

[Federal Register: March 5, 2009 (Volume 74, Number 42)]
[Rules and Regulations]
[Page 9565-9568]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr05mr09-2]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-0199; Directorate Identifier 2009-NM-017-AD; Amendment 39-15835; AD 2009-05-11]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 777-200 and -300 Series Airplanes Equipped With Rolls-Royce Model RB211-TRENT 800 Series Engines

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule; request for comments.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD) that applies to certain Boeing Model 777-200 and -300 series airplanes. The existing AD currently requires revising the airplane flight manual (AFM) to include in-flight procedures for pilots to follow in certain cold weather conditions and requires fuel circulation procedures on the ground when certain conditions exist. This new AD retains the fuel circulation procedures. This new AD also revises the AFM procedures required by the existing AD. This AD results from a report of a single-engine rollback as a result of ice blocking the fuel oil heat exchanger. We are issuing this AD to prevent ice from accumulating in the main tank fuel feed system, which, when released, could result in a restriction in the engine fuel system. Such a restriction could result in failure to achieve a commanded thrust, and consequent forced landing of the airplane.

DATES: This AD becomes effective March 20, 2009.

We must receive any comments on this AD by May 4, 2009.

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1, fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Margaret Langsted, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6500; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

On September 5, 2008, we issued AD 2008-19-04, amendment 39-15671 (73 FR 52909, September 12, 2008). That AD applies to certain Boeing Model 777-200 and -300 series airplanes. That AD requires revising the airplane flight manual (AFM) to include in-flight procedures for pilots to follow in certain cold weather conditions and requires fuel circulation procedures on the ground when certain conditions exist. That AD resulted from a report of uncommanded reduction in thrust on both engines because of reduced fuel flows. The actions specified in that AD are intended to prevent ice from accumulating in the main tank fuel feed system, which, when released, could result in a restriction in the engine fuel system. Such a restriction could result in failure to achieve a commanded thrust, and consequent forced landing of the airplane.

Actions Since AD Was Issued

Since we issued AD 2008-19-04, we received a report of a single-engine rollback as a result of ice blocking the fuel oil heat exchanger (FOHE) on a Model 777 airplane equipped with Rolls-Royce Model RB211-TRENT 800 series engines. The data confirm that ice accumulates in the fuel feed system and releases after a high thrust command, creating blockage at the FOHE and resulting in the inability of the engine to achieve the commanded thrust. Examination of the data from the rollback shows that the second of two maximum thrust step climbs was performed approximately 40 minutes prior to the thrust rollback. Ice was released within the fuel system during the step climbs and formed a restriction at the FOHE of the affected engine, as evidenced by an increase in engine oil temperature. Further analysis of the data shows that ice accretes in the fuel system more rapidly and at warmer fuel temperatures than previously indicated, and ice may build up gradually on the FOHE before causing the engine to rollback. The data from this event, in combination with Boeing fuel lab testing, demonstrates that reducing the fuel flow to minimum idle levels will clear any ice accumulation at the FOHE within a few seconds.

All of the testing and research has been conducted on Boeing Model 777-200 and -300 series airplanes, equipped with Rolls-Royce Model RB211-TRENT 800 series engines. Initial review of other Model 777 airplane engine combinations has not revealed the same vulnerability to the identified unsafe condition.

FAA's Determination and Requirements of This AD

The unsafe condition described previously is likely to exist or develop on other airplanes of the same type design. For this reason, we are issuing this AD to supersede AD 2008-19-04. This new AD retains the fuel circulation procedures. This new AD also requires revising the AFM procedures required by AD 2008-19-04. This AD revises the AFM in-flight procedures by reducing the step climb from 3 to 2 hours prior to descent, and by requiring flightcrews to retard the throttles to minimum idle for 30 seconds at the top of descent ensuring any ice accumulation on the face of the FOHE melts while the airplane is at higher altitudes. Performing all step climbs using vertical navigation (VNAV) or maximum climb thrust continues in this AD for all flights.

Paragraph (g) of AD 2008-19-04 requires that the fuel circulation procedures be accomplished by a certified mechanic. We are retaining this requirement because of the complexity of the procedure. We recognize that persons other than mechanics who are properly trained might also be capable of accomplishing this procedure. Therefore, we would be receptive to requests for approval of alternative methods of compliance in accordance with paragraph (k) of this AD to allow others to accomplish the procedure if the request includes training and oversight provisions to ensure that the procedure is accomplished properly.

Interim Action

We consider this AD interim action. The manufacturer is currently developing a modification that will address the unsafe condition identified in this AD. Once this modification is developed, approved, and available, we might consider additional rulemaking.

FAA's Justification and Determination of the Effective Date

Hazardous amounts of ice might accumulate within the main tank fuel feed system under certain conditions, which, when released, could result in a restriction in the engine fuel system. Such a restriction could result in failure to achieve a commanded thrust, and consequent forced landing of the airplane. We have determined that the loss of engine thrust was likely due to ice accumulating in the main tank fuel feed system during exposure in cold fuel temperatures and low power fuel flows. Because of our requirement to promote safe flight of civil aircraft and thus, the critical need to assure the proper functioning of the main tank fuel feed system and the short compliance time involved with this action, this AD must be issued immediately.

Because an unsafe condition exists that requires the immediate adoption of this AD, we find 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

This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments before it becomes effective. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2009- +++++; Directorate Identifier 2009-NM-017-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD 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.

