DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 97–NM–133–AD; Amendment 39–11536; AD 2000–02–18]

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 certain Boeing Model 737–100, –200, –300, –400, and –500 series airplanes; that currently requires an inspection of reworked aileron/elevator power control units (PCU's) and rudder PCU's to determine if reworked PCU manifold cylinder bores containing chrome plating are installed, and replacement of the cylinder bores with cylinder bores that have been reworked using the oversize method or the steel sleeve method, if necessary. This amendment, among other items, expands the applicability of the existing AD to include airplanes equipped with certain rudder PCU's. This amendment is prompted by a review of the design of the flight control systems on Model 737 series airplanes. The actions specified by this AD are intended to prevent a reduced rate of movement of the elevator, aileron, or rudder due to contamination of hydraulic fluid from chrome plating chips; such reduced rate of movement, if not corrected, could result in reduced controllability of the airplane.

DATES: Effective March 9, 2000.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of March 9, 2000.

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: Don Kurle, Senior Engineer, Systems and Equipment Branch, ANM–130S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055–4056; telephone (425) 227–2798; fax (425) 227–1181.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 97–09–14, amendment 39–10010 (62 FR 24008, May 2, 1997); which is applicable to certain Boeing Model 737–100, –200, –300, –400, and –500 series airplanes; was published as a supplemental notice of proposed rulemaking (NPRM) in the **Federal Register** on April 26, 1999 (64 FR 20226). The action proposed to continue to require an inspection of reworked aileron/elevator power control units (PCU) and rudder PCU's to determine if reworked PCU manifold cylinder bores containing chrome plating are installed, and replacement of the cylinder bores with bores that have been reworked using the oversize method or the steel sleeve method, if necessary. The action also proposed to require expanding the applicability of the existing AD to include airplanes equipped with certain rudder PCU's.

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 Supplemental NPRM

One commenter states that it supports the supplemental NPRM and will be able to meet the requirements as proposed.

Request To Revise Applicability Statement

One commenter recommends that the order of applicability should be reversed to ''serial number less than xxx, except those with 'ss','' to minimize confusion.

The FAA concurs with the intent of the commenter's request. The FAA concurs that the applicability statement in the supplemental NPRM may be confusing to operators. However, the FAA finds that it would be more clear to state only what serial numbers are *excluded* from the applicability of the AD, rather than stating certain serial numbers that are included as well as certain serial numbers that are excluded from the applicability of this AD. Therefore, the applicability statement of this final rule has been revised to state that this AD applies to ''Model 737–100, –200, –300, –400, and –500 series airplanes; * * * equipped with:

- A rudder power control unit (PCU), having part number (P/N) 65–44861–( ), P/N 65C37052–( ), or P/N 65C37053–( ), except those having a serial number of 1252A or greater or having a serial number that contains 'ss'; or
- An aileron or elevator PCU having P/N 65–44761–( ), except those having a serial number of 5360A or greater or having a serial number that contains 'ss.' ''

In addition, paragraphs (a) and (d) of this final rule have been revised similarly.

Request To Clarify Acceptable Methods of Inspection

Two commenters request that the wording of paragraph (a) of the supplemental NPRM be revised to clarify the FAA's intent. The commenters point out that paragraph (a) of the supplemental NPRM reads, ''Perform an inspection of reworked or overhauled aileron and elevator PCU's * * * in accordance with Boeing Service Letter 737–SL–27–30, dated April 1, 1985.'' The commenters state that Boeing Service Letter 737–SL–27–30 does not contain information on means of inspection of PCU cylinder bores that have been reworked or repaired using chrome plating. One of the commenters recommends that determination of whether cylinder bores have chrome plating should be based on either maintenance records or physical inspection of the PCU's. The other commenter recommends that, to prevent confusion, paragraph (a) be revised to read, ''Perform an inspection of reworked or overhauled PCU's to determine if reworked manifold bores containing chrome plating as described in Boeing Service Letter 737–SL–27–30 are installed * * *.'' The commenters state that these recommendations are also applicable to paragraph (d).

The FAA concurs with the commenters' request. Paragraph (a) has been revised to clarify acceptable methods to determine whether the PCU cylinder bores have chrome plating. Paragraph (a)(1) has been added to the final rule to allow inspection of maintenance records to determine whether the PCU has a chrome-plate-repaired cylinder bore.

Paragraphs (a)(1)(i), (a)(1)(ii), (a)(1)(iii), and (a)(1)(iv) identify criteria that demonstrate that a PCU does not have a chrome-plated cylinder bore.

Paragraph (a)(2) has been added to specify a physical inspection of the PCU to detect vibroengraved text ''737–SL–27–30'', as evidence of prior inspection to verify that the PCU does not contain a cylinder bore repaired with chrome plating.

