

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 39**

[Docket No. 2002-NM-240-AD]

RIN 2120-AA64

**Airworthiness Directives; Boeing Model 737-600, -700, -700C, -800, and -900 Series Airplanes**

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

**SUMMARY:** This document proposes the adoption of a new airworthiness directive (AD) that is applicable to certain Boeing Model 737-600, -700, -700C, -800, and -900 series airplanes. This proposal would require installing speedbrake limitation placards in the flight compartment; and revising the Limitations Section of the Airplane Flight Manual to ensure the flightcrew is advised not to extend the speedbrake lever beyond the flight detent. For certain airplanes, this proposal would require modifying the elevator and elevator tab assembly. This action is necessary to prevent severe vibration of the elevator and elevator tab assembly, which could result in severe damage to the horizontal stabilizer, followed by possible loss of the elevator tab and consequent loss of controllability of the airplane. This action is intended to address the identified unsafe condition.

**DATES:** Comments must be received by December 30, 2002.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2002-NM-240-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. Comments may be inspected at this location between 9 a.m. and 3 p.m., Monday through Friday, except Federal holidays. Comments may be submitted via fax to (425) 227-1232. Comments may also be sent via the Internet using the following address: *9-anm-nprmcomment@faa.gov*. Comments sent via fax or the Internet must contain "Docket No. 2002-NM-240-AD" in the subject line and need not be submitted in triplicate. Comments sent via the Internet as attached electronic files must be formatted in Microsoft Word 97 for Windows or ASCII text.

The service information referenced in the proposed rule may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington

98124-2207. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington.

**FOR FURTHER INFORMATION CONTACT:** Nancy H. Marsh, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2028; fax (425) 227-1181.

**SUPPLEMENTARY INFORMATION:****Comments Invited**

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this action may be changed in light of the comments received.

Submit comments using the following format:

- Organize comments issue-by-issue. For example, discuss a request to change the compliance time and a request to change the service bulletin reference as two separate issues.
- For each issue, state what specific change to the proposed AD is being requested.
- Include justification (e.g., reasons or data) for each request.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this action must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2002-NM-240-AD." The postcard will be date stamped and returned to the commenter.

**Availability of NPRMs**

Any person may obtain a copy of this NPRM by submitting a request to the FAA, Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2002-NM-240-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056.

**Discussion**

The FAA has received several reports of excessive in-flight vibrations of the elevator and elevator tab on certain Boeing Model 737-600, -700, -700C, -800, and -900 series airplanes. The FAA responded to these reports by issuing several rulemaking actions (listed below). These actions were identified as interim action until a modification for the elevator and elevator tab assemblies was developed, approved, and available. The intent of such a modification is to reduce the reliance on inspections to assure the continued airworthiness of the affected airplanes and to relieve certain significant operational restrictions imposed on the affected airplanes. The manufacturer now has developed such a modification, and the FAA has determined that further rulemaking action is indeed necessary; this proposed AD follows from that determination.

The elevator and elevator tab are susceptible to excessive vibration and, under certain conditions, limit-cycle flutter. These vibration events have been attributed to loose or missing components, excessive wear, or excessive freeplay of the tab. Elevator tab vibrations following deployment of the speedbrakes can result in wear to the elevator tab hinges and components of the elevator tab control system. Such wear can cause the elevator tab assemblies to become loose. Continued exposure to spoiler buffeting can cause excessive wear to the elevator tab components. Continued operation of these airplanes in such conditions could result in severe damage to the horizontal stabilizer, followed by possible loss of the elevator tab and consequent loss of controllability of the airplane.

**Terminating Action for Related Rulemaking**

The requirements of this AD are intended to be terminating action for the following ADs:

- AD 99-15-09, amendment 39-11229 (64 FR 40514, July 27, 1999), was issued on July 13, 1999, and is applicable to certain Boeing Model 737-600 series airplanes. That AD requires revising the Airplane Flight Manual (AFM) to prohibit operation of the airplane under certain conditions; repetitive inspections of the tab mast fittings of the elevator tab assemblies to detect cracking; an elevator tab freeplay check; and corrective actions, if necessary. That AD also requires installing an additional fastener on the elevator tab mast fitting, which terminates the AFM revision and

extends certain repetitive inspections. That AD also requires replacement of the elevator tab mast fitting with a new, improved fitting, which terminates the required actions.

