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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2003-NM-194-AD; Amendment 39-15177; AD 2007-17-19]

RIN 2120-AA64

Airworthiness Directives; McDonnell Douglas Model MD-90-30 Airplanes

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

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain McDonnell Douglas Model MD-90-30 airplanes, that requires repetitive inspections and functional tests of the static port heater assemblies, and corrective actions if necessary. The actions specified by this AD are intended to prevent an electrical short of the static port heater from sparking and igniting the insulation blanket adjacent to the static port heater, which could result in smoke and/or fire in the cabin area. This action is intended to address the identified unsafe condition.

DATES: Effective October 2, 2007.

The incorporation by reference of a certain publication listed in the regulations is approved by the Director of the Federal Register as of October 2, 2007.

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 FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California.

FOR FURTHER INFORMATION CONTACT: Natalie Phan-Tran, Aerospace Engineer, Systems and Equipment Branch, ANM-130L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712-4137; telephone (562) 627-5343; 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 MD-90-30 airplanes was published as a supplemental notice of proposed rulemaking (NPRM) in the Federal Register on December 20, 2005 (70 FR 75435). That action proposed to require repetitive inspections and functional tests of the static port heater assemblies, repetitive inspections of the static port heaters and insulators, and corrective actions if necessary.

Actions Since Issuance of Supplemental NPRM

We proposed in paragraph (b)(2) of the supplemental NPRM to require repetitive inspections for proper installation of the static port heaters and insulation. This proposal was in response to a National Transportation Safety Board (NTSB) comment on the original NPRM. However, we have re-assessed the safety implications of the issue based on additional information that we received from Boeing. Although we understand the NTSB's concern, we have determined that the inspections in paragraph (b)(2) of the supplemental NPRM are not necessary to address the identified unsafe condition. We have revised paragraph (b) of this AD to remove the requirement to inspect for proper installation for the following reasons.

We have concluded that the incorrect stacking of the heater assembly does not contribute to the heater connector wire damage and is therefore not a safety concern.

We based our original decision to incorporate a one-time inspection for incorrect stacking into the original NPRM on the following statement made to the FAA in Boeing Letter C1-L4L-03-0700, dated June 3, 2003.

Boeing's evaluation included Delta's recommendation to redesign the "heater resistance wires" or heater element to incorporate larger bend radii. The problems of excessive localized heating near the bend radii of the element encountered by Delta may be attributed to heaters that were assembled improperly due to the AMM error. Delta's statements in its report indicate finding heater blankets improperly assembled. Boeing concurs with Delta that this assembly error would cause excessive heating and Boeing also believes this condition could lead to delamination or other damage in the bend radii areas.

Then, in the supplemental NPRM, we agreed with the NTSB recommendation to require repetitive inspections to address any incorrect stacking that might occur in the future.

After Boeing commented on the supplemental NPRM (see "Comments" section below), we contacted Boeing to clarify its comments. At the same time, in order to better understand the need for a repetitive inspection for proper installation as the NTSB recommended, we asked Boeing to provide us with additional information on the cause and effect of improper installation (incorrect stacking).

We specifically requested that Boeing clarify the definition of "excessive heating" and "other damage in the bend radii areas." Boeing confirmed that the bend radii area of the heater assembly is the internal heating element bend radii, within the laminated elastomer and is not the bend radii of the connector wire. Based on this statement, we concluded that the incorrect stacking of the heater as we understood before does not contribute to heater connector wire damage.

Our evaluation of the additional information has resulted in a better understanding of "excessive heating." We determined that improper stack-up of the static port heater might cause the heater assembly to run longer at the high wattage setting in order to heat the static plate to the proper temperature. The heater assembly circuit design limits the absolute temperature that the element can reach. Thus, the heater assembly cannot reach temperatures significantly higher than the intended operating temperatures. Additionally, the heater circuit design incorporates a 310 °F thermal fuse. However, the additional duty time or cycles caused by the improper stack-up might accelerate the normal aging of the heater assembly. Based on the above information, our previous conclusion that "excessive heating" could damage the heater connector wire is incorrect.

