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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0363; Directorate Identifier 2008-NM-020-AD; Amendment 39-15553; AD 2008-12-10]

RIN 2120-AA64

Airworthiness Directives; Bombardier Model CL-600-2B19 (Regional Jet Series 100 & 440) Airplanes

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

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

* * * * *

This assessment showed that the electrical harness of the Fuel Quantity Gauging System (FQGS) is installed in the same routing as the 28 Volts AC, 28 Volts DC, and 115 Volts AC electrical harnesses. A chafing condition between these electrical harnesses and the FQGS harness could increase the surface temperatures of fuel quantity probes and high level sensors inside the fuel tank, resulting in potential ignition source[s] and consequent fuel tank explosion.

* * * * *

We are issuing this AD to require actions to correct the unsafe condition on these products.

DATES: This AD becomes effective July 16, 2008.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of July 16, 2008.

ADDRESSES: You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC.

FOR FURTHER INFORMATION CONTACT: Richard Fiesel, Aerospace Engineer, Airframe and Propulsion Branch, ANE-171, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7304; fax (516) 794-5531.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on March 27, 2008 (73 FR 16221). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

Bombardier Aerospace has completed a system safety review of the CL-600-2B19 aircraft fuel system against new fuel tank safety standards, introduced in Chapter 525 of the Airworthiness Manual through Notice of Proposed Amendment (NPA) 2002-043. The identified non-compliances were assessed using Transport Canada Policy Letter No. 525-001, to determine if mandatory corrective action is required.

This assessment showed that the electrical harness of the Fuel Quantity Gauging System (FQGS) is installed in the same routing as the 28 Volts AC, 28 Volts DC, and 115 Volts AC electrical harnesses. A chafing condition between these electrical harnesses and the FQGS harness could increase the surface temperatures of fuel quantity probes and high level sensors inside the fuel tank, resulting in potential ignition source[s] and consequent fuel tank explosion.

To correct the unsafe condition, this directive mandates the modification of FQGS electrical harness routing.

You may obtain further information by examining the MCAI in the AD docket.

The FAA has examined the underlying safety issues involved in fuel tank explosions on several large transport airplanes, including the adequacy of existing regulations, the service history of airplanes subject to those regulations, and existing maintenance practices for fuel tank systems. As a result of those findings, we issued a regulation titled "Transport Airplane Fuel Tank System Design Review, Flammability Reduction and Maintenance and Inspection Requirements" (66 FR 23086, May 7, 2001). In addition to new airworthiness standards for transport airplanes and new maintenance requirements, this rule included Special Federal Aviation Regulation Number 88 ("SFAR 88," Amendment 21-78, and subsequent Amendments 21-82 and 21-83).

Among other actions, SFAR 88 requires certain type design (i.e., type certificate (TC) and supplemental type certificate (STC)) holders to substantiate that their fuel tank systems can prevent ignition sources in the fuel tanks. This requirement applies to type design holders for large turbine-powered transport airplanes and for subsequent modifications to those airplanes. It requires them to perform design reviews and to develop design changes and maintenance procedures if their designs do not meet the new fuel tank safety standards. As explained in the preamble to the rule, we intended to adopt airworthiness directives to mandate any changes found necessary to address unsafe conditions identified as a result of these reviews.

In evaluating these design reviews, we have established four criteria intended to define the unsafe conditions associated with fuel tank systems that require corrective actions. The percentage of operating time during which fuel tanks are exposed to flammable conditions is one of these criteria. The other three criteria address the failure types under evaluation: single failures, single failures in combination with a latent condition(s), and in-service failure experience. For all four criteria, the evaluations included consideration of previous actions taken that may mitigate the need for further action.

We have determined that the actions identified in this AD are necessary to reduce the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

We reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed.

Differences Between This AD and the MCAI or Service Information

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI and related service information.

We might also have required different actions in this AD from those in the MCAI in order to follow our FAA policies. Any such differences are highlighted in a NOTE within the AD.

Costs of Compliance

We estimate that this AD will affect 709 products of U.S. registry. We also estimate that it will take about 83 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$80 per work-hour. Required parts will cost about \$15,552 per product. Where the service information lists required parts costs that are covered under warranty, we have assumed that there will be no charge for these parts. As we do not control warranty coverage for affected parties, some parties may incur costs higher than estimated here. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$15,734,128, or \$22,192 per product.

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 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 this AD:

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.

Examining the AD Docket

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

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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 adding the following new AD:



2008-12-10 Bombardier, Inc. (Formerly Canadair): Amendment 39-15553. Docket No. FAA-2008-0363; Directorate Identifier 2008-NM-020-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective July 16, 2008.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to Bombardier Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes; certificated in any category; serial numbers 7003 through 7067 inclusive, and 7069 through 7982 inclusive.

Subject

- (d) Air Transport Association (ATA) of America Code 28: Fuel.

Reason

- (e) The mandatory continuing airworthiness information (MCAI) states:

Bombardier Aerospace has completed a system safety review of the CL-600-2B19 aircraft fuel system against new fuel tank safety standards, introduced in Chapter 525 of the Airworthiness Manual through Notice of Proposed Amendment (NPA) 2002-043. The identified non-compliances were assessed using Transport Canada Policy Letter No. 525-001, to determine if mandatory corrective action is required.

This assessment showed that the electrical harness of the Fuel Quantity Gauging System (FQGS) is installed in the same routing as the 28 Volts AC, 28 Volts DC, and 115 Volts AC electrical harnesses. A chafing condition between these electrical harnesses and the FQGS harness could increase the surface temperatures of fuel quantity probes and high level sensors inside the fuel tank, resulting in potential ignition source[s] and consequent fuel tank explosion.

To correct the unsafe condition, this directive mandates the modification of FQGS electrical harness routing.

Actions and Compliance

(f) Within 10,000 flight hours after the effective date of this AD, unless already done, do the following actions.

(1) Modify the FQGS harness routing according to the Accomplishment Instructions of Bombardier Service Bulletin 601R-28-059, Revision E, dated October 29, 2007.

(2) Actions done before the effective date of this AD in accordance with the Bombardier service information specified in Table 1 of this AD are acceptable for compliance with the corresponding requirements of this AD.

Table 1 – Service Information

Service Bulletin	Revision	Date
601R-28-059	Original	October 19, 2004
601R-28-059	A	July 28, 2005
601R-28-059	B	November 17, 2005
601R-28-059	C	March 8, 2007
601R-28-059	D	May 10, 2007

FAA AD Differences

Note: This AD differs from the MCAI and/or service information as follows: No differences.

Other FAA AD Provisions

(g) The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, New York Aircraft Certification Office (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: Richard Fiesel, Aerospace Engineer, Airframe and Propulsion Branch, ANE-171, FAA, New York ACO, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7304; fax (516) 794-5531. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(3) Reporting Requirements: For any reporting requirement in this AD, under the provisions of the Paperwork Reduction Act, the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120-0056.

Related Information

(h) Refer to MCAI Canadian Airworthiness Directive CF-2007-36, dated December 21, 2007, and Bombardier Service Bulletin 601R-28-059, Revision E, dated October 29, 2007, for related information.

Material Incorporated by Reference

(i) You must use Bombardier Service Bulletin 601R-28-059, Revision E, dated October 29, 2007, to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of this service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For service information identified in this AD, contact Bombardier, Inc., Canadair, Aerospace Group, P.O. Box 6087, Station Centre-ville, Montreal, Quebec H3C 3G9, Canada.

(3) You may review copies 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/cfr/ibr-locations.html>.

Issued in Renton, Washington, on May 29, 2008.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E8-12825 Filed 6-10-08; 8:45 am]