Proposed Rules

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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001–NM–251–AD]

RIN 2120–AA64

Airworthiness Directives; Boeing Model 737 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes the supersedure of two existing airworthiness directives (AD), applicable to certain Boeing Model 737 series airplanes, that currently include replacing the main rudder power control unit (PCU) and PCU vernier control rod bolts; testing the main rudder PCU to detect certain discrepancies and to verify proper operation of the PCU; and revising the FAA-approved Airplane Flight Manual procedures to correct a jammed or restricted flight control condition. Instead, this new proposal would require installation of a new rudder control system and changes to the adjacent systems to accommodate that new rudder control system. This proposal is 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 specified by the proposed AD are intended to prevent the identified unsafe condition.

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

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 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. 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.

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:

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 2001–NM–251–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. 2001–NM–251–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056.

Discussion

On June 23, 1997, the FAA issued AD 97–14–04, amendment 39–10061 (62 FR 35068, June 30, 1997), applicable to certain Boeing Model 737–100, –200, –300, –400, and ''500 series airplanes. That AD includes the following requirements:

- Replacement of the main rudder power control unit (PCU) with a newly designed unit.
- 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.
- Replacement of the vernier control rod bolts with newly designed bolts.

The actions of AD 97–14–04 were prompted by extensive laboratory testing indicating that a single jammed secondary slide in the main rudder PCU servo valve could result in an uncommanded rudder hardover event, opposite to the pilot-commanded input. That AD also was prompted by reports of fracturing of the vernier control rod bolts as a result of the shank of the bolt running into the threads on the nutplate during installation of the rod. The requirements of that AD are intended to prevent certain single jams in the dual concentric servo valve from causing uncommanded rudder hardovers, loss of hinge moment due to excessive internal leakage in the rudder control system, and fracturing of the vernier control rod bolts, all of which could reduce the controllability of the airplane.

On October 20, 2000, the FAA issued AD 2000–22–02, amendment 39–11948 (65 FR 64134, October 26, 2000), applicable to all Boeing Model 737 series airplanes. That AD supersedes AD 96–26–07, amendment 39–9871 (62 FR 15, January 2, 1997), to require revising the FAA-approved Airplane Flight Manual (AFM) procedure in AD 96–26–07 to simplify the instructions for correcting a jammed or restricted flight control condition. AD 2000–22–02 was prompted by an FAA determination that the procedure inserted in the AFM by AD 96–26–07 was not defined adequately. The actions specified in AD 2000–22–02 are intended to ensure that the flight crew is advised of the procedures necessary to address a condition involving a jammed or restricted rudder. To correct the format for certain AFM material described in AD 2000–22–02, on November 9, 2000, the FAA issued AD 2000–22–02 R1, amendment 39–11948 (65 FR 69239, November 16, 2000).

Actions Since Issuance of Previous Rules

Since the issuance of AD 97–14–04, the National Transportation Safety Board (NTSB) has identified the most probable cause of two major airplane accidents as a jammed secondary slide in the main rudder PCU servo valve in combination with overtravel of the primary slide. While that AD addressed what was considered to be the most likely cause of uncommanded rudder hardovers, the FAA recognized that other causes were still possible.

Subsequently, the FAA determined 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. These failure modes remain even following accomplishment of the actions required by AD 97–14–04.

In addition, the FAA has received information from the Independent 737 Flight Controls Engineering Test and Evaluation Board (ETEB) verifying the existence of the failure modes described above in the rudder system of all Model 737 series airplanes that can cause an uncommanded rudder hardover.

Because of the existing design architecture, the FAA issued the previously described AD 2000–22–02 R1 to include a special non-normal operational ''Uncommanded Rudder'' procedure, which provides necessary instructions to the flight crew for control of the airplane during an uncommanded rudder hardover event. The revised rudder procedure included in AD 2000–22–02 R1 is implemented to provide the flight crew with a means to recover control of the airplane following certain failures of the rudder control system. However, such a procedure, which is unique to the Model 737 series airplane, adds to the workload of the flight crew at a critical time when the flight crew is attempting to recover from an uncommanded rudder movement or other system malfunction. While that procedure effectively addresses certain rudder system failures, the FAA finds that such a procedure will not be effective in preventing an accident if the rudder control failure occurs during takeoff or landing.

