

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

[Docket No. 98–NN–57–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 adopting of a new airworthiness directive (AD) that is applicable to certain Boeing Model 737 series airplanes. This proposal would require a one-time inspection of the main landing gear (MLG) axle flange to detect cracking, and follow-on corrective actions. For certain airplanes, this proposal also would require replacement of the original brake mounting gasket with a more durable aluminum-nickel-bronze gasket, and installation of new shear studs, if necessary. For certain airplanes, the proposal would require modification of the mounting flange holes of the torque tube. This proposal is prompted by reports of cracking in the axle flange and by reports of deterioration of the brake mounting gasket. The actions specified by the proposed AD are intended to prevent fracture of the MLG axle and separation of the wheel from the MLG, and consequent reduced controllability of the airplane.

DATES: Comments must be received by December 14, 1998.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM–114, Attention: Rule Docket No. 98–NM–57–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.

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: Rick Kawaguchi, Aerospace Engineer, Airframe Branch, ANM–120S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind

Avenue, SW., Renton, Washington 98055–4056; telephone (425) 227–1153; 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 notice 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 notice must submit a self-addressed, stamped postcard on which the following statement is made: “Comments to Docket Number 98–NM–57–AD.” The postcard will 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. 98–NM–57–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056.

Discussion

The FAA has received reports indicating that, since the introduction of the Boeing Model 737 series airplane into service, numerous airplanes have lost a main landing gear (MLG) wheel due to fracturing of the axle. Although the total number of such wheel losses is small, the rate at which fractures occur has increased in the last several years. The axle fractures (and resultant wheel losses) are attributed to a variety of conditions, including the deterioration of the original fiberglass brake mounting gasket and fretting damage of the stud holes in the adjacent axle flange. (The gasket is installed between the brake assembly and the MLG axle flange; the

flange itself is an integral part of the MLG axle.)

Investigation has revealed that the deterioration of the original fiberglass brake mounting gasket is caused by heat and vibration generated by the MLG brake assemblies. Such deterioration of the gasket leads to a loss of clamp-up forces between the brake assembly and the MLG axle flange. This in turn leads to loosening of the brake assembly and fretting damage of the axle flange. It is typical for such fretting damage of the axle flange to lead to the initiation of a crack in a stud hole of the axle flange; such cracking eventually grows and spirals outward from the flange until a complete fracture of the MLG axle occurs. Deterioration of the brake mounting gasket, if not corrected, could lead to fracture of the MLG axle and separation of the wheel from the MLG, and consequent reduced controllability of the airplane.

Explanation of Relevant Service Information

The FAA has reviewed and approved Boeing Service Bulletin 737–32–1253, dated November 7, 1991, which describes procedures for the replacement of the original brake mounting gasket with a more durable aluminum-nickel-bronze gasket. The service bulletin also specifies a configuration in the new gasket installation. Specifically, the service bulletin instructs operators to use a 10-bolt, 2-stud mounting configuration for attaching the new gasket to the adjacent MLG axle flange. This new mounting configuration allows the clamp-up forces between the brake assembly and the MLG axle flange to be maintained at levels enough to prevent future fretting of the axle flange.

In addition, AlliedSignals has issued Service Bulletin 2601042–32–003, dated March 15, 1997, which describes procedures for modification of the mounting flange holes of the torque tube. The modification includes increasing the counterbore depth of the mounting flange holes of the torque tube, and installing a chamfer to properly interface with the attachment studs on the MLG axle flange. This service bulletin was issued when it became evident that incorporation of Boeing Service Bulletin 737–32–1253 could cause an interference problem on certain AlliedSignal brake assemblies.

In addition, Boeing has issued All Operators Telex (AOT) M–7272–96–1442, dated March 29, 1996, which provides background information on the fractures of the MLG axle that have occurred in the fleet. The section of this AOT titled “Recommended Operator

Action" specifies that certain actions be accomplished in conjunction with the modification specified in Boeing Service Bulletin 737-32-1253. Specifically, the "Recommends Operator Action" section lists the corrective actions to be taken if corrosion or fretting damage is found on the axle flange. The corrective actions include removing any corrosion found on the axle flange, blending out any fretting or cracking damage, and performing either a magnetic inspection or a high frequency eddy current inspection to ensure that the repaired part is free of cracks.

