this AD has been revised accordingly. Also, as a

result of this change, we find it necessary to clarify what compliance time must be used if an operator cannot determine the number of landings on an MLG shock strut piston assembly. Thus, we have added the following statement to paragraph (a) of this AD: "If the MLG shock strut piston is not serialized or the number of landings on the piston cannot be conclusively determined, consider the total number of landings on the piston assembly to be equal to the total number of landings accumulated by the airplane with the highest total number of landings in the operator's fleet."

Request To Make Proposed AD Consistent With Other Related Rulemaking

Three commenters request that we revise the proposed AD to make the AD consistent with AD 2001-09-18, amendment 39-12225 (66 FR 23840, May 10, 2001), which is one of the related rulemaking actions identified in the proposed AD. The commenters note that the compliance time in the proposed AD, the later of 30,000 total landings or 5,000 landings after the effective date, conflicts with a provision in AD 2001-09-18 that allows a 60,000-total-landing threshold for replacement of the MLG shock strut pistons, as long as repetitive inspections are performed. The commenters ask us to add the same provisions for continuing repetitive inspections into the proposed AD. One commenter suggests this could be accomplished by making the proposed AD a supersedure of AD 2001-09-18. Two commenters remark that AD 2001-09-18 gives operators more flexibility, in that it allows deferral of the replacement of the MLG shock strut piston assembly. One of these commenters also notes that allowing repetitive inspections to continue for a longer time reduces the cost impact on operators by allowing them to use spares already in their inventory. Also with regard to the cost impact, two commenters stress that the compliance times in the proposed AD would be economically burdensome for operators. The commenters state that the requirements of AD 2001-09-18 provide a level of safety that is equal to the level that would be provided by the proposed AD.

We do not concur. We note that AD 2001-09-18 addresses fatigue cracking only in the area of the torque link lugs of the MLG pistons. This AD addresses fatigue cracking not only in the area of the torque link lugs but also in the small radius on the base of the jackball of the MLG shock strut piston assembly. Therefore, we find that the requirements

of AD 2001-09-18 are not equivalent to those of this AD. No change to the final rule is necessary in this regard.

Request To Reduce Grace Period for Compliance Time

One commenter, the airplane manufacturer, requests that we revise the proposed AD to reduce the compliance time from the later of 30,000 total landings or 5,000 landings after the effective date of this AD, to the later of 30,000 total landings or 2,500 landings after the effective date of this AD. The commenter states that it did not anticipate that operators would have the option to continue using affected MLG pistons beyond the compliance time recommended in the service bulletins referenced in the proposed AD, 30,000 total landings or 5,000 landings after January 31, 2000 (the date of the original issue of the service bulletin), whichever is later. The commenter notes that the proposed grace period of 5,000 landings after the effective date of this AD will apply to many airplanes, because operators with insufficient tracking information must assume that all MLG pistons in the affected fleet have accumulated landings equivalent to the airplane in their fleet with the most landings, and many of these "fleet leader" airplanes have already accumulated more than 30,000 total landings. The commenter asserts that its analysis suggests that the probability of cracking of the jackball of the piston increases with continued usage of the piston beyond 30,000 total landings. Consistent with this analysis, the commenter notes that certain relevant service bulletins that describe procedures for inspections of the jackball of the MLG piston currently specify reduced inspection intervals for MLG pistons with more than 35,000 total landings. The commenter states that the FAA's proposed compliance time for the replacement that would be required by the proposed AD will make it necessary for the airplane manufacturer to revise these relevant inspection service bulletins to specify significantly shorter repetitive inspection intervals for pistons with even more than 35,000 total landings, to ensure the continued safety of these airplanes until the replacement in this AD is accomplished.

We do not concur with the commenter's request to reduce the grace period for the replacement required by this AD. In developing an appropriate compliance time for the replacement required by this AD, we considered not only the degree of urgency associated with addressing the subject unsafe condition, but also the average

utilization of the affected fleet and the availability of required parts. At the average usage rate for the affected airplanes, the grace period of 2,500 landings recommended by the commenter would allow about 500 days for the airplane to be modified according to the requirements of this AD. We find that this may not allow operators sufficient time to get required parts and accomplish this AD on all affected airplanes in their fleets. We have determined that the grace period of 5,000 landings, as proposed, represents an appropriate interval of time wherein an ample number of required parts will be available and affected operators may comply with this AD. Considering the nature of the MLG piston failures at the jackball that have been reported, the FAA finds that such a compliance time will not adversely affect the safety of the affected airplanes. No change to the final rule is necessary in this regard.

Request To Specify Affected Part Numbers in Applicability Statement

One commenter requests that we revise the applicability statement of the proposed AD to identify the specific part numbers for the MLG shock strut piston assemblies affected by this AD. While the commenter provides no specific reason for its request, we infer that the commenter is requesting this change for clarity. We do not concur that such a change is necessary. The applicability statement of this AD refers to the McDonnell Douglas Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), DC-9-87 (MD-87), MD-88, and MD-90-30 airplanes listed in the two service bulletins referenced in this AD. Because no more affected airplanes will be produced, these service bulletins clearly identify all affected airplanes and all affected part numbers for the MLG shock strut piston assembly. No change to the final rule is necessary in this regard.

