

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [64 FR 54763 No. 195 10/08/99]

[Docket No. 98-NM-318-AD; Amendment 39-11360; AD 99-21-15]

RIN 2120-AA64

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

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to all Boeing Model 737-100, -200, -300, -400, and -500 series airplanes, that currently requires removal of the fuel boost pump wiring in the conduits of the wing and center fuel tanks; an inspection to detect damage of the wiring, and corrective action, if necessary; and eventual installation of Teflon sleeving over the electrical cable. This amendment expands the inspection requirement to include airplanes with fewer than 20,000 flight hours; requires additional repetitive inspections for all airplanes; reidentifies the requirement to install Teflon sleeving as a nonterminating action; and removes the requirement to report inspection results. This amendment is prompted by the FAA's determination that Model 737-100 through -500 series airplanes that are not affected by the current AD must also be protected against excessive wire chafing of the fuel boost pump wiring and that all Model 737-100 through -500 series airplanes must be repetitively inspected. The actions specified by this AD are intended to detect and correct chafing and prevent electrical arcing between the fuel boost pump wiring and the surrounding conduit, which could result in arc-through of the conduit, and consequent fire or explosion of the fuel tank.

DATES: Effective November 12, 1999.

The incorporation by reference of Boeing Service Bulletin 737-28A1120, Revision 2, dated November 26, 1998, as listed in the regulations, is approved by the Director of the Federal Register as of November 12, 1999.

The incorporation by reference of Boeing Alert Service Bulletin 737-28A1120, Revision 1, dated May 28, 1998, as listed in the regulations, was approved previously by the Director of the Federal Register as of October 15, 1998 (63 FR 52152, September 30, 1998).

The incorporation by reference of Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; as listed in the regulations; was

approved previously by the Director of the Federal Register as of June 29, 1998 (63 FR 34271, June 24, 1998).

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: Dorr Anderson, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2684; fax (425) 227-1181.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 98-19-09, amendment 39-10751 (63 FR 52152, September 30, 1998), which is applicable to all Boeing Model 737-100, -200, -300, -400, and -500 series airplanes, was published in the **Federal Register** on January 11, 1999 (64 FR 1545). The action proposed to continue to require removal of the fuel boost pump wiring in the conduits of the wing and center fuel tanks; an inspection to detect damage of the wiring, and corrective action, if necessary; and eventual installation of Teflon sleeving over the electrical cable. The action also proposed to expand the inspection requirement to include additional airplanes, add repetitive inspections for all airplanes, and reidentify the requirement to install Teflon sleeving as a nonterminating action.

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.

Support for the Proposal

Three commenters, including the airplane manufacturer, support the requirement of initial inspection of the fuel boost pump wiring specified in paragraph (f) of the proposed rule.

Three commenters, including the airplane manufacturer, support the requirement of repetitive inspections of the fuel boost pump wiring specified in paragraph (g) and reidentification of the requirement to install Teflon sleeving as a nonterminating action specified in paragraphs (h) through (k) of the proposed rule.

Requests to Revise Requirements for Certain Airplanes

One commenter, the airplane manufacturer, requests that the applicability for the initial inspection of the fuel boost pump wiring specified in paragraph (f) of the proposed AD be limited to airplanes having line numbers 1 through 3072 inclusive. The commenter states that airplanes having line numbers 3073 and subsequent were delivered with the Teflon sleeving specified in paragraphs (h) through (k) of the proposed AD already installed. The FAA concurs with the commenter's request and has revised paragraph (f) of the final rule accordingly. Airplanes having line numbers 3073 and subsequent still require repetitive

inspections of the fuel boost pump wiring at intervals not to exceed 30,000 flight hours as specified in paragraph (g) of the AD. Therefore, paragraph (f) of the final rule has also been revised to require an initial inspection of the fuel boost pump wiring prior to the accumulation of 30,000 total flight hours for those airplanes.

One commenter requests that the applicability for the repetitive inspections of the fuel boost pump wiring specified in paragraph (g) of the proposed AD include airplanes inspected in accordance with paragraphs (a), (b), and (c) of the proposed AD. The FAA concurs that airplanes inspected in accordance with paragraphs (a), (b), and (c) of this AD must be subject to the repetitive inspections specified in paragraph (g). However, by including reference to paragraph (d) in paragraph (g) of this AD, all airplanes that have accumulated more than 30,000 total flight hours are already included. The reference in paragraph (g) of this AD to paragraphs (e) and (f) includes all other airplanes. Therefore, paragraph (g) of this AD requires repetitive inspections of the fuel boost pump wiring for all Model 737-100, -200, -300, -400, and -500 series airplanes. No change to the final rule is necessary in this regard.

