

[Federal Register: July 8, 2009 (Volume 74, Number 129)]
[Rules and Regulations]
[Page 32423-32426]
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[DOCID:fr08jy09-11]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-1116; Directorate Identifier 2007-NM-231-AD; Amendment 39-15954; AD 2009-14-04]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 737-100, -200, -200C, -300, -400, and -500 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. For certain airplanes, this AD requires deactivating or modifying the wiring to the outboard landing lights, until the wire bundles and electrical connectors have been replaced. For all airplanes, this AD also requires inspecting for any broken, damaged, or missing fairleads, grommets, and wires in the four electrical junction boxes of the main wheel well, and corrective actions if necessary. For certain airplanes, this AD also requires replacing certain wire bundles for the landing lights and fuel shutoff valves, and related investigative, other specified, and corrective actions if necessary. For certain airplanes, this AD also requires replacing of certain electrical connectors and backshell clamps. This AD results from reports of uncommanded engine shutdowns and burned and damaged wire bundles associated with the outboard landing lights and engine fuel shutoff valves. This AD also results from reports of damaged and missing grommets and broken and damaged fairleads in the electrical junction boxes of the main wheel well. We are issuing this AD to prevent a hot short between the outboard landing light and fuel shutoff valve circuits, which could result in an uncommanded engine shutdown. We are also issuing this AD to prevent corrosion of the electrical connectors of the wing rear spars, which could result in short circuits and consequent incorrect functioning of airplane systems needed for safe flight and landing.

DATES: This AD is effective August 12, 2009.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of August 12, 2009.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (telephone 800-647-5527) is the Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

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 98057-3356; telephone (425) 917-6480; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to certain Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. That NPRM was published in the Federal Register on October 22, 2008 (73 FR 62937). That NPRM proposed to require deactivating or modifying of the wiring to the outboard landing lights, until the wire bundles and electrical connectors have been replaced. For all airplanes, that NPRM proposed to require inspecting for any broken, damaged, or missing fairleads, grommets, and wires in the four electrical junction boxes of the main wheel well, and corrective actions if necessary. For certain airplanes, that NPRM also proposed to require replacing of certain wire bundles for the landing lights and fuel shutoff valves, and related investigative, other specified, and corrective actions if necessary. For certain airplanes, that NPRM also proposed to require replacing certain electrical connectors and backshell clamps.

Comments

We gave the public the opportunity to participate in developing this AD. We considered the comments received from the two commenters.

Support for the NPRM

Boeing concurs with the contents of the NPRM.

Request for Work Instructions Correction

Southwest Airlines states that there appears to be an error in the work instructions of Boeing Alert Service Bulletin 737-33A1140, dated May 22, 2006. Figure 2 (left wing) gives instructions to route new wires, and Figure 4 (right wing) has no work instructions for wire termination in either figure.

We infer that Southwest Airlines requests that we revise the final rule to account for these apparent service bulletin errors and that clarification is necessary. Instructions for terminating the new wires are provided by the work instructions associated with Figure 1 (left wing) and Figure 3

(right wing) in Boeing Alert Service Bulletin 737-33A1140, dated May 22, 2006. We have not changed the final rule regarding this issue.

Request Alternative to Corrective Action

Southwest Airlines proposes that we revise the NPRM to require the use of detailed inspections of the referenced wire bundles of the landing lights and fuel shutoff valves, as well as performing operational checks of these items at 180-day intervals from the effective date of this AD, as a substitute for the corrective actions described by paragraph (f) of the proposed AD. The commenter states that the deactivation of the outboard landing lights per paragraph (f)(1) of the NPRM would be considered a temporary solution and would not provide a positive operational situation.

We disagree. The alternative corrective action proposed by the commenter will not effectively address the potential unsafe condition for the following reasons:

1. The short circuiting of the wires for the landing lights and engine fuel shutoff valves occurs within the wire bundle, which is covered by a protective overbraid. It is not possible to visually inspect the affected wires without partially removing the overbraid and disturbing the wires, which could cause the wires to be damaged.

2. Operational testing of the outboard landing lights and the engine fuel shutoff valves at 180-day intervals will not be effective in detecting the failures since the short circuits occur suddenly and are not preceded by symptoms that indicate the onset of the failure.

3. The corrective actions described by paragraph (f) of this AD are intended to be a temporary solution to the potential unsafe condition until sufficient replacement wire bundles can be manufactured to allow incorporating the final corrective action into the affected airplanes. The final corrective action is described by paragraph (g) of this AD. The compliance time for doing the final corrective action required by paragraph (g) of this AD is within 60 months. Mandating the final corrective action without the corrective action of paragraph (f) is not considered acceptable because this would expose the airplanes of the affected fleet to the potential unsafe condition for an excessive amount of time.

We have not changed the final rule regarding this issue. However, operators may request approval of an alternative method of compliance in accordance with paragraph (j) of this AD.

Explanation of Changes to Costs of Compliance

We have revised the Costs of Compliance to specify only the per product cost for deactivating and modifying the wiring to the outboard landing lights. We are not specifying the total cost for all affected airplanes for those two actions because operators may accomplish either action.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD as proposed.

Costs of Compliance

We estimate that the actions specified in Boeing Alert Service Bulletin 737-33A1140 affect about 511 Model 737-300, -400, and -500 series airplanes of U.S. registry. Operators may accomplish either the deactivation or modification.

We estimate that it takes about 1 work-hour per product to comply with the deactivation specified in this AD. The average labor rate is \$80 per work-hour. Based on these figures, we estimate the cost of the deactivation, if done, to the U.S. operators to be \$80 per product.