Furthermore, Boeing addressed the improper stack-up of the static port heater assembly in McDonnell Douglas All Operator Letter (AOL) 9-2186, dated August 15, 1991. The AOL notified

the operators of an incorrect depiction of the heater/insulator installation in the DC-9 and MD-80 Airplane Maintenance Manuals (AMMs), which were also revised and corrected in 1991. We are aware of no subsequent reports of improper stack-up of the static port heater assembly.

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 Withdraw the Supplemental NPRM

Boeing requests that the supplemental NPRM be withdrawn. Boeing considers its comments on the original NPRM still valid and offers these following additional comments on the supplemental NPRM.

Boeing contends that the unsafe condition no longer exists. Boeing states that the unsafe condition was addressed by Boeing Alert Service Bulletin MD90-30A023, including Appendix, dated March 14, 2001 (for Model MD-90-30 airplanes), which was mandated by AD 2001-10-11, amendment 39-12237 (66 FR 28651, May 24, 2001), and by Boeing Alert Service Bulletin MD80-30A092, including Appendix, dated March 14, 2001 (for Model DC-9-81, -82, -83, and -87 airplanes, and Model MD-88 airplanes), which was mandated by AD 2001-10-10, amendment 39-12236 (66 FR 28643, May 24, 2001). Boeing states that those ADs require inspecting the wiring of the primary and alternate static port heaters, determining if the type of insulation blanket installed is metallized Mylar, and modifying the insulation blankets if necessary.

Boeing also states that a review of operators' reports indicates only two events resulted in smoke in the cabin, both on one operator's MD-88 airplanes, with one report stating a smoke smell was "evident." In response, Boeing issued the service bulletins described previously. Boeing notes that "in the three years since the release of these service bulletins and the related ADs, no other static port heater smoke/fire events have been reported from the entire MD-80/90 fleet."

Boeing concludes that the unsafe condition no longer exists, and that the actions in the supplemental NPRM are purely an enhancement. Therefore, Boeing requests that the supplemental NPRM be withdrawn.

We do not agree with Boeing's request to withdraw the supplemental NPRM. Although no other static port heater smoke/fire events have been reported since all metallized Mylar insulation blankets were replaced with other insulation blankets such as Tedlar, the potential for arcing from an electrical short of the static port heater connector wire still exists.

As previously stated, we requested clarification of this request to withdraw the supplemental NPRM in an ex parte communication with Boeing.

Boeing stated that it addressed the potential for fire by removing material known to ignite easily and propagate fire. Boeing concluded that the ignition source in the one event in 1999 was of extremely low energy. The residual risk created by the potential for the low energy arcing of the wire identified in the event does not, in itself, create an undue risk. However, Boeing acknowledges the FAA's intent to further reduce risk by requiring the actions specified in paragraph (b)(1) of the supplemental NPRM. Boeing recommends that operators perform a general visual inspection and the functional test (health check) in accordance with Boeing Service Bulletins MD90-30-026 and MD80-30-097.

Therefore, it is Boeing's position that incorporating the inspections/tests, specified in paragraph (b)(1) of the supplemental NPRM, into the FAA-approved Maintenance Planning Document(s) is more appropriate.

In regard to the general visual inspection to verify stack-up specified in paragraph (b)(2) of the supplemental NPRM, Boeing stated that stack-up issues are not applicable to the alternate static port heater assembly. As stated previously, it is Boeing's assessment that improper stack-up of the primary

static port assembly will not increase the potential for fire as described. Therefore, Boeing disagrees with the intent of paragraph (b)(2).

We concur with Boeing's recommendation that to further reduce risk, operators should perform a general visual inspection and functional test in accordance with Boeing Service Bulletin MD90-30-026, Revision 1, dated May 27, 2005. However, we do not agree that incorporation of the inspections/tests into the applicable FAA-approved Maintenance Planning Document(s) is more appropriate than issuance of this AD. We consider issuance of an AD necessary because ADs are the means to mandate accomplishment of procedures and adherence to specific compliance times.