Accomplishment of the actions specified in the service bulletins and AOT 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 a one-time inspection of the MLG axle flange to detect cracking, and follow-on corrective actions. For certain airplanes, this proposal also would require replacement of the original brake mounting gasket with a more durable aluminum-nickel-bronze gasket. For airplanes equipped with the new gaskets, but not with the new shear studs, the proposal would require installing new shear studs concurrently with the other actions proposed by this AD. For certain airplanes, the proposal also would require modification of the mounting flange holes of the torque tube. The actions would be required to be accomplished in accordance with the Boeing and AlliedSignal service bulletins, and the Boeing AOT described previously, except as discussed below.

Differences Between the Proposed Rule and the Service Information

Operators should note that although the AOT recommends that operators accomplish a magnetic particle or high frequency eddy current inspection for cracking only after the MLG axle flange has been repaired (following the discovery of corrosion or fretting), this proposed AD would require the accomplishment of one of these inspections even if the axle flange shows no signs of corrosion or fretting.

Additionally, the AOT specifies that operators are to contact the manufacturer for certain follow-on repair instructions. However, this proposed AD would require that such repair be accomplished in accordance with a method approved by the FAA.

Cost Impact

There are approximately 2,015 airplanes of the affected design in the worldwide fleet. The FAA estimates that 893 airplanes of U.S. registry would be affected by this proposed AD.

The FAA estimates that it would take approximately 4 work hours per airplane to accomplish the proposed inspection, and that the average labor rate is \$60 per work hour. Based on these figures, the cost impact of the proposed inspection on U.S. operators is estimated to be \$214,320 or \$240 per airplane.

It would take approximately 32 work hours per airplane at an average labor rate of \$60 per work hour should an operator be required to accomplish the proposed brake modification. Required parts would cost approximately \$2,052 per airplane. Based on these figures, the cost of the proposed brake modification on U.S. operators is estimated to be \$2,972 per airplane.

Additionally, the FAA estimates that it would take approximately 5 work hours per airplane to accomplish the proposed torque tube modification and that the average labor rate is \$60 per work hour. The FAA estimates that this action would be required to be accomplished on approximately 400 U.S.-registered airplanes. Based on these figures, the cost impact of this proposed modification on U.S. operators is estimated to be \$120,000, or \$300 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 AD were not adopted.

Regulatory Impact

The regulations proposed herein would not have 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, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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 98-NM-57-AD.

Applicability: Model 737-100, -200, -300, -400, and -500 series airplanes; line positions 1 through 2135 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 (d) 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 fracture of the main landing gear (MLG) axle and the separation of the wheel from the MLG, and consequent reduced controllability of the airplane, accomplish the following:

(a) For Model 737-100 and -200 series airplanes equipped with AlliedSignal (ALS/Bendix) brake assembly installations having Boeing part numbers (P/N) 10-61063-14, -18, or -21, on which the original gaskets have been replaced with aluminum-nickel-bronze gaskets in accordance with Boeing Service Bulletin 737-32-1253, dated November 7, 1991: Within 200 days or 1,500 flight cycles after the effective date of this

AD, whichever occurs later, accomplish the requirements of paragraphs (a)(1), (a)(2), (a)(3), and (a)(4) of this AD.

(1) Perform either a one-time magnetic particle inspection or a one-time high frequency eddy current inspection of the MLG axle flange to detect cracking, except that a high frequency eddy current inspection may only be accomplished if the axle flange has not been repaired previously and coated with a nickel sulfamate finish. The magnetic particle inspection or high frequency eddy current inspection is to be accomplished in accordance with procedures specified in paragraph B. of the "Recommended Operator Action" section of Boeing All Operators Telex (AOT) M-7272-76-1442, dated March 29, 1996. If any cracking is detected, prior to further flight, repair the MLG axle flange in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate.

(2) If any corrosion or fretting is found during accomplishment of the inspection required by paragraph (a)(1) of this AD: Prior to further flight, accomplish the repair procedures specified in the "Recommended Operator Action" section of Boeing AOT M-7272-96-1442, dated March 29, 1996.

(3) Accomplish the modification of the torque tube mounting holes on the mounting flange, in accordance with AlliedSignal Service Bulletin 2601042-32-003, dated March 15, 1997.

(4) If shear studs were replaced at the time the new aluminum-nickel-bronze gaskets were installed: Replace the shear studs in accordance with Boeing Service Bulletin 737-32-1253, dated November 7, 1991.