For these reasons, the FAA has determined that the need for a unique operational procedure and the inherent failure modes in the existing rudder control system, when considered together, present an unsafe condition. In light of these reasons, the FAA proposes to eliminate the unsafe condition by mandating incorporation of a newly designed rudder control system. The manufacturer is currently redesigning the rudder system to eliminate these rudder failure modes. The redesigned rudder control system will incorporate design features that will increase system redundancy, and will add an active fault monitoring system to detect and annunciate to the flight crew single jams in the rudder control system. If a single failure or jam occurs in the linkage aft of the torque tube, the new rudder design will allow the flight crew to control the airplane, using normal piloting skills, without operational procedures that are unique to this airplane model.

FAA's Conclusions

The FAA has identified failure modes in the Model 737 rudder control system that could cause loss of control of the airplane if a single jam occurs, or if a single failure combined with a latent failure occurs. For these reasons, the FAA concludes that a full redesign of the rudder is warranted, based on the knowledge that single jams and single failures with latent failures in the flight control system can cause loss of control of the airplane.

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 supersede AD 97–14–04 and AD 2000–22–02 R1 to require installation of a new rudder control system and applicable changes to the adjacent systems to accommodate the new rudder control system on all Model 737 series airplanes. These actions would be required to be accomplished in accordance with a method approved by the FAA. Boeing indicates that a new rudder control system is currently being developed, which the FAA intends to evaluate for possible approval as an alternative method of compliance to this proposed AD.

The new design for the Model 737 rudder control system located at the aft end of the airplane will include the installation of new or modified components for the rudder control system. Such components will include 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 new design also will incorporate two separate inputs, each with an override mechanism, to two separate servo valves on the main rudder PCU. The input to the standby PCU also will include an override mechanism. In addition, changes to the adjacent systems will be necessary, such as changes to the flight deck indication and standby hydraulic system control.

Cost Impact

There are approximately 4,500 Model 737 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 2,000 airplanes of U.S. registry would be affected by this proposed AD.

The new installation action that is proposed in this AD would take approximately 700 hours per airplane to accomplish, at an average labor rate of $60 per work hour. Required parts would cost approximately $140,000 per airplane. Based on these figures, the cost impact of the currently required actions on U.S. operators is estimated to be $364,000,000 (over the proposed 5-year compliance time), or $182,000 per airplane.

The cost impact figure discussed above is based on assumptions that no operator has yet accomplished any of the proposed requirements of this AD action, and that no operator would accomplish the action in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations 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 removing amendment 39–10061 (62 FR 35068, June 30, 1997) and amendment 39–11948 (65 FR 69239, November 16, 2000), and by adding a new airworthiness directive (AD), to read as follows:

Boeing: Docket 2001–NM–251–AD. Supersedes AD 97–14–04, Amendment 39–10061; and AD 2000–22–02 R1, Amendment 39–11948.

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 (b)(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 failure or jams combined with a second failure or jam; accomplish the following:

Installation

(a) Within 5 years after the effective date of this AD, 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 will also include an override mechanism.

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

Alternative Methods of Compliance

(b)(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 AD 97–14–04, amendment 39–10061, are not considered to be 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

(c) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Issued in Renton, Washington, on November 6, 2001.

Vi L. Lipski,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 01–28334 Filed 11–9–01; 8:45 am]

BILLING CODE 4910–13–U

FEDERAL EMERGENCY MANAGEMENT AGENCY

44 CFR Part 67

[Docket No. FEMA–B–7420]

Proposed Flood Elevation Determinations

AGENCY: Federal Emergency Management Agency (FEMA).

ACTION: Proposed rule.

SUMMARY: Technical information or comments are requested on the proposed Base (1% annual chance) Flood Elevations (BFEs) and proposed BFE modifications for the communities listed below. The BFEs and modified BFEs are the basis for the floodplain management measures that the community is required either to adopt or to show evidence of being already in effect in order to qualify or remain qualified for participation in the National Flood Insurance Program (NFIP).

DATES: The comment period is ninety (90) days following the second publication of this proposed rule in a newspaper of local circulation in each community.

ADDRESSES: The proposed BFEs for each community are available for inspection at the office of the Chief Executive Officer of each community. The respective addresses are listed in the following table.

FOR FURTHER INFORMATION CONTACT: Matthew B. Miller, P.E., Chief, Hazards Study Branch, Federal Insurance and Mitigation Administration, FEMA, 500 C Street SW., Washington, DC 20472, (202) 646–3461, or (e-mail) matt.miller@fema.gov.

SUPPLEMENTARY INFORMATION: FEMA proposes to make determinations of BFE and modified BFEs for each community listed below, in accordance with section 110 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and 44 CFR 67.4(a).

These proposed BFEs and modified BFEs, together with the floodplain management criteria required by 44 CFR 60.3, are the minimum that are required. They should not be construed to mean that the community must change any