Paragraph (a)(3) has been added to specify performance of the PCU

Non-Destructive Test (NDT) as identified in Boeing Service Letter 737–SL–27–120, dated January 28, 1998.

Compliance times for performance of the requirements of AD 97–09–14, which were contained in paragraphs (a)(1) and (a)(2) of the supplemental NPRM, are unchanged, but have been incorporated within paragraph (a) of the final rule.

Paragraph (d) of the final rule has been revised to be similar to the revised paragraph (a) and to refer to paragraphs (a)(1), (a)(2), and (a)(3) for inspection instructions.

Request for Explicit Approval of NDT Inspection

One commenter requests that the NDT inspection noted in Boeing Service Letter 737–SL–27–120 be expressly approved as meeting the requirements of paragraphs (a) and (d) of the proposed AD. The commenter states that it believes that this is preferable to the wording of the supplemental NPRM, which states that alternative methods of compliance, approved previously in accordance with AD 97–09–14 are approved as alternative methods of compliance for this AD.

The FAA concurs with the intent of the commenter's request. As stated previously, paragraph (a)(3) has been added to list the NDT inspection method noted in Boeing Service Letter 737–SL–27–120 as an approved method to determine the presence of chrome plating. No additional change to the rule is necessary in this regard.

Request To Revise Means of Compliance

One commenter requests that paragraph (b) of the proposed rule be revised to allow replacement of the PCU in accordance with the operator's FAA-approved maintenance procedures for removal and installation of the affected aileron and elevator PCU's and rudder PCU's. The commenter states that reference to the Boeing Airplane Maintenance Manual as the means for removal and replacement of an affected PCU may result in difficulties for operators, because their approved means of airplane maintenance may not be the Boeing 737 Airplane Maintenance Manual. (An individual operator has the option to develop its own FAA-approved maintenance program.)

The FAA concurs with the commenter's request. Paragraphs (b) and (e) of this AD have been revised to add an option to perform the replacement of the PCU in accordance with procedures in the operator's FAA-approved maintenance program that are equivalent to the Boeing AMM procedures.

Request To Replace PCU Instead of Cylinder Bore

One commenter requests that paragraph (b)(1) be revised to require replacement of the PCU with a PCU that does not have a chrome-plate-repaired cylinder bore, instead of requiring replacement of the cylinder bore. The commenter cites no rationale for its request. Additionally, the commenter requests that the requirement be revised to allow use of any PCU that has been confirmed to not contain a chrome-plated cylinder bore. The commenter states that the request to revise paragraph (b)(1) is also applicable to paragraph (e)(1) of the AD.

The FAA concurs with the commenter's request. The FAA finds that it is not possible to remove the cylinder bore without removing the PCU from the airplane. Paragraphs (b)(1) and (e)(1) have been revised to require replacement of any PCU with a chrome-plate-repaired cylinder bore with a PCU that does not have a chrome-plate-repaired cylinder bore, instead of replacement of the chrome-plate-repaired cylinder bores.

Request To Correct Typographical Error

One commenter requests that the reference to ''a PCU having serial number of 5306A or higher'' in paragraph (b)(2) of the supplemental NPRM be revised to reflect the correct serial number, which is 5360A or higher. The FAA concurs, and has corrected paragraph (b)(2) to refer to serial number 5360A or higher.

Request To Revise Spares Paragraphs

One commenter requests that paragraphs (c) and (f) of the supplemental NPRM be revised to refer to units that are defined as acceptable for installation per paragraphs (b) and (e), respectively, of the AD. The commenter states that Boeing Service Letter 737–SL–27–30 does not define inspection criteria, and the definition of acceptable units is not complete in the supplemental NPRM.

The FAA concurs with the commenter's request. Paragraphs (c) and (f) have been revised to refer to units eligible as replacement PCU's per paragraphs (b) and (e), respectively.

Request To Allow PCU Disassembly and Inspection of Cylinder Bore

One commenter requests that the proposed AD be revised to allow an option to perform PCU disassembly and inspection of the cylinder bore for chrome plating as an alternative to the NDT of the PCU, which, as stated previously, is specified in paragraph (a)(3) of the final rule.

The FAA does not concur with the commenter's request. The manufacturer has not provided the FAA with any specific requirements or instructions to perform such an inspection. Therefore, the FAA cannot include such an option in the AD. However, operators that wish to perform PCU disassembly and inspection of the cylinder bore for chrome plating as an alternative to the NDT of the PCU specified in paragraph (a)(3) of this AD, may request approval of a method of and criteria for such disassembly and inspection as an alternative method of compliance, in accordance with paragraph (g)(1) of the AD.

