

Proposed Rules

Federal Register

Vol. 72, No. 4

Monday, January 8, 2007

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 23

[Docket No. CE263; Notice No. 23-07-01-SC]

Special Conditions: Aviation Technology Group, Incorporated, Javelin Model 100; Firewalls for Fuselage Mounted Engines and Fire Extinguishing for Aft Fuselage Mounted Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed special conditions.

SUMMARY: This action proposes special conditions for the Aviation Technology Group, Incorporated, Javelin Model 100 airplane. This airplane will have a novel or unusual design feature(s) associated with aft mounted engine fire protection. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These proposed special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: We must receive your comments by February 7, 2007.

ADDRESSES: Mail two copies of your comments to: Federal Aviation Administration, Regional Counsel, ACE-7, 901 Locust, Room 506, Kansas City, Missouri 64106. You may deliver two copies to the Small Airplane Directorate at the above address. Mark your comments: Docket No. CE263. You may inspect comments in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

FOR FURTHER INFORMATION CONTACT: Leslie B. Taylor, Regulations & Policy Branch, ACE-111, Federal Aviation Administration, Small Airplane Directorate, Aircraft Certification Service, 901 Locust, Kansas City, MO

64106; telephone (816) 329-4134; facsimile (816) 329-4090, e-mail at leslie.b.taylor@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data. We ask that you send us two copies of written comments.

We will file in the docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning these special conditions. You can inspect the docket before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this preamble between 7:30 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

We will consider all comments we receive on or before the closing date for comments. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change these special conditions based on the comments we receive.

If you want the FAA to acknowledge receipt of your comments on this proposal, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

Background

On February 25, 2005, Aviation Technology Group, Incorporated applied for a type certificate for their new Javelin Model 100. The Javelin Model 100, is a two-place acrobatic airplane with two fuselage mounted turbofan engines.

Part 23 historically addressed fire protection on multiengine airplanes based on the assumption that the engines are sufficiently separated to essentially eliminate the possibility of an engine fire spreading to another engine. On traditional multiengine airplanes, this has been achieved by locating engines on the wings separated by the fuselage. This configuration ensures that an engine fire on one side does not migrate to the opposite engine.

This configuration also protects the opposite engine from heat radiating from the engine fire. Prevention, identification, and containment are traditional means of fire protection. Prevention has been provided through minimizing the potential for ignition of flammable fluids and vapors. Identification has been provided by locating engines within the pilots' primary field of view and/or with the incorporation of fire detection systems. This has provided both rapid detection of a fire and confirmation when it was extinguished. Containment has been provided through the isolation of designated fire zones through flammable fluid shutoff valves and firewalls. This philosophy also ensures that components of the engine control system will function effectively to permit a safe shutdown of an engine. However, containment has only been demonstrated for 15 minutes. If a fire occurs in traditional Part 23 airplanes, the appropriate corrective action is to land as soon as possible. For a small, simple airplane originally envisioned by Part 23, it is possible to descend and land within 15 minutes. Thus, the occupants can safely exit the airplane before the firewall is breached. These simple airplanes normally have the engine located away from critical flight control systems and primary structure. This has ensured that, throughout a fire event, a pilot can continue safe flight, and it has made the prediction of fire effects relatively easy.

Title 14 CFR, part 23, did not envision the type of configuration of the Javelin Model 100 airplane. The Javelin Model 100 incorporates two turbofan engines located side-by-side in compartments in the aft fuselage. These engines are not in the pilots' field of view. Located forward of the engines is a 280 gallon fuel tank and associated components. Behind and above the engines are the horizontal and vertical tails. Passing through or near the engines are primary structure and systems to support these critical flight controls. With the location in the aft fuselage, the ability to visually detect a fire is minimal. The effects of a fire emanating from an enclosed engine installation are more varied, adverse, and more difficult to predict than an engine fire envisioned for typical part 23 airplanes.

Type Certification Basis

Under 14 CFR 21.17, Aviation Technology Group, Incorporated must show that the Javelin Model 100 meets the applicable provisions of part 23, as amended by Amendments 23-1 through 23-55 thereto.

If the Administrator finds that the applicable airworthiness regulations in 14 CFR part 23 do not contain adequate or appropriate safety standards for the Javelin Model 100 because of a novel or unusual design feature, special conditions are prescribed under § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Javelin Model 100 must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34 and the noise certification requirements of 14 CFR part 36, and the FAA must issue a finding of regulatory adequacy under section 611 of Public Law 92-574, the "Noise Control Act of 1972."