Request for Alternative Corrective Action

One commenter requests that paragraph (l) of the proposed AD be revised to allow removal of the case ground wire in lieu of replacement of the case ground wire with a new wire. The commenter states that Boeing Alert Service Bulletin 737-28A1120, Revision 1, dated May 28, 1998, and Boeing Service Bulletin 737-28A1120, Revision 2, dated November 26, 1998, allow removal of the case ground wire as an alternative to replacement of the case ground wire with a new wire. The FAA concurs and has revised paragraph (l) of the final rule accordingly.

Request to Eliminate the Repetitive Inspections

Two commenters request that the repetitive inspections of the fuel boost pump wiring specified in paragraph (g) of the proposed AD be eliminated. One commenter states that, because the repetitive inspections apply to the electrical cable with the Teflon sleeving installed, use of the findings from the initial inspection of the fuel boost pump wiring, which did not have the Teflon sleeving installed, to determine the interval for the repetitive inspections is without merit. This commenter requests that the FAA eliminate the proposed repetitive inspections, and instead, perform tests of the electrical cable with the Teflon sleeving installed to determine the resistance of the fuel boost pump wiring to chafing. The commenter states that only after thorough testing and examination of the data should the FAA determine whether repetitive inspections of the fuel boost pump wiring are necessary. The other commenter states that it has reviewed the data made public by the FAA with the findings from the initial inspection of the fuel boost pump wiring, and concludes that installation of Teflon sleeving over the electrical cable improves the durability of the wiring sufficiently to be considered terminating action. This commenter requests that, if the FAA determines that repetitive inspections of the fuel boost pump wiring are necessary, the interval be a minimum of 60,000 flight hours. In addition, both commenters express concern that wire bundle removal and installation can cause damage which may induce an unsafe condition that would not otherwise be present.

The FAA does not concur with the commenters' request. The FAA has determined that 30,000 flight hours represents an appropriate interval of time for the repetitive inspections of

the fuel boost pump wiring specified in paragraph (g) of this AD wherein an acceptable level of safety can be maintained. The FAA finds that the conduit-enclosed fuel boost pump wiring installation is not a fail-safe design. Therefore, repetitive inspections are necessary to ensure safe operation. This decision is supported by the testing conducted by the airplane manufacturer, and the findings from the inspections of the fuel boost pump wiring. In addition, the FAA recognizes that the fuel boost pump wiring may be damaged upon removal from and installation into the conduit. However, damage upon removal is readily detectable and a damaged wire will not be reinstalled into the airplane. The FAA also notes that the addition of the Teflon sleeving prior to installation of the wiring greatly reduces the possibility of installation damage. The sleeving allows the wiring to translate in the conduit with less friction than without sleeving, resulting in less force being required to pull the wiring through the conduit. Therefore, the FAA concludes that the hazard introduced by removal and installation of the wiring is minimal relative to the hazard of not re-inspecting at all. No change to the final rule is necessary in this regard.

Request for Reduction of Repetitive Inspection Interval

One commenter requests that the interval for the repetitive inspections of the fuel boost pump wiring specified in paragraph (g) of the proposed AD be reduced from 30,000 flight hours to 20,000 flight hours. The commenter assumes that the compliance threshold of 20,000 flight hours for the initial inspection of the fuel boost pump wiring represents the "safe life" of the wiring. The commenter then states that there appears to be no justification for the interval of 30,000 flight hours for the repetitive inspections of the fuel boost pump wiring, and that it would be logical for the compliance thresholds for the initial and repetitive inspections to be the same.

The FAA does not concur with the commenter's request. Paragraphs (d) through (f)(1) of the final rule require an initial inspection of the fuel boost pump wiring for all airplanes that do not have Teflon sleeving installed over the electrical cable, at various times, but no later than 24 months after the effective date of this AD. For some airplanes, the initial inspection will occur substantially earlier than 20,000 total flight hours. The compliance time for the initial inspection is not meant to be representative of the "safe life" of the wiring. The FAA notes that the wiring configuration is changed by adding Teflon sleeving over the electrical cable, in accordance with paragraphs (h) through (k) of this AD, between the initial inspection specified in paragraphs (d) through (f)(1) and the repetitive inspections specified in paragraph (g). The additional sleeving increases the amount of insulation around the conductor by approximately 33 percent. In developing an appropriate compliance time for the repetitive inspections, the FAA considered the recommendation of the airplane manufacturer and testing conducted by the airplane manufacturer to substantiate the selected interval. In consideration of these items, as well as the findings from the inspection of the fuel boost pump wiring, the FAA has determined that 30,000 flight hours represents an appropriate interval of time for the repetitive inspections of the fuel boost pump wiring specified in paragraph (g) of this AD wherein an acceptable level of safety can be maintained. No change to the final rule is necessary in this regard.