- AD 99-18-01, amendment 39-11267 (64 FR 46259, August 25, 1999), was issued on August 18, 1999, and is applicable to certain Boeing Model 737-700 and -800 series airplanes. That AD supersedes AD 99-13-51, amendment 39-11213 (64 FR 34976, June 30, 1999), to continue to require revising the AFM to prohibit operation of the airplane under certain conditions; repetitive inspections of the tab mast fitting of the elevator tab assemblies to detect cracking; an elevator tab freeplay check; and corrective actions, if necessary. AD 99-18-01 also continues to provide for optional terminating action only for certain repetitive inspections; and installing an additional fastener on the elevator tab mast fitting, which terminates the AFM revision and extends certain repetitive inspection intervals.

- AD 2001-08-09, amendment 39-12186 (66 FR 20194, April 20, 2001), was issued on April 13, 2001, and is applicable to certain Boeing Model 737-600, -700, -800, and -700C series airplanes. That AD supersedes AD 2001-04-08, amendment 39-12127 (66 FR 13229, March 5, 2001), to continue to require initial and repetitive inspections of the elevator tab assembly to detect any damage or discrepancy; and corrective actions, if necessary. AD 2001-08-09 also clarifies the applicability and certain requirements of AD 2001-04-08.

- AD 2001-09-51, amendment 39-12251 (66 FR 31141, June 11, 2001), was issued on May 25, 2001, and is applicable to certain Boeing Model 737-600, -700, -700C, and -800 series airplanes. That AD requires inspection of the small jam nut on the elevator tab control rods to detect inspection putty and to determine its condition; a torque check of the small and large jam nuts on the tab control rod, if necessary; and corrective actions, as applicable. For certain airplanes, that AD also requires a one-time inspection for torque of the small and large jam nuts on the tab control rods; and corrective actions, as applicable.

- AD 2001-12-51, amendment 39-12294 (66 FR 34098, June 27, 2001), was issued on June 20, 2001, and is applicable to all Boeing Model 737-800 series airplanes. That AD requires revising the AFM to prohibit operating the airplane at speeds in excess of 300 knots indicated airspeed (KIAS) with speedbrakes extended. That AD also

provides for optional terminating action for the AFM revision.

- AD 2001-14-05, amendment 39-12315 (66 FR 36145, July 12, 2001), was issued on July 2, 2001, and is applicable to all Boeing Model 737-600, -700, -700C, and -800 series airplanes. That AD prohibits installation of repairs of the elevator tab using previously approved repair procedures.

- AD 2002-08-52, amendment 39-12727 (67 FR 20626, April 26, 2002), was issued on April 19, 2002, and is applicable to all Boeing Model 737-600, -700, and -700C series airplanes. That AD requires revising the AFM to ensure that the flightcrew is advised of the potential hazard associated with extending the speedbrakes at speeds in excess of 300 KIAS. That AD also provides for optional modification or retrofit of the elevator tab assembly.

- AD 2002-08-20, amendment 39-12732 (67 FR 20628, April 26, 2002), was issued on April 19, 2002, and is applicable to all Boeing Model 737-600, -700, -700C, and 800 series airplanes. That AD requires inspecting the airplane following any suspected limit cycle oscillation (LCO) of the elevator tab; and revising the AFM to limit airspeeds under certain conditions and to provide the flight crew with information regarding elevator tab LCO. That AD also requires repetitive cleaning of the elevator tab and a one-time cleaning of the elevator balance bays. That AD provides for the option to repetitively clean the elevator tab and balance bays following every deicing/anti-icing of the horizontal stabilizer, which would temporarily allow airspeeds exceeding those limited by the AFM revision. For certain airplanes, that AD requires trimming the elevator balance panel seals, which will terminate the optional repetitive cleaning procedures for the balance bays.

#### Related AD

AD 2001-23-01, amendment 39-12498 (66 FR 56989, November 14, 2001), was issued on November 5, 2001, and is applicable to certain Boeing Model 737-600, -700, and -800 series airplanes. That AD supersedes AD 2001-06-08, amendment 39-12155 (66 FR 16116, March 23, 2001), to continue to require repetitive inspections of certain elevator hinge plates, and corrective action, if necessary. That AD also requires accomplishment of the previously optional replacement of the elevator hinge plates with new, improved hinge plates, as terminating action for the repetitive inspections. The requirements of AD 2001-23-01 are

prerequisite to the requirements contained in the proposed AD.

#### Explanation of Relevant Service Information

We have reviewed and approved Boeing Alert Service Bulletin 737-11A1109, dated March 28, 2002, which, for certain airplanes, describes procedures for installation of a speedbrake limitation marker (placard) on the P1-1 and P3-3 panel assemblies. For Group 1 airplanes, the placard is centered directly over the Captain's and the First Officer's clocks; for Group 2 airplanes, the placard is centered directly over the Captain's clock, and directly under the First Officer's clock.

