

accordance with the Accomplishment

Instructions of the applicable service bulletin listed in Table 1 of this AD.

TABLE 1—SERVICE BULLETINS

Airplane model—	Bombardier Service Bulletin—	Revision—	Dated—
CL-600-1A11 (CL-600) .....	600-0742	01	July 6, 2009.
CL-600-2A12 (CL-601) .....	601-0597	01	July 6, 2009.
CL-600-2B16 (CL-601-3A, CL-601-3R variant).			
CL-600-2B16 (CL-604 variant) .....	604-29-008	01	July 6, 2009.
CL-600-2B16 (CL-605) .....	605-29-001	01	July 6, 2009.

(i) For each accumulator (P/Ns 08-60163-001, 08-60163-002, 08-60164-001, and 08-60164-002) that has accumulated more than 3,650 total flight cycles as of the effective date of this AD, replace the accumulator within 100 flight cycles after the effective date of this AD.

(ii) For each accumulator (P/Ns 08-60163-001, 08-60163-002, 08-60164-001, and 08-60164-002) that has accumulated 3,650 total flight cycles or fewer as of the effective date of this AD, replace the accumulator before

the accumulation of 3,750 total flight cycles on the accumulator.

(iii) For each accumulator (P/Ns 08-60163-001, 08-60163-002, 08-60164-001, and 08-60164-002) for which it is not possible to determine the number of flight cycles accumulated, replace the accumulator within 100 flight cycles after the effective date of this AD.

(3) Thereafter, before the accumulation of 3,750 total flight cycles on any accumulator having P/N 08-60163-001, 08-60163-002, 08-60164-001, or 08-60164-002, replace the

accumulator with a new accumulator having the same part number, in accordance with the Accomplishment Instructions of the applicable service bulletin listed in Table 1 of this AD.

(4) Replacement of an accumulator with a new accumulator having the same part number is also acceptable for compliance with the requirements of paragraph (g)(2) of this AD, if done before the effective date of this AD in accordance with the applicable service bulletin listed in Table 2 of this AD:

TABLE 2—PREVIOUS SERVICE BULLETINS

Airplane model—	Bombardier Service Bulletin—	Dated—
CL-600-1A11 (CL-600) .....	600-0742	November 10, 2008.
CL-600-2A12 (CL-601) .....	601-0597	November 10, 2008.
CL-600-2B16 (CL-601-3A, CL-601-3R variant).		
CL-600-2B16 (CL-604 variant) .....	604-29-008	November 10, 2008.
CL-600-2B16 (CL-605) .....	605-29-001	November 10, 2008.

**FAA AD Differences**

**Note 2:** This AD differs from the MCAI and/or service information as follows:

(1) The MCAI specifies that certain airplanes do not need to be inspected for the part number; however, this AD requires that inspections be done on all airplanes to determine the part number.

(2) The MCAI specifies to record the number of flight cycles accumulated on each affected part. This AD does not require that operators record the number of flight cycles.

**Other FAA AD Provisions**

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

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, New York Aircraft Certification Office (ACO), ANE-170, 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: Program Manager, Continuing Operational Safety, FAA, New York ACO, 1600 Stewart Avenue, Suite 410, Westbury, New York, 11590; telephone 516-228-7300; fax 516-794-5531. 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.

(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 (44 U.S.C. 3501 *et seq.*), the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120-0056.

**Related Information**

(i) Refer to MCAI Canadian Airworthiness Directive CF-2009-39, dated October 27, 2009, and the service bulletins listed in Table 1 of this AD, for related information.

Issued in Renton, Washington, on February 5, 2010.

**Stephen P. Boyd,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*

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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2010-0037; Directorate Identifier 2009-NM-240-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Model 737-700 (IGW) Series Airplanes Equipped With Auxiliary Fuel Tanks Installed in Accordance With Configuration 3 of Supplemental Type Certificate ST00936NY**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for certain Model 737-700 (IGW) series airplanes. This proposed AD would require deactivation or modification of PATS Aircraft, LLC, auxiliary fuel tanks. This proposed AD results from fuel system reviews conducted by the manufacturer. We are proposing this AD to prevent 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.

**DATES:** We must receive comments on this proposed AD by March 29, 2010.

**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 proposed AD, contact Decrane Aerospace, PATS Aircraft Systems, 21652 Nanticoke Avenue, Georgetown, Delaware 19947; telephone 302-253-6157; fax 302-855-0153; e-mail [giuseppecoppola@decraneaerospace.com](mailto:giuseppecoppola@decraneaerospace.com); Internet <http://www.decraneaerospace.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221 or 425-227-1152.

#### 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 proposed 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:** Mazdak Hobbi, Aerospace Engineer, Propulsion and Services Branch, ANE-173, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7330; fax (516) 794-5531.

