

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NM-251-AD; Amendment 39-12940; AD 2002-20-07 R1]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 737 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment revises an existing airworthiness directive (AD), applicable to all Boeing Model 737 series airplanes, that currently requires installation of a new rudder control system and changes to the adjacent systems to accommodate that new rudder control system. That amendment would have superseded seven existing ADs; however, this new amendment removes any reference to superseding four of those seven ADs. This new amendment is prompted by an FAA determination that the requirements of those four ADs must remain in effect until installation of the new rudder control system and corresponding changes to the adjacent systems. The actions specified in this AD are intended to prevent an uncommanded rudder hardover event and consequent loss of control of the airplane due to inherent failure modes, including single-jam modes, and certain latent failures or jams combined with a second failure or jam.

DATES: Effective November 12, 2002.

Comments for inclusion in the Rules Docket must be received on or before [insert date 60 days after date of publication in the **Federal Register**].

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2001-NM-251-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056.

Comments may be inspected at this location between 9:00 a.m. and 3:00 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-iarcomment@faa.gov. Comments sent via fax or the Internet must contain "Docket No. 2001-NM-251-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 information concerning this amendment may be obtained from or examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055-4056.

FOR FURTHER INFORMATION CONTACT: Kenneth W. Frey, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington; telephone (425) 227-2673; fax (425) 227-1181.

SUPPLEMENTARY INFORMATION: On September 27, 2002, the FAA issued AD 2002-20-07, amendment 39-12903 (67 FR 62341, October 7, 2002), applicable to all Boeing Model 737 series airplanes, to require installation of a new rudder control system and changes to the adjacent systems to accommodate that new rudder control system. That action was prompted by FAA determinations that the existing system design architecture is unsafe due to inherent failure modes, including single-jam modes and certain latent failures or jams, which, when combined with a second failure or jam, could cause an uncommanded rudder hardover event and consequent loss of control of the airplane. Additionally, the current rudder operational procedure is not effective throughout the entire flight envelope. The actions required by that AD are intended to prevent the identified unsafe condition.

Actions Since Issuance of Previous Rule

AD 2002-20-07 would have superseded seven existing ADs. However, since the issuance of that AD, the FAA finds that only three of those ADs should have been superseded. By superseding the other four ADs, we inadvertently eliminated the requirements of those four ADs as of the effective date of AD 2002-20-07, instead of upon accomplishment of the actions required by that AD. We find that retaining the requirements of those four ADs is necessary to maintain the current level of safety until the requirements of this new AD are accomplished. This finding does not impose any additional burden on any operator because the requirements of those four ADs already exist.

The requirements of the following four ADs remain in effect until installation of the new rudder control system and corresponding changes to the adjacent systems:

- AD 97-09-15 R1, amendment 39-10912 (63 FR 64857, November 24, 1998), applies to all Boeing Model 737-100, -200, -300, -400, and -500 series airplanes. That AD requires a one-time inspection of the engage solenoid valve of the yaw damper on the rudder power control unit (PCU) to determine the part number (P/N) of the valve, and replacement of certain valves with specified P/Ns if necessary. Retaining this requirement will ensure that the appropriate engage solenoid valve is installed on the rudder PCU of all affected airplanes until accomplishment of this new AD.

- AD 97-14-04, amendment 39-10061 (62 FR 35068, June 30, 1997), applies to all Boeing Model 737-100, -200, -300, -400, and -500 series airplanes. That AD requires tests of the main rudder PCU to detect excessive internal leakage of hydraulic fluid, stalling, or reversal, and to verify proper operation of the PCU; and replacement of the PCU with a unit having a different part number if necessary. That AD also requires replacement of the PCU and the vernier control rod bolts with newly designed units, leak tests of the PCU, and replacement of the PCU with a serviceable or newly designed unit

if necessary. Retaining these requirements will ensure that the appropriate vernier control rod bolts and main rudder PCU are installed and properly maintained until accomplishment of this new AD.

- AD 99-11-05, amendment 39-11175 (64 FR 27905, May 24, 1999). A correction of that AD was published in the **Federal Register** on December 13, 1999 (64 FR 69392). That AD applies to all Boeing Model 737 series airplanes, and requires repetitive displacement tests of the secondary slide in the dual concentric servo valve of the PCU for the rudder, and replacement of the valve assembly with a modified valve assembly if necessary. Retaining these requirements will ensure that the repetitive displacement tests will continue to be performed until accomplishment of this new AD.

The AD number and **Federal Register** citation for AD 99-11-05 appeared incorrectly in AD 2002-20-07. This information is specified correctly in the preceding paragraph.