We also have reviewed and approved Boeing Alert Service Bulletin 737-55A1080, dated September 19, 2002, which describes procedures for modification of the elevator and elevator tab assembly. The modification includes installation of a new clevis fitting and a new tab mechanism on the horizontal stabilizer and, for certain airplanes, examination of the hinge plates on the stabilizer trailing edge to make sure the specified hinges are installed. The modification also includes changes to the seals in the balance bays and installation of new elevators and tab assemblies, followed by adjustments and tests of the new installation.

Accomplishment of the actions specified in the service bulletins is intended to adequately address the identified unsafe condition.

#### Explanation of Requirements of Proposed Rule

Since an unsafe condition has been identified that is likely to exist or develop on other products of this same type design, the proposed AD would require accomplishment of the actions specified in the service bulletins described previously, except as discussed below.

#### Differences Between Proposed AD and Service Information

*Boeing Alert Service Bulletin 737-11A1109*

Although the service bulletin recommends accomplishing the installation of the placards "at the first maintenance period when material and manpower are available," we have determined that such an imprecise compliance time would not address the identified unsafe condition in a timely manner. In developing an appropriate compliance time for the installation in this proposed AD, we considered not only the manufacturer's recommendation, but the degree of

urgency associated with addressing the subject unsafe condition, the average utilization of the affected fleet, and the time necessary to perform the modifications. In light of all of these factors, we find a compliance time of 90 days for completing the required installation to be warranted, in that it represents an appropriate interval of time allowable for affected airplanes to continue to operate without compromising safety.

Additionally, the service bulletin does not recommend a corresponding change to the Limitations Section of the AFM to reflect the speedbrake limitation on the placards; however, this proposed AD requires that, for certain airplanes, such a change be made within 90 days to instruct the flightcrew not to extend the speedbrake lever beyond the flight detent in flight.

#### **Boeing Alert Service Bulletin 737–55A1080**

The service bulletin specifies accomplishment of certain actions required by this proposed AD in accordance with either the Boeing 737 Airplane Maintenance Manual (AMM) or an “operator’s equivalent procedure.” However, this proposed AD requires that the actions required by those paragraphs be accomplished in accordance with the procedures specified in the Boeing 737 AMM. “Operators’ equivalent procedures” may be used only if approved as an alternative method of compliance in accordance with paragraph (e) of this AD.

#### **Cost Impact**

There are approximately 1,174 airplanes of the affected design in the worldwide fleet. We estimate that 550 airplanes of U.S. registry would be affected by this proposed AD.

It would take approximately 1 work hour per airplane to accomplish the proposed placard installation, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the proposed installation on U.S. operators is estimated to be \$33,000, or \$60 per airplane.

It would take approximately 1 work hour per airplane to accomplish the proposed AFM revision, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the proposed revision on U.S. operators is estimated to be \$33,000, or \$60 per airplane.

It would take approximately 88 work hours per airplane to accomplish the proposed modification of the elevator and elevator tab assembly, at an average labor rate of \$60 per work hour. The

FAA has been advised by Boeing that the manufacturer will provide parts for the elevator/tab retrofit, including shipping, at no cost to operators. The manufacturer will have operators “exchange” their existing parts for new parts to support the retrofit program. Based on this information, the cost impact of the proposed modification on U.S. operators is estimated to be \$2,904,000, or \$5,280 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the proposed requirements of this AD action, and that no operator would accomplish those actions in the future if this proposed 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 proposed herein would 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 proposal would not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this proposed regulation (1) is not a “significant regulatory action” under Executive Order 12866; (2) is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) if promulgated, 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 copy of the draft regulatory evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption **ADDRESSES**.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Safety.

#### **The Proposed Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend 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:

**Boeing:** Docket 2002–NM–240–AD.

*Applicability:* Model 737–600, –700, –700C, –800, and –900 series airplanes; line numbers 1 through 1174 inclusive; 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 (e) 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 severe vibration of the elevator and elevator tab assembly, which could result in severe damage to the horizontal stabilizer, followed by possible loss of the elevator tab and consequent loss of controllability of the airplane, accomplish the following:

#### **Airplane Flight Manual (AFM) Revision/Placard Installation**

(a) For Model 737–600, –700, –700C, –800, and –900 series airplanes having line numbers 1 through 1043 inclusive: Within 90 days after the effective date of this AD, do the actions specified in paragraphs (a)(1) and (a)(2) of this AD.