#### SUPPLEMENTARY INFORMATION:

##### Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA-2010-0037; Directorate Identifier 2009-NM-240-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed 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 proposed AD.

##### Discussion

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 No. 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.

#### Supplemental Type Certificates (STCs) for PATS Aircraft, LLC, Auxiliary Fuel Tanks

The auxiliary fuel tank STC on affected airplanes is of two basic type designs: A box-and-bladder type, and a double-walled cylindrical type. The box-and-bladder tanks are emptied and vented into the airplane center wing tank using either pneumatic air pressure supplied from the airplane, or electrical power from the airplane to power fuel pumps installed in the tank external dry bay area. The double-walled cylindrical tanks use pneumatic air pressure to empty into the airplane center wing tank. All auxiliary tanks use some type of electrical fuel quantity indication system (FQIS), flight deck control and annunciation panels, float level switches, valves and venting systems, electrical wiring connections in the dry bay area, and electrical bonding methods.

#### FAA's Findings

During the SFAR 88 safety assessment, it was determined that the PATS Aircraft, LLC, FQIS and float level switch did not meet intrinsically safe electrical energy levels as described in the guidelines of Advisory Circular (AC) 25.981-1C, "Fuel Tank Ignition Source Prevention Guidelines." PATS Aircraft, LLC, the STC holder, identified potential ignition sources resulting from a combination of single and latent

failures for the PATS Aircraft, LLC, fuel tank subsystems. PATS Aircraft, LLC, has not complied with the requirements of SFAR 88, paragraph 2. To prevent high electrical energy levels from the FQIS and float level switch from entering the auxiliary fuel tank, we have determined that the appropriate solution for continued use is a combination of actions. Installing a transient suppression device (TSD) on FQIS and float level switches would be needed. In order to maximize wire separation, the TSD must be installed as close as possible to the points where the FQIS and float level switch wires exit the TSD and enter the auxiliary tank. Other actions might include replacing high-energy FQISs, and float level switches that are impractical for TSD application, with intrinsically safe FQISs, providing wire separation, conducting a one-time inspection and/or replacing aging float level switch conduit assemblies, periodically inspecting the external dry bay system components and wires, and testing the integrity of bonding resistances.

As an alternative to the modification described above, deactivation of the auxiliary fuel tanks would adequately address the unsafe condition. If operators do not wish to deactivate their auxiliary fuel tanks, we will consider requests for alternative methods of compliance (AMOCs). The most likely requests would be to allow continued use of the tanks by showing compliance with SFAR 88. This would involve obtaining STCs to modify the auxiliary fuel tank systems and developing maintenance procedures to address the safety issues identified above. PATS Aircraft, LLC, as the current STC holder, may be working on AMOCs. Operators may contact PATS or propose an AMOC on their own.

Once an operator has deactivated a tank as proposed by this NPRM, the operator might wish to remove the tank. This would require a separate design approval, if an approved tank removal procedure does not exist.

#### Relevant Service Information

We have reviewed Decrane Aerospace Service Bulletins ST00936NY-D-28-SB-001\_K, dated August 25, 2008; and ST00936NY-D-28-SB-021\_K, dated January 8, 2009; which describe procedures for modifying the auxiliary fuel system (AFS). The modification of the auxiliary fuel cells of the AFS specified in Decrane Aerospace Service Bulletin ST00936NY-D-28-SB-001\_K includes removing, repositioning, replacing or adding bonding jumpers and/or hardware. The modification of the AFS harnesses specified in Decrane

Aerospace Service Bulletin ST00936NY-D-28-SB-021\_K includes removing and replacing the auxiliary fuel system critical harnesses.

#### FAA's Determination and Requirements of the Proposed AD

We have evaluated all pertinent information and identified an unsafe condition that is likely to exist or develop on other products of this same type design. For this reason, we are proposing this AD, which would require deactivation to prevent usage of auxiliary fuel tanks, or modification of the auxiliary fuel system.

#### Costs of Compliance

We estimate that this proposed AD would affect 11 airplanes of U.S. registry. We also estimate that it would take about 250 work-hours per product to comply with this proposed AD. The average labor rate is \$85 per work-hour. Required parts would cost about \$10,000 per product. Based on these figures, we estimate the cost of this proposed AD to the U.S. operators to be \$343,750, or \$31,250 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 proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 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. 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.

You can find our regulatory evaluation and the estimated costs of compliance in the AD Docket.

#### List of Subjects in 14 CFR Part 39

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

#### The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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:

**The Boeing Company:** Docket No. FAA-2010-0037; Directorate Identifier 2009-NM-240-AD.

#### Comments Due Date

- (a) We must receive comments by March 29, 2010.

#### Affected ADs

- (b) None.