Request for Information on Terminating Action

One commenter requests information regarding development of terminating action for the repetitive inspections specified in paragraph (g) of the proposed AD. The commenter states that, although this AD addresses the immediate problem of chafing of the fuel boost pump

wiring, no information is provided that defines the root cause of the chafing, such as vibration, and possible terminating action for the repetitive inspections. No specific change to the rule is requested.

The FAA agrees that the actions specified in this AD do not address the root cause of the chafing of the fuel boost pump wiring; however, the FAA has determined that installation of the Teflon sleeving and the repetitive inspections address the stated unsafe condition. If the airplane manufacturer chooses to conduct testing to identify the root cause of the chafing and recommends additional design modifications, the FAA will give those due consideration. However, the FAA, as well as the manufacturer, recognizes that the hazards associated with obtaining sufficient data may outweigh the benefits of further testing. Such testing could require installation of electrical equipment inside the fuel tank to monitor conduit vibration, which may present an additional ignition source inside the tank, substantially increasing risk to test personnel and testing fixtures. No change to the final rule is necessary in this regard.

Explanation of Additional Change to the Proposal

The requirements to submit damaged electrical cables and conduits to the manufacturer and report results of the initial inspection to the FAA have been eliminated from this final rule. In the preamble to AD 98-19-09, the FAA indicated that it was considering further rulemaking action to require inspection of Model 737 series airplanes that have accumulated fewer than 20,000 total flight hours. The reporting requirements were intended to allow the manufacturer and the FAA to determine the extent of wiring damage in the affected fleet in order to consider further rulemaking action. As stated in the NPRM, this AD follows from the determination that further rulemaking action is necessary. The FAA has determined that sufficient data have been collected, and no additional data is necessary. Therefore, the reporting requirements included in paragraph (m) of the proposal are not included in this final rule.

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 2,866 airplanes of the affected design in the worldwide fleet. The FAA estimates that 1,131 airplanes of U.S. registry will be affected by this AD.

The inspection that is currently required by AD 98-19-09, and retained in this AD, takes approximately 30 work hours per airplane to accomplish, at an average labor rate of \$60 per work hour. This new AD action will require repetitive performance of that inspection. Based on these figures, the cost impact of the currently required inspection on U.S. operators is estimated to be \$2,035,800, or \$1,800 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.

Regulatory Impact

The regulations adopted herein will not have substantial direct effects 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, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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 removing amendment 39-10751 (63 FR 52152, September 30, 1998), and by adding a new airworthiness directive (AD), amendment 39-11360, to read as follows:

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION

P.O. BOX 26460

OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation

**Federal Aviation
Administration**

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, 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 FAR Subpart 39.3).

99-21-15 BOEING: Amendment 39-11360. Docket 98-NM-318-AD. Supersedes AD 98-19-09, Amendment 39-10751. Issued September 29, 1999.

Applicability: All Model 737-100, -200, -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 (m)(1) 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 chafing and prevent electrical arcing between the fuel boost pump wiring and the surrounding conduit, which could result in arc-through of the conduit, and consequent fire or explosion of the fuel tank, accomplish the following:

Inspections Required By AD 98-11-52

(a) For all airplanes that have accumulated 50,000 or more total flight hours as of June 29, 1998 (the effective date of AD 98-11-52, amendment 39-10611): Prior to further flight, remove the fuel boost pump wiring from the in-tank conduit for the aft boost pumps in main tanks numbers 1 and 2, and perform a detailed visual inspection to detect damage of the wiring, in accordance with the procedures specified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; Boeing Alert Service Bulletin 737-28A1120, Revision 1, dated May 28, 1998; or Boeing Service Bulletin 737-28A1120, Revision 2, dated November 26, 1998.

(b) For all airplanes that have accumulated less than 50,000 total flight hours as of receipt of telegraphic AD T98-11-51: Prior to the accumulation of 40,000 total flight hours, or within 14 days after June 29, 1998, whichever occurs later, remove the fuel boost pump wiring from the in-tank conduit for the aft boost pumps in main tanks numbers 1 and 2, and perform a detailed visual inspection to detect damage of the wiring, in accordance with the procedures specified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; Revision 1, dated May 28, 1998; or Revision 2, dated November 26, 1998.