(1) Install a speedbrake limitation placard on the P1–1 and P3–3 panel assemblies per Figure 1 or Figure 2, as applicable, of paragraph 3.B., “Work Instructions,” of the Accomplishment Instructions of Boeing Alert Service Bulletin 737–11A1109, dated March 28, 2002.

(2) Revise the Limitations Section of the FAA-approved AFM to include the following statement (this may be accomplished by inserting a copy of this AD in the AFM): “Do not extend the speedbrake lever beyond the flight detent in flight.”

#### **Modification**

(b) For Model 737–600, –700, –700C, and –800 series airplanes having line numbers 1 through 1174 inclusive: Before the accumulation of 18,000 total flight cycles, or within 2 years after the effective date of this AD, whichever occurs first, modify the elevator and elevator tab assemblies (including installation of a new clevis fitting

and a new tab mechanism on the horizontal stabilizer and, for certain airplanes, examination of the hinge plates on the stabilizer trailing edge to make sure the specified hinges are installed; changes to the seals in the balance bays; and installation of new elevators and tab assemblies, followed by adjustments and tests of the new installation), per the Accomplishment Instructions of Boeing Alert Service Bulletin 737-55A1080, dated September 19, 2002.

(c) Accomplishment of the modification required by paragraph (b) of this AD terminates the actions required by the ADs specified in the table below.

AD No.	Amendment No.
AD 99-15-09 .....	39-11229
AD 99-18-01 .....	39-11267
AD 2001-08-09 .....	39-12186
AD 2001-09-51 .....	39-12251
AD 2001-12-51 .....	39-12294
AD 2001-14-05 .....	39-12315
AD 2002-08-52 .....	39-12727
AD 2002-08-20 .....	39-12732

**Operator’s Equivalent Procedure**

(d) If the Accomplishment Instructions of Boeing Alert Service Bulletin 737-55A1080, dated September 19, 2002, specify that the actions may be accomplished in accordance with an operator’s “equivalent procedure:” The actions must be accomplished per the applicable chapter of the Boeing 737 Airplane Maintenance Manual specified in the alert service bulletin.

**Alternative Methods of Compliance**

(e) 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 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 Permit**

(f) 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.

Issued in Renton, Washington, on November 8, 2002.

**Ali Bahrami,**

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

[FR Doc. 02-29005 Filed 11-14-02; 8:45 am]

**BILLING CODE 4910-13-P**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

[Docket No. 2002-NE-12-AD]

RIN 2120-AA64

**Airworthiness Directives; Rolls-Royce plc Model RB211 Turbofan Engines**

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

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The Federal Aviation Administration (FAA) proposes to adopt a new airworthiness directive (AD) that is applicable to Rolls-Royce plc (RR) model RB211-535E4-B-37 and RB211-535E4-B-75 turbofan engines. This proposal would require removal from service of certain high pressure (HP) turbine discs before they reach newly established life limits. This proposal is prompted by the manufacturer’s inspections and analysis of HP turbine discs that have accumulated high cycles. The analysis reveals these discs to be sensitive to corrosion-induced cracking in the disc rim cooling hole area, which could result in uncontained HP disc failure. The actions specified by the proposed AD are intended to prevent corrosion-induced cracking of the HP turbine disc which could cause an uncontained HP turbine disc failure and damage to the airplane.

**DATES:** Comments must be received by January 14, 2002.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2002-NE-12-AD, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may be inspected at this location, by appointment, between 8 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays. Comments may also be sent via the Internet using the following address: “*9-ane-adcomment@faa.gov*”. Comments sent via the Internet must contain the docket number in the subject line.

Information regarding this action may be examined, by appointment, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

**FOR FURTHER INFORMATION CONTACT:** Keith Mead, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA

01803-5299, telephone (781) 238-7744; fax (781) 238-7199.

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this action may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this action must submit a self-addressed, stamped postcard on which the following statement is made: “Comments to Docket Number 2002-NE-12-AD.” The postcard will be date stamped and returned to the commenter.

**Availability of NPRM’s**

Any person may obtain a copy of this NPRM by submitting a request to the FAA, New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2002-NE-12-AD, 12 New England Executive Park, Burlington, MA 01803-5299.

**Discussion**

The manufacturer has inspected and analyzed some HP turbine discs that have accumulated high cycles that were installed in model RB211-535E4-B-37 and RB211-535E4-B-75 turbofan engines. The inspection and analysis reveals these discs to be sensitive to corrosion and crack propagation in the disc rim cooling hole area, which could result in uncontained HP turbine disc failure. The manufacturer has determined that the affected HP turbine discs are unable to achieve the previously published life limit of 20,000 cycles-since-new (CSN), due to the potential for corrosion-induced cracking