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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2003-NM-202-AD; Amendment 39-13648; AD 2004-11-03]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747-400 and -400F Series Airplanes Equipped With Rolls Royce Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 747-400 and -400F series airplanes. This action requires repetitive inspections for damage or arcing of the power feeder cables and conduit of the integrated drive generator (IDG) in the forward section of all four struts, and repair if necessary. This action also requires repetitive inspections for chafing damage or arcing of the adjacent hydraulic lines in the aft section of the outboard struts. Additionally, this action requires eventual terminating actions for the repetitive inspections. This action is necessary to prevent damage and arcing to the conduit and power feeder cables of the IDG, which could result in a fire in the engine strut; and to prevent damage to the adjacent hydraulic lines in the aft section of the outboard struts, which could result in reduced controllability of the airplane. This action is intended to address the identified unsafe condition.

DATES: Effective June 17, 2004.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 17, 2004.

Comments for inclusion in the Rules Docket must be received on or before August 2, 2004.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2003-NM-202-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-iarcomment@faa.gov. Comments sent via fax or the Internet must contain "Docket No. 2003-NM-202-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 or 2000 or ASCII text.

The service information referenced in this AD may be obtained from Boeing Commercial Airplanes, 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; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*.

FOR FURTHER INFORMATION CONTACT: Sulmo Mariano, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6501; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION: The FAA has received a report of power feeder cables of the integrated drive generator (IDG) chafing against an adjacent hydraulic case drain line in the number 4 strut of certain Boeing Model 747-400 and -400F series airplanes. The chafing caused arcing from the power feeder cable that resulted in a leak in the hydraulic line. Investigation revealed that excessive slack in the power feeder cables could potentially cause a chafing condition with the hydraulic case drain line or the hydraulic pressure line. We also received reports indicating a chafed power feeder cable located inside the conduit of the forward section of the engine strut, damage to the cables and protective sleeve inside the conduit, and damage to the cable insulation. We received a report of an additional indication of a chafed power feeder cable inside the conduit, in which the resulting arcing between the cable and conduit appeared to have caused molten metal to drip onto the adjacent fuel tube and to burn a small hole in the tube. The engine struts have no provision for detection or containment of a fire. Such damage and arcing to the conduit and power feeder cables of the IDG, could result in an uncontrolled fire in the engine strut; and cause damage to the adjacent hydraulic lines in the aft section of the outboard struts, and consequent reduced controllability of the airplane. This action is intended to address the identified unsafe condition.

Explanation of Relevant Service Information

We have reviewed and approved the following Boeing Service Bulletins (SBs) and Alert Service Bulletins (ASBs):

- SB 747-24A2240, Revision 1, dated February 20, 2003, which describes procedures for general visual inspections of the power feeder cables and conduit of the integrated drive generator (IDG) for damage or arcing and repair if necessary, on all four engine struts.
- ASB 747-24A2247, dated July 10, 2003, which describes procedures for general visual inspections of the power feeder cables of the IDG and hydraulic lines on each outboard strut aft of the block clamp for chafing and arcing damage, and repair if necessary.
- SB 747-24A2242, Revision 1, dated August 14, 2003, which describes procedures for removing the conduit, installing a new shield/bracket assembly, and replacing two hydraulic lines in each engine strut. Those actions will prevent chafing inside the conduit and prevent chafing of the power feeder cables with the hydraulic lines. Accomplishment of those actions eliminates the need to continue the repetitive inspections described in SB 747-24A2240.
- ASB 747-24A2243, dated October 31, 2002, which describes procedures for replacing the wiring and tubing support bracket with a new bracket. Such replacement provides improved separation between the power feeder cables of the IDG and the hydraulic case drain line in the outboard struts, and eliminates the need to continue the repetitive inspections described in ASB 747-24A2247.

Accomplishment of the actions specified in the SBs and ASBs is intended to adequately address the identified unsafe condition.

Explanation of Requirements of the Rule

Since an unsafe condition has been identified that is likely to exist or develop on other airplanes of the same type design that may be registered in the United States at some time in the future, this AD is being issued to prevent damage and arcing to the conduit and power feeder cables of the IDG, which could result in a fire in the engine strut; and to prevent damage to the adjacent hydraulic lines in the aft section of the outboard struts, which could result in reduced controllability of the airplane. This AD requires accomplishment of the actions specified in the service bulletins described previously.

Cost Impact

None of the airplanes affected by this action are on the U.S. Register. All airplanes included in the applicability of this rule currently are operated by non-U.S. operators under foreign registry; therefore, they are not directly affected by this AD action. However, the FAA considers that this rule is necessary to ensure that the unsafe condition is addressed in the event that any of these subject airplanes are imported and placed on the U.S. Register in the future.