We estimate that it takes about 31 work-hours per product to comply with the modification specified in this AD. The average labor rate is \$80 per work-hour. Required parts for the modification

cost about \$573 per product. Based on these figures, we estimate the cost of modification, if done, to the U.S. operators to be \$3,053 per product.

We estimate that the actions specified in Boeing Service Bulletin 737-28-1241, Revision 1, dated August 31, 2007, affect up to 891 Model 737-100, -200, -200C, -300, -400, and -500 series airplanes of U.S. registry. The following table provides the estimated costs, at an average labor rate of \$80 per work-hour, for U.S. operators to comply with the actions specified in that service bulletin.

Action	Estimated Costs				
	Work-hours	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Part 1—Replacement of wire bundles	Up to 91	Up to \$18,439	\$25,719	511	\$13,142,409
Part 2—Inspection of junction boxes	1	0	80	891	71,280
Part 3—Replacement of electrical connectors	2	298	458	400	183,200

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 Findings

This AD will not have federalism implications under Executive Order 13132. This AD 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.

For the reasons discussed above, I certify that this AD:

- (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.

You can find our regulatory evaluation and the estimated costs of compliance in the AD Docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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. The FAA amends § 39.13 by adding the following new AD:



2009-14-04 Boeing: Amendment 39-15954. Docket No. FAA-2008-1116; Directorate Identifier 2007-NM-231-AD.

Effective Date

(a) This airworthiness directive (AD) is effective August 12, 2009.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Boeing Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, certificated in any category; as identified in Boeing Service Bulletin 737-28-1241, Revision 1, dated August 31, 2007.

Unsafe Condition

(d) This AD results from reports of uncommanded engine shutdowns and burned and damaged wire bundles associated with the outboard landing lights and engine fuel shutoff valves. This AD also results from reports of damaged and missing grommets and broken and damaged fairleads in the electrical junction boxes of the main wheel well. We are issuing this AD to prevent a hot short between the outboard landing light and fuel shutoff valve circuits, which could result in an uncommanded engine shutdown. We are also issuing this AD to prevent corrosion of the electrical connectors of the wing rear spars, which could result in short circuits and consequent incorrect functioning of airplane systems needed for safe flight and landing.

Compliance

(e) Comply with this AD within the compliance times specified, unless already done.

Deactivating or Modifying the Outboard Landing Lights

(f) For Model 737-300, -400, and -500 series airplanes identified in Boeing Alert Service Bulletin 737-33A1140, dated May 22, 2006: Within 180 days after the effective date of this AD, accomplish the actions specified in either paragraph (f)(1) or (f)(2) of this AD. Accomplishing the applicable actions required by paragraph (g) of this AD terminates the requirements of this paragraph.

(1) Deactivate the outboard landing lights by accomplishing all of the actions specified in Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-33A1140, dated May 22, 2006.

Note 1: The Master Minimum Equipment List (MMEL) prohibits dispatching an airplane for night operations with deactivated outboard landing lights in the event that either of the inboard landing lights fail. Operators should note that, if the outboard landing lights are deactivated in

accordance with Part 1 of Boeing Alert Service Bulletin 737-33A1140, dated May 22, 2006, there is no MMEL relief allowing for this configuration for night operations should any inboard landing light fail.

(2) Modify the wiring to the outboard landing lights by accomplishing all of the actions specified in Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-33A1140, dated May 22, 2006.

Inspection and Replacements

(g) For all airplanes: Within 60 months after the effective date of this AD, do the applicable actions specified in paragraphs (g)(1), (g)(2), and (g)(3) of this AD, by accomplishing all of the applicable actions specified in the Accomplishment Instructions of Boeing Service Bulletin 737-28-1241, Revision 1, dated August 31, 2007. For Model 737-300, -400, and -500 series airplanes identified in Boeing Alert Service Bulletin 737-33A1140, dated May 22, 2006, accomplishing the applicable actions required by this paragraph terminates the requirements of paragraph (f) of this AD.

(1) Replace the wire bundles for the landing lights and fuel shutoff valves with new, redesigned wire bundles, and do the related investigative, other specified, and corrective actions, as applicable. The related investigative, other specified, and corrective actions must be done before further flight after the replacement.

(2) Do a detailed inspection for any broken, damaged, or missing fairleads, any damaged or missing grommets, and any chafed or damaged wires or wire bundles in the four electrical junction boxes of the main wheel well, and do the applicable corrective actions. The corrective actions must be done before further flight after the inspection.

(3) Replace the electrical connectors and backshell clamps with new, improved electrical connectors and backshell clamps, as applicable.

Credit for Actions Done According to Previous Issue of Service Bulletin

(h) For airplanes identified as Groups 1 and 2 in Boeing Service Bulletin 737-28-1241, Revision 1, dated August 31, 2007: Actions done before the effective date of this AD in accordance with Boeing Service Bulletin 737-28-1241, dated April 7, 2006, are acceptable for compliance with the requirements of paragraph (g) of this AD.

(i) For all airplanes: Actions done before the effective date of this AD in accordance with Part 2 of the Accomplishment Instructions of Boeing Service Bulletin 737-28-1241, dated April 7, 2006, are acceptable for compliance with the requirements of paragraph (g)(2) of this AD.

Alternative Methods of Compliance (AMOCs)

(j)(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, ATTN: Stephen Oshiro, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle ACO, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6480; fax (425) 917-6590; has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

(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.

Material Incorporated by Reference

(k) You must use Boeing Service Bulletin 737-28-1241, Revision 1, dated August 31, 2007; and Boeing Alert Service Bulletin 737-33A1140, dated May 22, 2006; as applicable; to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of this service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221 or 425-227-1152.

(4) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, WA, on June 11, 2009.

Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.