Explanation of Additional Change From the Supplemental NPRM

Paragraphs (b) and (e) of the supplemental NPRM state that the actions specified in those paragraphs are to be accomplished in accordance with certain chapters of the Boeing Airplane Maintenance Manuals. The FAA finds that specific revisions of the airplane maintenance manuals are not required for accomplishment of the actions specified in those paragraphs. Therefore, paragraphs (b) and (e) of this AD have been revised to call for use of certain chapters of the Boeing Airplane Maintenance Manuals as guidance for procedures to replace the PCU's.

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 previously described. 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 2,675 Model 737 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 1,091 airplanes of U.S. registry will be affected by this AD.

The actions that are currently required by AD 97–09–14 take approximately 5 work hours per airplane to accomplish, at an average labor rate of $60 per work hour. Based on these figures, the cost impact of the currently required actions on U.S. operators is estimated to be $327,300, or $300 per airplane.

The new actions that are required by this new AD will take approximately 5

work hours per airplane to accomplish, at an average labor rate of $60 per work hour. Based on these figures, the cost impact of the new requirements of this AD on U.S. operators is estimated to be $327,300, or $300 per airplane.

The cost impact figures discussed above are 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 39–10010 (62 FR 24008, May 2, 1997), and by adding a new airworthiness directive (AD), amendment 39–11536, to read as follows:

2000–02–18 Boeing: Amendment 39–11536. Docket 97–NM–133–AD. Supersedes AD 97–09–14, Amendment 39–10010.

Applicability: Model 737–100, –200, –300, –400, and –500 series airplanes; certificated in any category; equipped with:

• A rudder power control unit (PCU), having part number (P/N) 65–44861–(D), P/N 65C37052–( ), or P/N 65C37053–( ), except those having a serial number of 1252A or greater or having a serial number that contains ''ss''; or

•An aileron or elevator PCU having P/N 65–44761–( ), except those having a serial number of 5360A or greater or having a serial number that contains ''ss.''

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 (g)(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 a reduced rate of movement of the elevator, aileron, or rudder, which, if not corrected, could result in reduced controllability of the airplane, accomplish the following:

Partial Restatement of Requirements of AD 97–09–14

(a) Within 5 years or 15,000 flight hours after June 6, 1997 (the effective date of AD 97–09–14, amendment 39–10010), or at the next time the PCU is sent to a repair facility, whichever occurs first: Perform an inspection of aileron and elevator PCU's having P/N 65–44761–( ), except those having a serial number of 5360A or greater or having a serial number that contains ''ss''; and rudder PCU's having P/N 65–44861–( ), except those having a serial number of 1252A or greater or having a serial number that contains ''ss''; to determine whether a PCU manifold has a reworked or repaired cylinder bore(s) containing chrome plating. Accomplish this inspection as specified in paragraph (a)(1), (a)(2), or (a)(3) of this AD.

(1) Inspect the airplane maintenance records to determine whether a PCU with a chrome-plate-repaired cylinder bore is installed. If inspection of the maintenance records shows that the PCU meets one of the criteria specified in paragraph (a)(1)(i), (a)(1)(ii), (a)(1)(iii), or (a)(1)(iv) of this AD, no further action is required by this AD for that PCU.

(i) The PCU has never been reworked or repaired.

Note 2: Chrome plating of the cylinder bores was limited to repair and was not used for new manufacture of PCU's or replacement manifolds.

(ii) The PCU has been reworked or repaired, but chrome plating was not used as the means of PCU cylinder bore repair.

(iii) The PCU has been reworked or repaired, but a manifold manufactured after December 31, 1985, was used to replace the cylinder bore.

Note 3: No PCU manifold manufactured after December 31, 1985, was reworked or repaired using chrome plating.

(iv) The PCU has been reworked or repaired using chrome plating of the cylinder bore, but the cylinder bore has subsequently been reworked to remove the chrome plating using the cylinder bore oversize method or steel sleeve method specified in Boeing Service Letter 737–SL–27–30, ''Aileron/Elevator and Rudder Power Control Unit Cylinder Bore Rework,'' dated April 1, 1985.

(2) Inspect the PCU to determine whether the PCU is marked with vibroengraved text ''737–SL–27–30'' as evidence of prior inspection, as specified in Boeing Service Letter 737–SL–27–120,'' Aileron, Elevator, and Rudder Power Control Unit Cylinder Bore Material Identification Method,'' dated January 28, 1998.

(3) Perform the PCU Non-Destructive Test (NDT) in accordance with Boeing Service Letter 737–SL–27–120, dated January 28, 1998, to determine whether chrome plating exists on the cylinder bore surface.