(c) For all airplanes: Remove the fuel boost pump wiring from the in-tank conduit for the center tank left and right boost pumps, and perform a detailed visual inspection to detect damage of the wiring, in accordance with the procedures specified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; Revision 1, dated May 28, 1998; or Revision 2, dated November 26, 1998. Accomplish the inspection at the earliest of the times specified in paragraphs (c)(1), (c)(2), and (c)(3).

(1) For Model 737-300, -400, and -500 series airplanes: Inspect prior to the accumulation of 40,000 total flight hours, or within 14 days after June 29, 1998, whichever occurs later.

(2) For Model 737-100 and -200 series airplanes: Inspect prior to the accumulation of 40,000 total flight hours, or within 10 days after June 29, 1998, whichever occurs later.

(3) For all airplanes: Inspect prior to the accumulation of 50,000 total flight hours, or within 5 days after June 29, 1998, whichever occurs later.

(d) For all airplanes: Prior to the accumulation of 30,000 total flight hours or within 45 days after June 29, 1998, whichever occurs later, remove the fuel boost pump wiring from the in-tank conduit for the aft boost pumps in main tanks numbers 1 and 2, and the center tank left and right boost pumps, and perform a detailed visual inspection to detect damage of the wiring, in accordance with the procedures specified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; Revision 1, dated May 28, 1998; or Revision 2, dated November 26, 1998.

Inspections Required By AD 98-19-09

(e) For airplanes that have accumulated 20,000 or more total flight hours and less than 30,000 total flight hours as of October 15, 1998 (the effective date of AD 98-19-09, amendment 39-10751): Within 60 days after October 15, 1998, remove the fuel boost pump wiring from the in-tank conduit for the aft boost pumps in main tanks numbers 1 and 2, and the center tank left and right boost pumps, and perform a detailed visual inspection to detect damage of the wiring; in accordance with the procedures specified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; Revision 1, dated May 28, 1998; or Revision 2, dated November 26, 1998.

New Inspection Requirements

(f) Remove the fuel boost pump wiring from the in-tank conduit for the aft boost pumps in main tanks numbers 1 and 2, and the center tank left and right boost pumps, and perform a detailed visual inspection to detect damage of the wiring; at the time specified in paragraphs (f)(1) and (f)(2) of this AD, as applicable. Perform these actions in accordance with the procedures specified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; Boeing Alert Service Bulletin 737-28A1120, Revision 1, dated May 28, 1998; or Boeing Service Bulletin 737-28A1120, Revision 2, dated November 26, 1998.

(1) For airplanes having line numbers 1 through 3072 inclusive that have accumulated less than 20,000 total flight hours as of October 15, 1998: Inspect at the earlier of the times specified in paragraph (f)(1)(i) and (f)(1)(ii) of this AD.

(i) Prior to the accumulation of 20,000 total flight hours, or within 60 days after the effective date of this AD, whichever occurs later.

(ii) Within 24 months after the effective date of this AD.

(2) For airplanes having line numbers 3073 and subsequent: Inspect prior to the accumulation of 30,000 total flight hours.

(g) For all airplanes: Repeat the inspection required by paragraph (d), (e), or (f) of this AD, as applicable, at intervals not to exceed 30,000 flight hours after initial accomplishment of the applicable inspection.

Corrective Actions

(h) If red, yellow, blue, or green wire insulation cannot be seen through the outer jacket of the electrical cable during any inspection required by this AD: Prior to further flight, accomplish paragraph (h)(1), (h)(2), or (h)(3) of this AD in accordance with procedures specified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; Revision 1, dated May 28, 1998; or Revision 2, dated November 26, 1998.

(1) Install Teflon sleeving over the electrical cable, and reinstall the cable.
Or

(2) Reinstall the electrical cable without Teflon sleeving over the cable. Within 500 flight hours after accomplishment of the reinstallation, repeat the inspection described in paragraph (d), (e), or (f) of this AD, as applicable, and install Teflon sleeving over the cable. Or

(3) Replace the electrical cable with new cable without Teflon sleeving. Within 18 months or 6,000 flight hours, whichever occurs first, repeat the inspection

specified in paragraph (d), (e), or (f) of this AD, as applicable, and install Teflon sleeving over the cable.

(i) If red, yellow, blue, or green wire insulation can be seen through the outer jacket of the electrical cable during any inspection required by this AD, but no evidence of electrical arcing is found: Prior to further flight, accomplish either paragraph (i)(1) or (i)(2) of this AD in accordance with the procedures specified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; Boeing Alert Service Bulletin 737-28A1120, Revision 1, dated May 28, 1998; or Boeing Service Bulletin 737-28A1120, Revision 2, dated November 26, 1998.