#### Applicability

(c) This AD applies to The Boeing Company Model 737-700 (IGW) series airplanes, certificated in any category; equipped with auxiliary fuel tanks installed in accordance with configuration 3 of Supplemental Type Certificate ST00936NY.

#### Subject

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

#### Unsafe Condition

(e) This AD results from fuel system reviews conducted by the manufacturer. The Federal Aviation Administration is issuing this AD to prevent 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.

#### Compliance

- (f) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

### Prevent Usage of Auxiliary Fuel Tanks or Modify Auxiliary Fuel System

(g) Within 45 days after the effective date of this AD: Accomplish the requirements specified in paragraph (g)(1) or (g)(2) of this AD.

(1) Deactivate the auxiliary fuel tanks, in accordance with a deactivation procedure approved by the Manager, New York Aircraft Certification Office (ACO). Any auxiliary tank component that remains on the airplane must be secured and must have no effect on the continued operational safety and airworthiness of the airplane. Deactivation must not result in the need for additional instructions for continued airworthiness.

**Note 1:** Appendix A of this AD provides criteria that should be included in the deactivation procedures. The proposed deactivation procedures should be submitted to the Manager, New York ACO, as soon as possible to ensure timely review and approval.

**Note 2:** For technical information, contact Mazdak Hobbi, Aerospace Engineer, Propulsion and Services Branch, ANE-173, FAA, New York Aircraft Certification Office (ACO), 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone 516-228-7330; fax 516-794-5531.

(2) Modify the auxiliary fuel system by doing all the applicable actions in accordance with the Accomplishment Instructions of Decrane Aerospace Service Bulletin ST00936NY-D-28-SB-001\_K, dated August 25, 2008; and Decrane Aerospace Service Bulletin ST00936NY-D-28-SB-021\_K, dated January 8, 2009.

### Reporting Requirement

(h) Within 45 days after the effective date of this AD, submit a report to the Manager, New York ACO. The report must include the information listed in paragraphs (h)(1), (h)(2), and (h)(3) of this AD. 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 assigned OMB Control Number 2120-0056.

(1) The airplane registration and operation status.

(2) The usage frequency in terms of total number of flights per year and total number

of flights per year for which the auxiliary tank is used.

(3) Method of complying with paragraph (g)(1) of this AD.

### Alternative Methods of Compliance (AMOCs)

(i)(1) The Manager, New York ACO, ANE-170, 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:* Program Manager, Continuing Operational Safety, FAA, New York ACO, 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone 516-228-7300; fax 516-794-5531. 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.

(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.

### Appendix A

#### Deactivation Criteria

The auxiliary fuel tank deactivation procedures required by paragraph (g)(1) of this AD should address the following actions.

(1) Permanently drain auxiliary fuel tanks, and clear them of fuel vapors to eliminate the possibility of out-gassing of fuel vapors from the emptied auxiliary tank.

(2) Disconnect all electrical connections from the fuel quantity indication system (FQIS), fuel pumps if applicable, float switches, and all other electrical connections required for auxiliary tank operation, and stow them at the auxiliary tank interface.

(3) Disconnect all pneumatic connections if applicable, cap them at the pneumatic source, and secure them.

(4) Disconnect all fuel feed and fuel vent plumbing interfaces with airplane original equipment manufacturer (OEM) tanks, cap them at the airplane tank side, and secure

them in accordance with a method approved by the FAA; one approved method is specified in AC 25-8 Auxiliary Fuel System Installations. In order to eliminate the possibility of structural deformation during cabin decompression, leave open and secure the disconnected auxiliary fuel tank vent lines.

(5) Pull and collar all circuit breakers used to operate the auxiliary tank.

(6) Revise the weight and balance document, if required, and obtain FAA approval.

(7) Amend the applicable sections of the applicable airplane flight manual (AFM) to indicate that the auxiliary fuel tank is deactivated. Remove auxiliary fuel tank operating procedures to ensure that only the OEM fuel system operational procedures are contained in the AFM. Amend the Limitations Section of the AFM to indicate that the AFM Supplement for the STC is not in effect. Place a placard in the flight deck indicating that the auxiliary tank is deactivated. The AFM revisions specified in this paragraph may be accomplished by inserting a copy of this AD into the AFM.

(8) Amend the applicable sections of the applicable flight crew operating manual and airplane maintenance manual to remove auxiliary tank maintenance procedures.

(9) After the auxiliary fuel tank is deactivated, accomplish procedures such as leak checks and pressure checks deemed necessary before returning the airplane to service. These procedures must include verification that the airplane FQIS and fuel distribution systems have not been adversely affected.

(10) Revise the instructions for continued airworthiness, as required, after deactivation.

(11) Include with the operator's proposed procedures any relevant information or additional steps that are deemed necessary by the operator to comply with the deactivation and return the airplane to service.

Issued in Renton, Washington, on February 5, 2010.

**Stephen P. Boyd,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*

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