Comments on Cost Impact

Three commenters request that we revise the Cost Impact section of the proposed AD to more accurately state the costs associated with the proposed AD. The Cost Impact section of the proposed AD states, "The manufacturer has committed previously to its customers that it will bear the cost of replacement parts, subject to the conditions in the warranty. As a result, the cost of those parts is not attributable to this proposed AD." All three commenters disagree with this statement and ask the FAA to revise the proposed AD to include the potential cost of replacement parts. The commenters point out that, while Model

MD-90-30 airplanes are covered for the cost of replacement parts associated with Boeing Service Bulletin MD-90-32-031, Revision 01, dated April 25, 2001, the other airplane models subject to the proposed AD will be covered for the full cost of replacement parts associated with Boeing Service Bulletin MD-80-32-309, Revision 01, dated April 25, 2001, only if the airplane was in warranty as of June 1991. The commenters explain that, for airplanes not covered by the warranty provisions, the cost of the replacement MLG pistons will be up to \$255,438, plus, according to one commenter, \$8,000 for necessary replacement bearings, seals, etc., for a total cost of up to \$263,438. One of the commenters states that a review of the records of U.S.-registered airplanes subject to the proposed AD shows that approximately 320 airplanes are not covered by warranty, and the operators of these airplanes will have to purchase the replacement parts at this price.

We partially concur with the request to include the cost of replacement parts. As we stated in the proposed AD, the provision of required parts is "subject to the conditions in the warranty." We do not have access to, and it is not feasible to consider, the individual warranty contracts between the airplane manufacturer and the operators of affected airplanes.

For the benefit of affected operators, however, we will acknowledge the cost of replacement parts for airplanes that are not fully covered by warranty provisions in this AD. Also, based on the current price of replacement parts, we have also revised our cost impact estimate for the approximately 320 U.S.-registered airplanes not covered by warranty provisions.

In addition to the comments on the cost of parts, one of the commenters also contends that its experience shows that the proposed replacement will take 56 work hours, rather than the 28 estimated in the proposed AD. The commenter provides no data to substantiate its estimate. We are not revising the work-hour estimate in this AD. The estimate that 28 work hours will be needed for the required replacement is based on the best information currently available from the airplane manufacturer. We note that this figure is consistent with the estimate provided in the service bulletin. No change to the final rule is necessary in this regard.

Also, another commenter takes issue with the boilerplate statement, "The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those

actions in the future if this AD were not adopted." The commenter asserts that this statement "has the potential to mislead operators to the true cost of the proposed rule." The commenter states that it has already done the intent of the proposed AD on many airplanes in its fleet.

We infer that the commenter is requesting that we remove this statement from the AD. We do not concur. The statement to which the commenter refers is included in nearly all ADs and declares what assumptions we have made in estimating the cost of the requirements of the AD on the U.S.-registered fleet of airplanes. We use these assumptions because it is not feasible for the FAA to determine how many airplanes are already in compliance with a particular service bulletin, or whether an operator would accomplish a particular service bulletin if we didn't issue an AD to require it. Therefore, we calculate the cost impact estimate based on the assumption that the action has not been done on any U.S.-registered airplanes before the effective date of the AD, and that no operator would do the action if the FAA did not issue an AD to require it. We recognize that, in nearly all cases, some operators will have already done the AD requirements before the effective date of the AD, so the future economic impact of that AD on U.S. operators may be less than the estimated cost stated in the AD. No change to the final rule is necessary in this regard.

Explanation of Change to Applicability

The FAA has revised the applicability statement in this final rule to identify model designations as published in the most recent type certificate data sheet for the affected models. We have also revised related model designations in the preamble.

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.

Cost Impact

There are approximately 1,380 Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), DC-9-87 (MD-87), MD-88, and MD-90-30 airplanes of the affected design in the worldwide fleet. The FAA estimates that 820 airplanes of U.S. registry will be affected by this AD,

that it will take approximately 28 work hours per airplane to accomplish the required actions, and that the average labor rate is \$60 per work hour.

The manufacturer has committed previously to its customers that it may bear the cost of replacement parts, subject to the conditions in the warranty. For the approximately 500 U.S.-registered airplanes covered by the manufacturer's warranty provisions, the cost of required parts is not attributable to this AD. Therefore, based on the figures stated above, the cost impact of the AD on U.S. operators of these airplanes is estimated to be \$840,000, or \$1,680 per airplane.

Based on information received from the airplane manufacturer, up to 320 U.S.-registered airplanes subject to this AD may NOT be covered by the manufacturer's warranty provisions. For these airplanes, required parts will cost approximately \$263,438 per airplane. Based on these figures, the cost impact of the AD on U.S. operators of these airplanes is estimated to be \$84,837,760, or \$265,118 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

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:

2002-10-03 McDonnell Douglas:

Amendment 39-12749. Docket 2001-NM-197-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, as listed in Boeing Service Bulletin MD80-32-309, Revision 01, dated April 25, 2001; and Model MD-90-30 airplanes, as listed in Boeing Service Bulletin MD90-32-031, Revision 01, dated April 25, 2001; 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 (c) 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.