(1) Replace the damaged electrical cable with a new cable, install Teflon sleeving over the cable, and reinstall the cable. Or

(2) Replace the electrical cable with a new cable without Teflon sleeving. Within 18 months or 6,000 flight hours, whichever occurs first, repeat the inspection described in paragraph (d), (e), or (f) of this AD, as applicable, and install Teflon sleeving over the cable.

(j) If any evidence of electrical arcing but no evidence of fuel leakage is found on the removed electrical cable during any inspection required by this AD: Prior to further flight, accomplish paragraphs (j)(1) and (j)(2) of this AD in accordance with the procedures specified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; Boeing Alert Service Bulletin 737-28A1120, Revision 1, dated May 28, 1998; or Boeing Service Bulletin 737-28A1120, Revision 2, dated November 26, 1998.

(1) Verify the integrity of the conduit in accordance with the instructions contained in NSC 03, Revision 1, or Revision 2 of the alert service bulletin. And

(2) Accomplish either paragraph (j)(2)(i) or (j)(2)(ii) of this AD in accordance with the alert service bulletin.

(i) Replace the damaged electrical cable with a new cable, install Teflon sleeving over the cable, and reinstall the cable. Or

(ii) Replace the electrical cable with a new cable without Teflon sleeving. Within 18 months or 6,000 flight hours, whichever occurs first, repeat the inspection described in paragraph (d), (e), or (f) of this AD, as applicable, and install Teflon sleeving over the cable.

(k) If any evidence of fuel is found on the removed electrical cable during any inspection required by this AD: Prior to further flight, accomplish paragraphs (k)(1) and (k)(2) of this AD in accordance with the procedures specified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998;

Boeing Alert Service Bulletin 737-28A1120, Revision 1, dated May 28, 1998; or Boeing Service Bulletin 737-28A1120, Revision 2, dated November 26, 1998.

- (1) Replace the conduit section where electrical arcing was found. And
- (2) Accomplish either paragraph (k)(2)(i) or (k)(2)(ii) of this AD.

(i) Replace the damaged electrical cable with a new cable, install Teflon sleeving over the cable, and reinstall the cable. Or

(ii) Replace the electrical cable with a new cable without Teflon sleeving. Within 18 months or 6,000 flight hours, whichever occurs first, repeat the inspection described in paragraph (d), (e), or (f) of this AD, as applicable, and install Teflon sleeving over the cable.

(l) For Groups 1 and 2 airplanes, as identified in Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998: Concurrent with the first accomplishment of corrective action in accordance with paragraph (h), (i), (j), or (k) of this AD, as applicable, replace the case ground wire with a new wire or remove the case ground wire in accordance with Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notices of Status Change NSC 01, dated May 7, 1998, NSC 02, dated May 8, 1998, and NSC 03, dated May 9, 1998; Boeing Alert Service Bulletin 737-28A1120, Revision 1, dated May 28, 1998; or Boeing Service Bulletin 737-28A1120, Revision 2, dated November 26, 1998.

Alternative Methods of Compliance

(m) (1) 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, FAA, Transport Airplane Directorate. 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.

(m) (2) Alternative methods of compliance, approved previously in accordance with AD 98-11-52 and AD 98-19-09, are approved as alternative methods of compliance with this AD.

NOTE 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

Special Flight Permits

(n) 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

(o) The actions shall be done in accordance with Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notice of Status Change NSC 01, dated

May 7, 1998, Notice of Status Change NSC 02, dated May 8, 1998, and Notice of Status Change NSC 03, dated May 9, 1998; Boeing Alert Service Bulletin 737-28A1120, Revision 1, dated May 28, 1998; or Boeing Service Bulletin 737-28A1120, Revision 2, dated November 26, 1998.

(1) The incorporation by reference of Boeing Service Bulletin 737-28A1120, Revision 2, dated November 26, 1998, as listed in the regulations, is approved by the Director of the Federal Register as of November 12, 1999.

(2) The incorporation by reference of Boeing Alert Service Bulletin 737-28A1120, Revision 1, dated May 28, 1998, was approved previously by the Director of the Federal Register as of October 15, 1998 (63 FR 52152, September 30, 1998).

(3) The incorporation by reference of Boeing Alert Service Bulletin 737-28A1120, dated April 24, 1998, as revised by Notice of Status Change NSC 01, dated May 7, 1998, Notice of Status Change NSC 02, dated May 8, 1998, and Notice of Status Change NSC 03, dated May 9, 1998, was approved previously by the Director of the Federal Register as of June 29, 1998 (63 FR 34271, June 24, 1998).

(4) 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.

(p) This amendment becomes effective on November 12, 1999.

FOR FURTHER INFORMATION CONTACT:

Dorr Anderson, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2684; fax (425) 227-1181.