

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. 2000-NM-39-AD; Amendment 39-12316; AD 2001-14-06]  
RIN 2120-AA64**

**Airworthiness Directives; Boeing Model 737-300, -400, and -500 Series Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to all Boeing Model 737-300, -400, and -500 series airplanes, that requires repetitive inspections of certain connectors located in the main wheel wells to detect discrepancies; and corrective action, if necessary. This amendment is prompted by reports indicating engine shutdown during flight due to uncommanded movement of the engine shutoff valve. These actions are necessary to detect and correct discrepancies of certain connectors located in the main wheel wells, which could result in electrical arcing of the connectors, uncommanded closure of the engine fuel shut-off valves, and consequent in-flight loss of thrust or engine shutdown from lack of fuel.

**DATES:** Effective August 16, 2001.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of August 16, 2001.

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Stephen Oshiro, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2793; fax (425) 227-1181.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to all Boeing Model 737-300, -400, and -500 series airplanes was published in the Federal Register on August 28, 2000 (65 FR 52049). That action proposed to require repetitive inspections of certain connectors located in the main wheel wells to detect discrepancies; and corrective action, if necessary.

## 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.

### Supportive Comment

One commenter states that it has done the initial inspection specified in the proposed rule, and is in agreement with the recommendation for continued repetitive inspections.

### Typographical Errors

Two commenters note that there are two typographical errors in Boeing Service Letter 737-SL-24-138, dated May 24, 1999; which is specified in the proposed rule as the service information necessary to do the inspections and corrective action. The first error is on page 3 of the service letter. Action #4 identifies "connector D51641;" the correct number for the connector is D5164J. The FAA agrees that the identification of connector D51641 is in error and has revised paragraph (a) of the final rule to identify each affected connector. This action will eliminate any confusion as to which connectors require inspection, and will minimize the possibility of operators performing the inspections on the wrong connector.

The second error is in the "References," section on page 1 of the service letter and identifies "Dt-54446, Standard Wiring Practice Manual, Subject 20-60-08;" the correct reference is D6-54446. The FAA agrees that this is an incorrect reference and has advised the manufacturer accordingly. As this change is minor and not part of any procedures specified for doing the actions in the final rule, no change to the final rule is necessary in this regard.

### Extend Compliance Time

Two commenters request an extension of the compliance time for the inspections specified in paragraph (a) of the proposed rule.

One commenter asks that the compliance time for the initial inspection be extended from 12 months after the effective date of the AD, to the later of 12 months or 3,000 flight cycles after the effective date of the AD. The commenter also asks that the repetitive inspections be accomplished at the later of 18 months or 4,500 flight hours, instead of at intervals of 18 months. The commenter states that this extension is requested so it can do the inspections at a 'C'-check. The commenter adds that this would provide the opportunity for operators to accomplish the work at a scheduled maintenance visit, instead of scheduling special visits.

The FAA does not concur to extend the compliance time for doing the initial inspection to the later of 12 months or 3,000 flight cycles. Such an extension may allow airplanes with low utilization rates to go without being inspected for several years. The present condition of the electrical connectors on each airplane is unknown, and contaminated electrical connectors are subject to corrosion regardless of whether or not the airplane is accumulating flight cycles. After doing the initial inspection, and, if necessary, correcting any discrepancies, the electrical connectors will be in a known condition for safe operation of the airplane. In this case, we concur that the repetitive inspection interval can be extended somewhat, but the interval of 4,500 flight hours will not provide an adequate level of safety for airplanes with low utilization rates, as stated above.

Another commenter asks that the compliance time for the repetitive inspections be extended from 12 months to 24 months. The commenter states that this would allow it to accomplish the required actions during regularly scheduled maintenance intervals.

We concur with the commenter and have extended the 18-month repetitive inspection interval specified in paragraph (a) of this final rule to 24 months.

## Optional Terminating Action

One commenter asks that optional terminating action be included for the repetitive inspections specified in paragraph (a) of the proposed rule. The commenter suggests two possible terminating actions, as follows:

- Inspect the connectors in accordance with the service letter and replace the spare pins and filler plugs with pins that have spare wires installed. (This action would provide the same level of sealing capability as the existing wires terminated within the connector.) Or
- Replace the existing connectors with new connectors having no spare pin positions. (This action would completely remove any potential of contaminants entering through a spare pin location.)

The FAA does not concur. Missing filler rods or spare contacts could not be verified in two of the three incidents that were reported to us. As a result, we have not been able to determine the path of the contamination that entered the connectors. It is possible that contaminants could enter the connectors despite the presence of filler rods and contacts with wires. Without verification of the cause of the path of contamination, repetitive inspections are required to ensure that electrical arcing and uncommanded closure of the engine fuel shut-off valves do not occur. Termination of the repetitive inspections will necessitate design changes that will decrease the effects of connector contamination. Should the manufacturer develop such design changes, we may consider additional rulemaking in the future. 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 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 1,974 Model 737 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 755 airplanes of U.S. registry will be affected by this AD, that it will take approximately 1 work hour per airplane to accomplish the required inspection, and that the average labor rate is \$60 per work hour. The cost of required parts will be negligible. Based on these figures, the cost impact of the inspection required by this AD on U.S. operators is estimated to be \$45,300, or \$60 per airplane, per inspection cycle.

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.

### **Sec. 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 "av-info.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).

**2001-14-06 Boeing:** Amendment 39-12316. Docket 2000-NM-39-AD.

*Applicability:* All Model 737-300, -400, and -500 series 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 (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 detect and correct discrepancies of certain connectors located in the main wheel wells, which could result in electrical arcing of the connectors, uncommanded movement of the engine fuel shut-off valves to the closed position, and consequent in-flight loss of thrust or engine shutdown from lack of fuel, accomplish the following:

## **Repetitive Inspections/Corrective Action**

(a) Within 12 months after the effective date of this AD: Perform a detailed visual inspection of connectors D5162P, D5162J, D5164P, and D5164J (connectors are linked to the fuel shut-off valves and outboard landing lights), located in the main wheel wells, to detect discrepancies (missing spare contacts and filler rods, improper plugs or filler rods, or contamination or corrosion), as specified in Boeing Service Letter 737-SL-24-138, dated May 24, 1999. Repair any discrepancies in accordance with the service letter, and repeat the inspection thereafter at intervals not to exceed 24 months.

**Note 2:** 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."

## **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, Seattle 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, Seattle ACO.

**Note 3:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

### **Special Flight Permit**

(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 Boeing Service Letter 737-SL-24-138, including attachment, dated May 24, 1999. 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 Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; 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 August 16, 2001.

Issued in Renton, Washington, on July 2, 2001.

**Vi L. Lipski,**

*Manager, Transport Airplane Directorate, Aircraft Certification Service.*

[FR Doc. 01-17117 Filed 7-11-01; 8:45 am]

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