

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NM-357-AD; Amendment 39-13253; AD 2003-16-01]

RIN 2120-AA64

Airworthiness Directives; McDonnell Douglas Model MD-11 and -11F Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain McDonnell Douglas Model MD-11 and -11F airplanes, that requires modifying the overhead instrument lighting by relocating the dimmer control unit and revising the wire routing. This action is necessary to prevent overheating and internal component failure of the dimmer control unit of the overhead instrument lighting, which could result in smoke and/or fire in the flight compartment. This action is intended to address the identified unsafe condition.

DATES: Effective September 12, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of September 12, 2003.

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: 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-11 and -11F airplanes was published in the Federal Register on May 15, 2002 (67 FR 34635). That action proposed to require modifying the overhead instrument lighting by relocating the dimmer control unit and revising the wire routing.

Comments

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

One commenter states no objection to the proposed AD.

Request To Ensure That Relocation of Switch Would Eliminate Unsafe Condition

Two commenters express concern about whether relocating the dimmer control unit for the overhead instrument light from its existing location to a better-ventilated area will adequately address the unsafe condition. The commenters note that the proposed AD states that inadequate heat dissipation in the existing location contributed to the overheating and internal component failure of the dimmer control unit. Both commenters question whether the proposed AD is addressing the root cause of the smoke in the flight deck—i.e., the failure of the internal components in the dimmer control unit. The commenters noted that a related AD, AD 98-24-02, amendment 39-10889 (63 FR 63402, November 13, 1998), requires a modification of the dimmer control unit to replace the capacitor in the dimmer control unit with a new capacitor having a higher temperature rating. One of the commenters notes, however, that, even after accomplishment of AD 98-24-02, several operators have reported events involving smoke in the flight deck and failure of the new capacitors. Both commenters question whether adequate research has been done to ensure that relocating the dimmer control unit will preclude the overheating condition that can lead to smoke in the flight deck. One of the commenters states that the airplane manufacturer has informed it that no on-aircraft temperature readings were taken either before or after relocating the dimmer control unit. That commenter requests that such on-aircraft testing be accomplished before the FAA proceeds with this rulemaking action.

We infer that the commenters want us to postpone the proposed rulemaking until further testing and analysis are done to ensure that the proposed action will address the unsafe condition. We concur with the commenters' request and have delayed issuance of this final rule until now. Testing was performed on a Model MD-11 airplane to measure the temperature of the dimmer control unit in the existing and new locations. The dimmer control unit had been modified to incorporate the new capacitor. Internal and external temperatures of the dimmer control unit, including temperature of the new capacitor, were recorded every 10 seconds for an hour and forty minutes. Analysis of the test results revealed that the capacitor in the dimmer control unit was heated to approximately 90 percent of its temperature rating in its old location versus approximately 60 percent of its temperature rating in the new location. These results support the hypothesis that the lack of heat dissipation in the existing location of the dimmer control unit contributes to the overheating condition and capacitor failure; moving the dimmer control unit to the new location should correct this unsafe condition. No change to the final rule is necessary in this regard.

Another commenter states that it does not agree that relocating the dimmer control unit will be effective in preventing the overheating condition. The commenter states that increased ventilation may "fan the flames." The commenter states that it has developed and tested a modified model of the dimmer control unit, for which the FAA has granted a Parts Manufacturing Approval (PMA). The commenter states that redesign of the circuitry in this modification eliminates the possibility of capacitor overheating. The commenter requests that we consider its modified dimmer control unit as a proposed corrective action.

We do not concur. Testing has shown that, rather than "fanning the flames," relocating the dimmer control unit to a better ventilated area will ensure that airflow is increased and heat is dissipated more effectively, which will alleviate the overheating condition. The testing described previously supports this action. Further, we recognize that, in order to obtain a PMA to replace or modify a type certificated product, a part is required to meet the airworthiness requirements of the Federal Aviation Regulations (FARs) applicable to the airplane model on which the part is to be installed. The part approved by the PMA must have been subjected to all necessary tests and computations as one method of showing compliance with the applicable airworthiness requirements. However, the airworthiness requirements approval for installing a part approved by a PMA may not address unsafe conditions that are likely to be encountered in service operations. In addition, we require the holder of the type certificate for the subject airplane model to make the necessary design changes to correct an unsafe condition by submitting appropriate design changes for approval and, upon the approval of the design changes, make available the descriptive data covering the changes to all operators of airplanes previously certificated under the type certificate. For these reasons, we cannot mandate a part approved by a third-party PMA to correct an unsafe condition. However, per the provisions of paragraph (b) of this AD, an operator may submit a request for approval of the installation of a modified dimmer control unit, such as the one to which the commenter refers, as an alternative method of compliance (AMOC) with this AD. The request should include adequate data to justify that installation of the modified dimmer control unit will provide an acceptable level of safety. No change to the final rule is necessary in this regard.

Request To Consider Parallel Rulemaking for Other Airplanes and Other Areas

One commenter is concerned that the overheating condition and capacitor failures in the dimmer control unit may also occur on other airplane models, such as McDonnell Douglas Model MD-10 and DC-10 airplanes, or on other dimmer control units installed in locations other than the overhead area. The commenter notes that capacitor failures within the dimmer control units on other airplane models have been observed and tracked for identification of the cause. The commenter provides data on these other occurrences.

We have reviewed the data provided by the commenter. These data reveal that capacitor failures in the overhead dimmer control unit on other airplanes do not represent systemic failures, and capacitor failures at other locations on the airplane are not related to overheating and are not systemic failures. No change to the final rule is necessary in this 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 as proposed.

Changes to 14 CFR Part 39/Effect on the AD

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance. However, for clarity and consistency in this final rule, we have retained the language of the NPRM regarding that material.

Change to Labor Rate Estimate

After the proposed AD was issued, we reviewed the figures we use to calculate the labor rate to do the required actions. To account for various inflationary costs in the airline industry, we find it

appropriate to increase the labor rate used in these calculations from \$60 per work hour to \$65 per work hour. The economic impact information, below, has been revised to reflect this increase in the specified hourly labor rate.

Cost Impact

There are approximately 195 airplanes of the affected design in the worldwide fleet. The FAA estimates that 74 airplanes of U.S. registry will be affected by this AD, that it will take approximately 4 work hours per airplane to accomplish the actions, and that the average labor rate is \$65 per work hour. Required parts will cost approximately \$101 per airplane. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be \$26,714, or \$361 per airplane.

The cost impact figure discussed above is 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:

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).

2003-16-01 McDonnell Douglas: Amendment 39-13253. Docket 2001-NM-357-AD.

Applicability: Model MD-11 and -11F airplanes, certificated in any category, as listed in McDonnell Douglas Alert Service Bulletin MD11-33A071, Revision 01, dated September 24, 2001.

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 (b) 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 overheating and internal component failure of the dimmer control unit of the overhead instrument lighting, which could result in smoke and/or fire in the flight compartment, accomplish the following:

Modification

(a) Within 18 months after the effective date of this AD: Modify the overhead instrument lighting by relocating the dimmer control unit and revising the wire routing, in accordance with McDonnell Douglas Alert Service Bulletin MD11-33A071, Revision 01, dated September 24, 2001.

Alternative Methods of Compliance

(b) 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 2: 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

(c) 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

(d) The actions shall be done in accordance with McDonnell Douglas Alert Service Bulletin MD11-33A071, Revision 01, dated September 24, 2001. 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

(e) This amendment becomes effective on September 12, 2003.

Issued in Renton, Washington, on July 29, 2003.

Kalene C. Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 03-19681 Filed 8-7-03; 8:45 am]

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