Replacement Required by AD 97–09–14

(b) If any reworked PCU manifold cylinder bores containing chrome plating are found to be installed during the inspection required by paragraph (a) of this AD: Prior to further flight, accomplish the actions specified in paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this AD, using as guidance the following procedures of the Boeing 737 Airplane Maintenance Manual, as applicable: Chapter 27–11–71 (for Model 737–100, –200, –300, –400, and –500 series airplanes), Chapter 27–31–101 (for Model 737–100 and –200 series airplanes), or Chapter 27–31–14 (for Model 737–300, –400, and –500 series

airplanes), or equivalent procedures in the operator's FAA-approved maintenance program.

(1) Replace the PCU with a PCU with cylinder bores that were manufactured after December 31, 1985, or with a PCU with cylinder bores that have been reworked using the oversize method or the steel sleeve method specified in Boeing Service Letter 737–SL–27–30, dated April 1, 1985.

(2) Replace the aileron or elevator PCU with a PCU containing the letters ''ss'' in its serial number or with a PCU having a serial number of 5360A or higher.

(3) Replace the rudder PCU with a PCU containing the letters ''ss'' in its serial number or with a PCU having a serial number of 1252A or higher.

(4) Replace the PCU with a PCU for which paragraph (a) of this AD specifies that no further action is required.

Spares

(c) As of June 6, 1997, no person shall install a manifold cylinder bore containing chrome plating, or an aileron or elevator PCU having P/N 65–44761–( ) that has a manifold cylinder bore containing chrome plating, or a rudder PCU having P/N 65–44861–( ) that has a manifold cylinder bore containing chrome plating, on any airplane, unless the PCU is eligible as a replacement PCU, as specified in paragraph (b) of this AD.

New Requirements of This AD

Inspection

(d) Within 5 years or 15,000 flight hours after the effective date of this AD, or at the next time the PCU is sent to a repair facility, whichever occurs first: Perform an inspection of any rudder PCU having P/N 65C37052–( ) or P/N 65C37053–( ), except those having a serial number of 1252A or greater or having a serial number that contains ''ss,'' to determine if the PCU manifold has a reworked or overhauled cylinder bore(s) containing chrome plating. Perform the inspection in accordance with paragraph (a)(1), (a)(2), or (a)(3) of this AD.

Replacement

(e) If any reworked or overhauled PCU manifold cylinder bores containing chrome plating are found to be installed during the inspection required by paragraph (d) of this AD: Prior to further flight, accomplish the actions specified in paragraph (e)(1), (e)(2), or (e)(3) of this AD, using, as guidance, procedures specified in Chapter 27–21–91 Boeing 737 Airplane Maintenance Manual (for Model 737–100, –200, –300, –400, and –500 series airplanes), or equivalent procedures in the operator's FAA-approved maintenance program.

(1) Replace the PCU with a PCU with cylinder bores that were manufactured after December 31, 1985, or with a PCU with cylinder bores that have been reworked using the oversize method or the steel sleeve method specified in Boeing Service Letter 737–SL–27–30, dated April 1, 1985.

(2) Replace the rudder PCU with a PCU containing the letters ''ss'' in its serial number or with a PCU having a serial number of 1252A or higher.

(3) Replace the rudder PCU with a rudder PCU for which paragraph (a) of this AD specifies that no further action is required.

Spares

(f) As of the effective date of this AD, no person shall install a rudder PCU having P/N 65C37052–( ) or P/N 65C37053–( ) that has a manifold cylinder bore containing chrome plating, on any airplane, unless the PCU is eligible as a replacement PCU per paragraph (e) of this AD.

Alternative Methods of Compliance

(g)(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 (ACO), 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.

(2) Alternative methods of compliance, approved previously for AD 97–09–14, amendment 39–10010, are approved as alternative methods of compliance with this AD.

Note 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Manager, Seattle ACO.

Special Flight Permits

(h) 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

(i) The PCU NDT shall be done in accordance with Boeing Service Letter 737–SL–27–120, dated January 28, 1998. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. 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.

(j) This amendment becomes effective on March 9, 2000.

Issued in Renton, Washington, on January 24, 2000.

Donald L. Riggin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 00–2085 Filed 2–2–00; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 98–NM–381–AD; Amendment 39–11541; AD 2000–02–23]

RIN 2120–AA64

Airworthiness Directives; McDonnell Douglas Model DC–9, DC–9–80, and C–9 (Military) Series Airplanes, and Model MD–88 Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain McDonnell Douglas Model DC–9, DC–9–80, and C–9 (military) series airplanes, and Model MD–88 airplanes, that requires a one-time inspection to determine the type of engine ignition switch installed in the hinged forward overhead switch panel, and replacement of certain rotary ignition switches with new design rotary ignition switches. This amendment is prompted by reports of smoke in the flight compartment during engine ignition selection. The actions specified by this AD are intended to prevent an internal electrical short in the engine ignition switch, which could result in smoke in the flight compartment.

DATES: Effective March 9, 2000.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of March 9, 2000.

ADDRESSES: The service information referenced in this AD may be obtained