For the reasons discussed above, I certify that the 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. 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA 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. The FAA amends § 39.13 by removing amendment 39-15671 (73 FR 52909, September 12, 2008) and adding the following new AD:



2009-05-11 Boeing: Docket No. FAA-2009-0199; Directorate Identifier 2009-NM-017-AD; Amendment 39-15835.

Effective Date

(a) This AD becomes effective March 20, 2009.

Affected ADs

(b) This AD supersedes AD 2008-19-04.

Applicability

(c) This AD applies to Boeing Model 777-200 and -300 series airplanes, certificated in any category; equipped with Rolls-Royce Model RB211-TRENT 800 series engines.

Subject

(d) Air Transport Association (ATA) of America Code 73: Engine Fuel and Control.

Unsafe Condition

(e) This AD results from a report of a single-engine rollback as a result of ice blocking the fuel oil heat exchanger. The Federal Aviation Administration is issuing this AD to prevent ice from accumulating in the main tank fuel feed system, which, when released, could result in a restriction in the engine fuel system. Such a restriction could result in failure to achieve a commanded thrust, and consequent forced landing of the airplane.

Restatement of Requirements of AD 2008-19-04

Airplane Flight Manual (AFM) Revision

(f) Within 10 days after September 29, 2008 (the effective date of AD 2008-19-04), revise the Limitations section of the AFM to include the following statement. This may be done by inserting a copy of this AD in the AFM. Doing the revision specified in paragraph (j) of this AD terminates the requirements of this paragraph.

"On ground, after refueling, check fuel temperature if fuel temperature indication is operative. If fuel temperature is colder than 0 degrees C or if fuel temperature indication is inoperative, verify that a record exists certifying that the approved fuel circulation procedure was performed."

"Perform all step climbs using VNAV or maximum climb thrust."

"In flight, within 3 hours of top of descent, but not less than 15 minutes before top of descent, check fuel temperature. If fuel temperature is colder than -10 degrees C, perform

a step climb using maximum climb thrust. If a step climb using maximum climb thrust cannot be accomplished, verify cruise speed is set to 0.84 Mach or less, and manually advance thrust levers to maximum (autothrottles may be overridden). After reaching maximum climb thrust, hold for 10 seconds or until reaching 0.86 Mach, whichever occurs first. Check engines to ensure they have achieved maximum climb thrust and operate normally."

Fuel Circulation Procedure

(g) As of 10 days after September 29, 2008: If the fuel temperature has not exceeded 0 degrees Celsius during the ground turn, before further flight, using the main tank fuel boost pumps, pump fuel through the fuel manifold using the high flow mode for a minimum of one minute. A certified mechanic must do the fuel circulation procedure required by this paragraph using a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA.

(h) Before further flight after accomplishing the action required by paragraph (g) of this AD, make a record in which the person accomplishing the procedure certifies that it was accomplished in accordance with the approved method, and provide the record to the flightcrew. Under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.), the Office of Management and Budget (OMB) has approved the information collection requirements contained in this AD and has assigned OMB Control Number 2120-0056.

Special Flight Permit

(i) Special flight permits, as described in Section 21.197 and Section 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199), are not allowed.

New Requirements of This AD

AFM Revision

(j) Within 10 days after the effective date of this AD, revise the Limitations section of the AFM to include the following statement. This may be done by inserting a copy of this AD in the AFM. Doing the revision specified in this paragraph terminates the requirements of paragraph (f) of this AD; after this revision has been done, the AFM limitation required by paragraph (f) of this AD must be removed from the AFM.

"STEP CLIMBS AND INITIAL DESCENT

Perform all step climbs using VNAV or maximum climb thrust. During initial descent, maintain idle thrust for a minimum of 30 seconds.

COLD FUEL OPERATIONS

On ground, after refueling, check fuel temperature if fuel temperature indication is operative. If fuel temperature is 0 degrees C or colder or if fuel temperature indication is inoperative, verify that a record exists certifying that the approved fuel circulation procedure was performed.

Do not do the following paragraph and balance the fuel at the same time. Balance the fuel before or after performing the following paragraph.

In flight, within 2 hours of top of descent, but not less than 15 minutes before top of descent, check fuel temperature. If fuel temperature is colder than -10 degrees C, perform a step climb using maximum climb thrust. If a step climb using maximum climb thrust cannot be accomplished, select or verify CLB thrust on the thrust limit page and verify cruise speed is set to 0.84 Mach or less. Manually advance thrust levers to maximum (autothrottles may be overridden). After reaching maximum climb thrust, hold for 10 seconds or until reaching 0.86 Mach, whichever occurs first. Check engines to ensure they have achieved maximum climb thrust and operate normally."

Note 1: When a statement identical to that in paragraph (j) of this AD has been included in the general revisions of the AFM, the general revisions may be inserted into the AFM, and the copy of this AD may be removed from the AFM.

Alternative Methods of Compliance (AMOCs)

(k)(1) The Manager, Seattle ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Margaret Langsted, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle ACO, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6500; fax (425) 917-6590.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office. The AMOC approval letter must specifically reference this AD.

(3) AMOCs approved previously in accordance with AD 2008-19-04, are approved as AMOCs for the corresponding provisions of paragraph (g) of this AD.

(4) Methods of compliance (MOCs) approved previously in accordance with AD 2008-19-04, are approved as MOCs for the corresponding provisions of paragraph (g) of this AD.

Material Incorporated by Reference

(l) None.

Issued in Renton, Washington, on February 17, 2009.
Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.