(b) For Model 737-100 and -200 series airplanes equipped with AlliedSignal (ALS/Bendix) brake assembly installations having Boeing P/N 10-61063-14, -18, or -21, on which the original gaskets have not been replaced with new aluminum-nickel-bronze gaskets in accordance with Boeing Service Bulletin 737-32-1253, dated November 6, 1991: Within 200 days or 1,500 flight cycles after the effective date of this AD, whichever occurs later, accomplish the requirements of paragraphs (b)(1), (b)(2), (b)(3), and (b)(4) of this AD.

(1) Perform either a one-time magnetic particle inspection or a one-time high frequency eddy current inspection of the MLG axle flange to detect cracking. The magnetic particle inspection or high frequency eddy current inspection is to be accomplished in accordance with procedures specified in paragraph B. of the "Recommended Operator Action" section of Boeing AOT M-7272-96-1442, dated March 29, 1996. If any cracking is detected, prior to further flight, repair the MLG axle flange in accordance with a method approved by the Manager, Seattle ACO.

(2) If any corrosion or fretting is found during accomplishment of the inspection required by paragraph (b)(1) of this AD: Prior to further flight, accomplish the repair procedures specified in the "Recommended Operator Action" section of Boeing AOT M-7272-96-1442, dated March 29, 1996.

(3) Accomplish the modification of the torque tube mounting holes of the mounting flange, in accordance with AlliedSignal

Service Bulletin 2601042-32-003, dated March 15, 1997.

(4) Accomplish the modification of the affected brake assemblies in accordance with Boeing Service Bulletin 737-32-1253, dated November 7, 1991.

(c) For Model 737-100, -200, -300, -400, and -500 series airplanes other than those identified in paragraphs (a) and (b) of this AD: Within 200 days or 1,500 flight cycles after the effective date of this AD, whichever occurs later, accomplish the requirements of paragraphs (c)(1), (c)(2), and (c)(3) of this AD.

(1) Perform either a one-time magnetic particle inspection or a one-time high frequency eddy current inspection of the MLG axle flange to detect cracking. The magnetic particle inspection or high frequency eddy current inspection is to be accomplished in accordance with procedures specified in paragraph B. of the "Recommended Operator Action" section of Boeing AOT M-7272-96-1442, dated March 29, 1996. If any cracking is detected, prior to further flight, repair the MLG axle flange in accordance with a method approved by the Manager, Seattle ACO.

(2) If any corrosion or fretting is found during accomplishment of the inspection required by paragraph (c)(1) of this AD: Prior to further flight, accomplish the repair procedures specified in the "Recommended Operator Action" section of Boeing AOT M-7272-96-1442, dated March 29, 1996.

(3) Accomplish the modification of the affected brake assemblies in accordance with Boeing Service Bulletin 737-32-1253, dated November 7, 1991.

(d) 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.

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

(e) 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 October 21, 1998.

S.R. Miller,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 98-28969 Filed 10-28-98; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 97-CE-07-AD]

RIN 2120-AA64

Airworthiness Directives; AlliedSignal Avionics, Inc. Models GNS-X_{LS} and GNS-X_L Flight Management Systems

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes to revise Airworthiness Directive (AD) 97-05-03, which currently requires inserting a limitation into the Operations Limitation Section of the Airplane Flight Manual (AFM) or Flight Manual Supplement for all owners/operators of aircraft equipped with AlliedSignal Avionics Inc. (AlliedSignal) Models GNS-X_{LS} or GNS-X_L global positioning systems (GPS) flight management system. The limitation specifies prohibiting the use of these AlliedSignal GPS units on previously published non-precision approaches. Since issuance of AD 97-05-03, AlliedSignal has issued service information that specifies procedures for accomplishing hardware and software modifications to the affected flight management systems. The Federal Aviation Administration (FAA) has determined that accomplishment of the actions of the service bulletins should be considered as an alternative method of compliance to the actions of AD 97-05-03. The proposed AD would retain the actions of AD 97-05-03, and would incorporate the service bulletins into the proposed AD, as an alternative method of compliance to the existing AD. The actions specified by the proposed AD are intended to continue to prevent deviation from an intended flight path during a non-precision approach to an airport caused by inaccurate information from the GPS flight management system.

DATES: Comments must be received on or before December 22, 1998.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 97-CE-07-AD, Room 1558, 601 E. 12th Street, Kansas City, Missouri 64106. Comments may be inspected at this location between 8 a.m. and 4 p.m., Monday through Friday, holidays excepted.