The FAA issues special conditions, as defined in § 11.19, under § 11.38, and they become part of the type certification basis under § 21.17(a)(2).

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

Novel or Unusual Design Features

The Javelin Model 100 will incorporate the following novel or unusual design features: The Javelin Model 100 incorporates two turbofan engines located side-by-side in compartments in the aft fuselage. These engines are not in the pilots' field of view. Located forward of the engines is a 280 gallon fuel tank and associated components. Behind and above the engines are the horizontal and vertical tails. Passing through or near the engines are primary structure and systems to support these critical flight controls. The effects of a fire in such a compartment are more varied and adverse than the typical engine fire in a simple Part 23 airplane. With the location in the aft fuselage, the ability to visually detect a fire is minimal. However, the ability to extinguish an engine fire becomes extremely critical with the Javelin engine location. The engines in the aft fuselage have the potential to affect the pitch and yaw primary flight controls and the fuselage and empennage structure.

While the certification basis for the Model 100 requires that a fire detection

system be installed due to the engine location, fire extinguishing is also considered a requirement. A sustained fire could result in loss of control of the airplane and damage to primary structure before an emergency landing could be made. Because of the location of critical structures and flight controls, a means to minimize the probability of re-ignition from occurring is necessary. One acceptable method to minimize re-ignition is to install a two-shot system. The effects of a fire emanating from an enclosed engine installation are more varied, adverse, and more difficult to predict than an engine fire envisioned for typical part 23 airplanes.

Discussion

The engines are side-by-side in the aft fuselage so there is a need to maintain isolation during a fire including heat transfer from the engine fire to the unaffected engine. There is also a need to prevent flammable vapors, flammable fluids, and flame from accumulating. Finally, there is a need to extinguish fires.

Applicability

As discussed above, these special conditions are applicable to the Javelin Model 100. Should Aviation Technology Group, Incorporated, apply later for a change to the type certificate to include another model incorporating the same novel or unusual design feature, the special conditions would apply to that model as well.

Conclusion

This action affects only certain novel or unusual design features on one model of airplane. It is not a rule of general applicability, and it affects only the applicant who applied to the FAA for approval of these features on the airplane.

List of Subjects in 14 CFR Part 23

Aircraft, Aviation safety, Signs and symbols.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(g), 40113, and 44701; 14 CFR 21.16 and 21.17; and 14 CFR 11.38 and 11.19.

The Proposed Special Conditions

Accordingly, the Federal Aviation Administration (FAA) proposes the following special conditions as part of the type certification basis for Aviation Technology Group, Incorporated Javelin Model No. 100 airplanes.

Fire Isolation and Extinguishing

The fire protection system of the airplane must include features to isolate

each fire zone from any other zone and the airplane to maintain isolation of the engines during a fire. Therefore, these special conditions mandate that the firewall required by § 23.1191 be extended to provide firewall isolation between either engine. These special conditions require that heat radiating from a fire originating in any fire zone must not affect components, airframe structure, systems, or flight controls in adjacent compartments in a way that endangers the airplane.

Each fire zone should be ventilated to prevent the accumulation of flammable vapors. It must also be designed such that it will not allow entry of flammable fluids, vapors, or flames from other fire zones. It must be designed such that it does not create an additional fire hazard from the discharge of vapors or fluids.

1. *SC 23.1195*—Add the requirements of § 23.1195 while deleting "For commuter category," adding the requirement to "minimize the probability of re-ignition," and deleting the statement "An individual 'one-shot' system may be used."

23.1195, Fire Extinguishing Systems

(a) Fire extinguishing systems must be installed and compliance shown with the following:

(1) Except for combustor, turbine, and tailpipe sections of turbine-engine installations that contain lines or components carrying flammable fluids or gases for which a fire originating in these sections is shown to be controllable, a fire extinguisher system must serve each engine compartment;

(2) The fire extinguishing system, the quantity of extinguishing agent, the rate of discharge, and the discharge distribution must be adequate to extinguish fires and minimize the probability of re-ignition;

(3) The fire extinguishing system for a nacelle must be able to simultaneously protect each compartment of the nacelle for which protection is provided.

(b) If an auxiliary power unit is installed in any airplane certificated to this part, that auxiliary power unit compartment must be served by a fire extinguishing system meeting the requirements of paragraph (a)(2) of this section.

2. *SC 23.1197*—Add the requirements of § 23.1197 while deleting "For commuter category airplanes."