Should an affected airplane be imported and placed on the U.S. Register in the future, it would require approximately 14 work hours per airplane to accomplish the required inspections, at an average labor rate of $65 per work hour. The estimated cost for the required inspections is estimated to cost $910, per airplane, per inspection cycle.

It would also require between 52 and 56 work hours, per airplane, to accomplish the terminating actions required by this AD, at an average labor rate of $65 per work hour. Required parts to accomplish the terminating actions are estimated to cost approximately $14,188. Based on these figures, the cost impact of this AD would be between $24,588 and $25,628, per airplane, to accomplish the terminating actions.

Determination of Rule's Effective Date

Since this AD action does not affect any airplane that is currently on the U.S. Register, it has no adverse economic impact and imposes no additional burden on any person. Therefore, prior notice and public procedures hereon are unnecessary and the amendment may be made effective in less than 30 days after publication in the Federal Register.

Comments Invited

Although this action is in the form of a final rule and was not preceded by notice and 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 2003-NM-202-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.

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 adding the following new airworthiness directive:

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2004-11-03 Boeing: Amendment 39-13648. Docket 2003-NM-202-AD.

Applicability: Model 747-400 and -400F series airplanes having line numbers 696 through 1310 inclusive and equipped with Rolls Royce engines; certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To prevent damage and arcing to the conduit and power feeder cables of the integrated drive generator (IDG), which could result in a fire in the engine strut; and to prevent damage to the adjacent hydraulic lines in the aft section of the outboard struts, which could result in reduced controllability of the airplane; accomplish the following:

Inspection for Damage or Arcing

(a) Within 90 days after the effective date of this AD, perform a general visual inspection for damage or arcing of the power feeder cables of the integrated drive generator (IDG) and the cable conduit, per the Accomplishment Instructions of Boeing Service Bulletin (SB) 747-24A2240, Revision 1, dated February 20, 2003. Before further flight, repair any damage per the SB. Thereafter, repeat the inspection at intervals not to exceed 10,000 flight hours, until the actions required by paragraph (c) of this AD are accomplished.

Note 1: For the purposes of this AD, a general visual inspection is defined as: "A visual examination of an interior or exterior area, installation, or assembly to detect obvious damage, failure, or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to enhance visual access to all exposed surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight, or droplight and may require removal or opening of access panels or doors. Stands, ladders, or platforms may be required to gain proximity to the area being checked."

Inspection for Chafing and Arcing Damage

(b) Within 90 days after the effective date of this AD, perform a general visual inspection for chafing and arcing damage of the power feeder cables of the IDG and hydraulic lines on each outboard strut aft of the block clamp, per the Accomplishment Instructions of Boeing Alert Service Bulletin (ASB) 747-24A2247, dated July 10, 2003. Before further flight, repair any chafing or arcing damage per the ASB. Thereafter, repeat the inspection at intervals not to exceed 10,000 flight hours until the actions required by paragraph (d) of this AD are accomplished.

Terminating Requirements for Paragraph (a) of This AD

(c) Within 48 months after the effective date of this AD, remove the conduit, install a new shield/bracket assembly, and replace two hydraulic lines with two new hydraulic lines in each engine strut, per the Accomplishment Instructions of Boeing SB 747-24A2242, Revision 1, dated August 14, 2003. Before further flight, perform related investigative actions and corrective actions per the Accomplishment Instructions of the SB. Accomplishment of these actions terminates the inspection requirements of paragraph (a) of this AD.

Terminating Requirements for Paragraph (b) of This AD

(d) Within 48 months after the effective date of this AD, replace the wiring and hydraulic tubing support bracket per the Accomplishment Instructions of Boeing ASB 747-24A2243, dated October 31, 2002. Accomplishment of these actions terminates the inspection requirements of paragraph (b) of this AD.

Alternative Methods of Compliance (AMOC)

(e) In accordance with 14 CFR 39.19, the Manager, Seattle Aircraft Certification Office (ACO), FAA, is authorized to approve alternative methods of compliance (AMOCs) for this AD.

Incorporation by Reference

(f) The actions shall be done in accordance with Boeing Service Bulletin 747-24A2240, Revision 1, dated February 20, 2003; Boeing Service Bulletin 747-24A2242, Revision 1, dated August 14, 2003; Boeing Alert Service Bulletin 747-24A2243, dated October 31, 2002; and Boeing Alert Service Bulletin 747-24A2247, dated July 10, 2003, as applicable. 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 Airplanes, 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 National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*.

Effective Date

(g) This amendment becomes effective on June 17, 2004.

Issued in Renton, Washington, on May 18, 2004.
Kevin M. Mullin,
Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.
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