We have determined, based on the above comments, that we will issue this AD with the requirement of repetitive inspections and the functional tests, as proposed, in accordance with Boeing Service Bulletin MD90-30-026, Revision 1, dated May 27, 2005, to identify and remove marginal static port heaters before they fail and generate sparks.

Based on the technical and economic information provided earlier, we do agree with Boeing that inspection of the heater and insulator for incorrect stacking is not necessary. We have revised paragraph (b) of this AD accordingly.

Clarification of Alternative Method of Compliance (AMOC) Paragraph

We have revised this action to clarify the appropriate procedure for notifying the principal inspector before using any approved AMOC on any airplane to which the AMOC applies.

Explanation of Change to Cost Impact

After the supplemental NPRM was issued, we reviewed the figures we have used over the past several years to calculate AD costs to operators. To account for various inflationary costs in the airline industry, we find it necessary to increase the labor rate used in these calculations from \$65 per work hour to \$80 per work hour. The cost impact information, below, reflects this increase in the specified hourly labor rate.

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 described previously. 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 116 airplanes of the affected design in the worldwide fleet. The FAA estimates that 22 airplanes of U.S. registry are affected by this AD.

It will take approximately 1 work hour per airplane to accomplish the general visual inspection for wire damage and functional test, at an average labor rate of \$80 per work hour. Based on these figures, the cost impact of the inspection for wire damage and functional test on U.S. operators is estimated to be \$1,760, or \$80 per airplane, per inspection cycle.

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.

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 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:



2007-17-19 McDonnell Douglas: Amendment 39-15177. Docket 2003-NM-194-AD.

Applicability: Model MD-90-30 airplanes, certificated in any category, as identified in Boeing Service Bulletin MD90-30-026, Revision 1, dated May 27, 2005.

Compliance: Required as indicated, unless accomplished previously.

To prevent an electrical short of the static port heater from sparking and igniting the insulation blanket adjacent to the static port heater, which could result in smoke and/or fire in the cabin area, accomplish the following:

Service Bulletin References

(a) The term "service bulletin," as used in this AD, means the Accomplishment Instructions of Boeing Service Bulletin MD90-30-026, Revision 1, dated May 27, 2005.

Inspection and Functional Test

(b) Within 18 months after the effective date of this AD, perform a general visual inspection of the left and right primary and alternate static port heater assemblies for wire damage; and perform a functional test of the left and right primary and alternate static port heater assemblies; in accordance with the service bulletin. Repeat the actions thereafter at intervals not to exceed 48 months.

Note 1: For the purposes of this AD, a general visual inspection is: "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 from within touching distance unless otherwise specified. A mirror may be necessary to ensure visual access to all surfaces in the inspection area. This level of inspection is made under normal 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."

Wire Damage or Heater Failures

(c) If wire damage is found and/or the heater assembly fails the functional test during the general visual inspection and functional test required by paragraph (b) of this AD: Before further flight, replace the damaged or inoperative static port heater assembly with a new or serviceable static port heater assembly in accordance with the service bulletin.

Actions Accomplished According to Previous Issue of Service Bulletin

(d) Actions accomplished before the effective date of this AD according to Boeing Service Bulletin MD90-30-026, dated February 15, 2002, are considered acceptable for compliance with the corresponding actions specified in this AD.

Alternative Methods of Compliance (AMOCs)

(e)(1) In accordance with 14 CFR 39.19, the Manager, Los Angeles Aircraft Certification Office (ACO), is authorized to approve alternative methods of compliance for this AD.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Incorporation by Reference

(f) Unless otherwise specified in this AD, the actions must be done in accordance with Boeing Service Bulletin MD90-30-026, Revision 1, dated May 27, 2005. 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. To get copies of this service information, contact Boeing Commercial Airplanes, Long Beach Division, 3855 Lakewood Boulevard, Long Beach, California 90846, Attention: Data and Service Management, Dept. C1-L5A (D800-0024). To inspect copies of this service information, go to the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington; or to the FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California; or to the National Archives and Records Administration (NARA). For information on the availability of this material at the NARA, call (202) 741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Effective Date

(g) This amendment becomes effective on October 2, 2007.

Issued in Renton, Washington, on August 14, 2007.

Stephen P. Boyd,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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