- AD 2000-22-02, amendment 39-11948 (65 FR 64134, October 26, 2000). A correction of that AD was published in the **Federal Register** on November 16, 2000 (65 FR 69239), as AD 2000-22-02 R1, which applies to all Boeing Model 737 series airplanes. Those ADs require revising an FAA-approved Airplane Flight Manual (AFM) procedure to simplify the instructions for correcting a jammed or restricted flight control condition. Retaining this AFM change will ensure that the flightcrew continues to be advised of the procedures necessary to address a condition involving a jammed or restricted rudder until accomplishment of this new AD.

Explanation of Requirements of Rule

Since an unsafe condition has been identified that is likely to exist or develop on other airplanes of this same type design, this new AD revises AD 2002-20-07, which would have superseded seven existing ADs. This new AD continues to require installation of a new rudder control system and changes to the adjacent systems to

accommodate that new rudder control system. This new AD also removes any reference to superseding four of those seven existing ADs.

Paragraph (b) of this AD specifies that installation of a new rudder control system and changes to the adjacent systems to accommodate that new rudder control system terminates the requirements of ADs 97-09-15 R1, 97-14-04, 99-11-05, and 2000-22-02 R1.

Determination of Rule's Effective Date

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this 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 under the caption "ADDRESSES." All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

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 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 rule that might suggest a need to modify the 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 that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: “Comments to Docket Number 2001-NM-251-AD.” The postcard will be date stamped and returned to the commenter.

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.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a “significant regulatory action” under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, 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, 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 39-9199 (60 FR 18981, April 14, 1995); amendment 39-9954 (62 FR 9679, March 4, 1997); and amendment 39-10283 (63 FR 1903, January 13, 1998); and by adding a new airworthiness directive (AD), amendment 39-12940, to read as follows:

2002-20-07 R1 BOEING: Amendment 39-12940. Docket 2001-NM-251-AD. Revises AD 2002-20-07, Amendment 39-12903. Supersedes AD 95-06-53, Amendment 39-9199; AD 97-05-10, Amendment 39-9954; and AD 98-02-01, Amendment 39-10283.

Applicability: All Model 737 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 (c)(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 prevent an uncommanded rudder hardover event and consequent loss of control of the airplane due to inherent failure modes, including single-jam modes, and certain latent failures or jams combined with a second failure or jam; accomplish the following:

Installation

(a) Within 6 years after November 12, 2002 (the effective date of AD 2002-20-07, amendment 39-12903), do the actions required by paragraphs (a)(1) and (a)(2) of this AD, in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA.

(1) Install a new rudder control system that includes new components such as an aft torque tube, hydraulic actuators, and associated control rods, and additional wiring throughout the airplane to support failure annunciation of the rudder control system in the flight deck. The system also must incorporate two separate inputs, each with an override mechanism, to two separate servo valves on the main rudder power control unit (PCU); and an input to the standby PCU that also will include an override mechanism.

(2) Make applicable changes to the adjacent systems to accommodate the new rudder control system.

Terminating Action

(b) Accomplishment of the actions required by paragraph (a) of this AD constitutes terminating action for the requirements of AD 97-09-15 R1, amendment 39-10912; AD 97-14-04, amendment 39-10061; AD 99-11-05, amendment 39-11175; and AD 2000-22-02 R1, amendment 39-11948.

Alternative Methods of Compliance

(c)(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 ACO. 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.

(2) Alternative methods of compliance, approved previously in accordance with the ADs listed in the following table, are not considered to be approved as alternative methods of compliance with this AD:

Table – List of Superseded ADs

AD Number	Amendment Number
95-06-53	39-9199
97-05-10	39-9954
98-02-01	39-10283

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

(d) 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.

Effective Date

(e) This amendment becomes effective on November 12, 2002.

Issued in Renton, Washington, on October 30, 2002.

Vi L. Lipski,
Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

AD ECONOMIC EVALUATION

Docket Number: 2001-NM-251-AD
Airplane Make/Model/Series: 737
Number of airplanes (U.S. Operators): 2,000

The Airworthiness Directive (AD) requires: installation of a new rudder control system and changes to the adjacent systems to accommodate the new rudder control system on all Model 737 airplanes.

Costs:

Parts per aircraft	\$	140,000
Labor per aircraft (700 work hours x \$60/hour)	\$	42,000

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Cost per aircraft	\$	182,000
Fleet cost	\$	364,000,000

Executive Order 12866:

Could the AD be considered a "significant regulatory action?"

YES () explain NO (X)

DOT Regulatory Policies and Procedures:

Is the AD significant?

YES () explain NO (X)

Regulatory Flexibility Act:

Will the AD have a significant economic impact on a substantial number of small entities?

YES () explain NO (X)

Intrastate Aviation in Alaska:

It is possible that this AD could affect intrastate aviation in Alaska. Are regulatory distinctions appropriate to accommodate the extent to which Alaska is not served by transportation modes other than aviation?

YES () explain NO (X)

Project Engineer/Office Routing Symbol: Ken Frey/ANM-130S