To prevent fatigue cracking of the main landing gear (MLG) shock strut pistons, which could result in failure of the MLG shock strut pistons during landing or jacking of the airplane, and consequent damage to the airplane structure and injury to the passengers, flightcrew, or ground personnel, accomplish the following:

Replacement

(a) Before the accumulation of 30,000 total landings on the MLG shock strut piston

assemblies, or within 5,000 landings after the effective date of this AD, whichever occurs later: Replace the MLG shock strut piston assemblies, left and right-hand sides, with new or serviceable, improved assemblies, per the Accomplishment Instructions of Boeing Service Bulletin MD80-32-309, Revision 01, dated April 25, 2001 (for 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); or Boeing Service Bulletin MD90-32-031, Revision 01, dated April 25, 2001 (for Model MD-90-30 airplanes); as applicable. If the MLG shock strut piston is not serialized or the number of landings on the piston cannot be conclusively determined, consider the total number of landings on the piston assembly to be equal to the total number of landings accumulated by the airplane with the highest total number of landings in the operator's fleet.

Note 2: Accomplishment of the replacement specified in Boeing Service Bulletin MD80-32-309, dated January 31, 2000 (for 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); or Boeing Service Bulletin MD90-32-031, dated January 31, 2000 (for Model MD-90-30 airplanes); as applicable; before the effective date of this AD, is considered acceptable for compliance with the requirement of paragraph (a) of this AD.

Compliance With Requirements of Other ADs

(b) Accomplishment of the replacement required by paragraph (a) of this AD constitutes terminating action for the requirements of AD 99-13-07, amendment 39-11201, AD 2000-03-08, amendment 39-11567, and AD 2001-09-18, amendment 39-12225.

Alternative Methods of Compliance

(c) 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. 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 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Los Angeles ACO.

Special Flight Permits

(d) 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

(e) The actions shall be done in accordance with Boeing Service Bulletin MD80-32-309, Revision 01, dated April 25, 2001; or Boeing Service Bulletin MD90-32-031, Revision 01, dated April 25, 2001; as applicable. 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 Aircraft Group, 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; at the FAA, 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

(f) This amendment becomes effective on June 20, 2002.

Issued in Renton, Washington, on May 8, 2002.

Kalene C. Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 02-12064 Filed 5-15-02; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NE-06-AD; Amendment 39-12750; AD 2002-10-04]

RIN 2120-AA64

Airworthiness Directives; General Electric Company CF6-80E1A2 Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to General Electric Company (GE) CF6-80E1A2 turbofan engines. This action requires replacing a certain low pressure turbine rotor (LPTR) shaft at or before reaching a new reduced life cycle limit. This amendment is prompted by an updated low cycle fatigue (LCF) analysis of the LPTR shaft. The actions specified in this AD are intended to prevent LCF cracking and failure of the LPTR shaft due to exceeding the life limit, which could result in an uncontained engine failure and damage to the airplane.

DATES: Effective June 20, 2002.

Comments for inclusion in the Rules Docket must be received on or before July 15, 2002.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2002-NE-

06-AD, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may be inspected at this location, by appointment, between 8 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays. Comments may also be sent via the Internet using the following address: "9-ane-adcomment@faa.gov". Comments sent via the Internet must contain the docket number in the subject line.

This information may be examined, by appointment, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

FOR FURTHER INFORMATION CONTACT:

Karen Curtis, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Office Park, Burlington, MA 01803; telephone (781) 238-7192; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: GE has completed an updated low cycle fatigue (LCF) analysis for the CF6-80E1A2 LPTR shaft, part number (P/N) 1778M39P01, and has established a new reduced life cycle limit of 17,900 cycles-since-new (CSN) for this shaft. In January 2001, the FAA became aware of GE's in-process analysis and material testing of LPTR shaft, P/N 1778M39P01. The FAA approved temporary revisions (TR's) to Chapter 5, Life Limits, of the engine manual, to incorporate revised life limits for this shaft based on initial analytical results. The original life limit of 20,000 CSN for this part was last published in the engine manual revision dated February 15, 2001. TR 05-0019, dated March 7, 2001, revised this life limit from 20,000 CSN to 11,300 CSN. Subsequent issues of the engine manual, published August 15, 2001 and February 15, 2002, carried forward this revised lower life limit. The FAA chose to wait for the final analytical results and the updated material test data before taking action to mandate a lower life limit. This wait was made possible due to the young age of the affected parts. The high time shaft has accumulated less than 7,000 CSN at this time, which is well below the interim limit of 11,300 CSN and final approved life limit. The FAA now approves GE's final analytical results and the reduced life limit of 17,900 CSN. GE issued TR 05-0030 on February 28, 2002 to revise the life limits section of the engine manual for CF6-80E1A2 LPTR shaft, P/N 1778M39P01, to 17,900 CSN. Although interim publications of the engine manual showed lower life limits for this part, those limits were not mandated by an AD. Therefore, an AD