23.1197, Fire Extinguishing Agents

The following applies:

(a) Fire extinguishing agents must—

(1) Be capable of extinguishing flames emanating from any burning fluids or other combustible materials in the area

protected by the fire extinguishing system; and

(2) Have thermal stability over the temperature range likely to be experienced in the compartment in which they are stored.

(b) If any toxic extinguishing agent is used, provisions must be made to prevent harmful concentrations of fluid or fluid vapors (from leakage during normal operation of the airplane or as a result of discharging the fire extinguisher on the ground or in flight) from entering any personnel compartment, even though a defect may exist in the extinguishing system. This must be shown by test except for built-in carbon dioxide fuselage compartment fire extinguishing systems for which—

(1) Five pounds or less of carbon dioxide will be discharged under established fire control procedures into any fuselage compartment; or

(2) Protective breathing equipment is available for each flight crewmember on flight deck duty.

3. *SC 23.1199*—Add the requirements of § 23.1199 while deleting “For commuter category airplanes.”

23.1199, Extinguishing Agent Containers

The following applies:

(a) Each extinguishing agent container must have a pressure relief to prevent bursting of the container by excessive internal pressures.

(b) The discharge end of each discharge line from a pressure relief connection must be located so that discharge of the fire-extinguishing agent would not damage the airplane. The line must also be located or protected to prevent clogging caused by ice or other foreign matter.

(c) A means must be provided for each fire extinguishing agent container to indicate that the container has discharged or that the charging pressure is below the established minimum necessary for proper functioning.

(d) The temperature of each container must be maintained, under intended operating conditions, to prevent the pressure in the container from—

(1) Falling below that necessary to provide an adequate rate of discharge; or

(2) Rising high enough to cause premature discharge.

(e) If a pyrotechnic capsule is used to discharge the fire extinguishing agent, each container must be installed so that temperature conditions will not cause hazardous deterioration of the pyrotechnic capsule.

4. *SC 23.1201*—Add the requirements of § 23.1201 while deleting “For commuter category airplanes.”

23.1201, Fire Extinguishing System Materials

The following apply:

(a) No material in any fire extinguishing system may react chemically with any extinguishing agent so as to create a hazard.

(b) Each system component in an engine compartment must be fireproof.

Issued in Kansas City, Missouri on December 27, 2006.

John Colomy,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. E6-22647 Filed 1-5-07; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. **FAA-2006-26725**; Directorate Identifier **2006-NM-161-AD**]

RIN 2120-AA64

Airworthiness Directives; Bombardier Model DHC-8-102, -103, and -106 Airplanes and Model DHC-8-200 and DHC-8-300 Series Airplanes

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

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Bombardier Model DHC-8-102, -103, and -106 airplanes and Model DHC-8-200 and DHC-8-300 series airplanes. This proposed AD would require modifying the main landing gear (MLG) and nose landing gear (NLG) handle assemblies for alternate release and the MLG retaining plate. This proposed AD would also require doing a related investigative action and corrective action if necessary. This proposed AD results from reports of broken or damaged MLG and NLG alternate release cables caused by rubbing and fraying at the cable-to-handle interface. We are proposing this AD to prevent breakage of the MLG and NLG alternate release cables, which, if the normal gear extension fails, could result in the inability to extend the MLG or NLG and consequent collapse of the landing gear during ground maneuvers or upon landing.

DATES: We must receive comments on this proposed AD by February 7, 2007.

ADDRESSES: Use one of the following addresses to submit comments on this proposed AD.

- *DOT Docket Web site:* Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.

- *Government-wide rulemaking Web site:* Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.

- *Mail:* Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, room PL-401, Washington, DC 20590.

- *Fax:* (202) 493-2251.

- *Hand Delivery:* Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Contact Bombardier, Inc., Bombardier Regional Aircraft Division, 123 Garratt Boulevard, Downsview, Ontario M3K 1Y5, Canada, for service information identified in this proposed AD.

FOR FURTHER INFORMATION CONTACT: Ezra Sasson, Aerospace Engineer, Systems and Flight Test Branch, ANE-172, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, suite 410, Westbury, New York 11590; telephone (516) 228-7320; fax (516) 794-5531.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to submit any relevant written data, views, or arguments regarding this proposed AD. Send your comments to an address listed in the **ADDRESSES** section. Include the docket number “FAA-2006-26725; Directorate Identifier 2006-NM-161-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the proposed AD. We will consider all comments received by the closing date and may amend the proposed AD in light of those comments.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this proposed AD. Using the search function of that Web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT’s complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477-78), or you may visit <http://dms.dot.gov>.