

of airplanes. 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.

Citation

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 the Eclipse Aviation Corporation Model 500, airplane.

1. *Electronic Engine Control System*

The installation of the electronic engine control system must comply with the requirements of § 23.1309(a) through (e) at Amendment 23–49. The intent of this requirement is not to re-evaluate the inherent hardware reliability of the control itself, but rather determine the effects, including environmental effects addressed in § 23.1309(e), on the airplane systems and engine control system when installing the control on the airplane. When appropriate, engine certification data may be used when showing compliance with this requirement.

Issued in Kansas City, Missouri on February 21, 2002.

Michael Gallagher,

Manager, Small Airplane Directorate, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 23

[Docket No. CE166; Notice No. 23–01–03–SC]

Special Conditions: CAP Aviation, Model CAP 222; Structural Design & Loads Criteria

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed special conditions.

SUMMARY: This notice proposes special conditions for the CAP Aviation Model

No. 222 airplane. This airplane will have a novel or unusual design feature(s) associated with structural design and loads criteria. 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: Comments must be received on or before July 9, 2002.

ADDRESSES: Comments on this proposal may be mailed in duplicate to: Federal Aviation Administration, Regional Counsel, ACE–7, Attention: Rules Docket, Docket No. CE166, 901 Locust, Room 506, Kansas City, Missouri 64106, or delivered in duplicate to the Regional Counsel at the above address. Comments must be marked: Docket No. CE166. Comments may be inspected in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

FOR FURTHER INFORMATION CONTACT: Mr. Mike Reyer, Federal Aviation Administration, Aircraft Certification Service, Small Airplane Directorate, ACE–111, 901 Locust, Kansas City, Missouri, 816–329–4131, fax 816–329–4090.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of these proposed special conditions by submitting such written data, views, or arguments as they may desire. Communications should identify the regulatory docket or notice number and be submitted in duplicate to the address specified above. All communications received on or before the closing date for comments will be considered by the Administrator. The proposals described in this notice may be changed in light of the comments received. All comments received will be available in the Rules Docket for examination by interested persons, both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerning this rulemaking will be filed in the docket. Persons wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include with those comments a self-addressed, stamped postcard on which the following statement is made: “Comments to CE166.” The postcard will be date stamped and returned to the commenter.

Background

On January 28, 2001, CAP Aviation applied for a type certificate for their new Model CAP 222. The CAP 222 is a two-place tandem seat, all carbon fiber composite made (wing and fuselage) low wing with no high lift devices. It is a fixed gear, unpressurized MTOW 1,600 pound airplane with aerobatic capabilities from –10g to +10g and a roll rate of 500 degrees per second. A single 200 horsepower Textron-Lycoming AEIO–360–A1E engine and two-bladed MT propeller, type MTV–12–B–C/C–183–17e, comprise the propulsion system.

Since the airplane is designed for high performance acrobatic maneuvers with a design flight envelope of +10g, special conditions are required to address the expanded flight envelope. Current 14 CFR Part 23 acrobatic category design requires that the flight envelope shall not be less than +6.0g, –3.0g.

Type Certification Basis

Under the provisions of 14 CFR § 21.17, § 21.29, and § 21.183(c), CAP Aviation must show that the CAP Model 222 meets the applicable provisions of part 23, as amended by Amendments 23–1 through 23–53; 14 CFR part 36, effective December 1, 1969, including amendments 36–1 through the amendment effective on the date of type certification. In addition, the certification basis includes exemptions, if any, equivalent level of safety findings, if any, and the special conditions adopted by this rulemaking action.

If the Administrator finds that the applicable airworthiness regulations (i.e., part 23) do not contain adequate or appropriate safety standards for the CAP Model 222 because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions, as appropriate, become part of the type certification basis in accordance with § 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 novel or unusual design feature, the special conditions would also apply to the other model under the provisions of § 21.101(a)(1).

Novel or Unusual Design Features

The CAP Model 222 will incorporate the following novel or unusual design features:

Structural Design and Loads Criteria

An analysis of world championship acrobatic sequences shows a significant number of occurrences of high load factors up to $\pm 10g$.

Wing

For airplanes capable of performing "flick rolls" (snap rolls), the wing should be designed for 100/0 percent maximum wing load distribution, in addition to the roll maneuver criteria of § 23.349(b), unless lower values can be substantiated. These load conditions are based on a V_A and $C_{r\max}$ corresponding to the selected positive 10g design load factor. Unbalanced aerodynamic moments about the center of gravity must be reacted in a rational or conservative manner, considering the principal masses furnishing the reacting inertia forces. Furthermore, consideration should be given to the fact that pilots may make significant aileron control input above V_A ; therefore, a warning prohibiting unrestricted control system input above V_A should be included in the Pilot Operating Handbook/Airplane Flight Manual (POH/AFM) and on a cockpit placard.

Empennage

For airplanes capable of performing "flick rolls" (snap rolls), the empennage should be designed for 100/0 percent maximum load distribution unless lower values can be substantiated. The use of rational flight test results is preferred as a basis for design. Pilots may make significant rudder and elevator controls inputs above V_A , therefore, adequate pilot warnings such as discussed above are necessary.

Rational chord load distributions should be used for the vertical and horizontal tail surfaces. These may be developed by flight test data, wind tunnel test data, theoretical analysis, or a combination thereof.

Gyroscopic Forces

Since the airplane will be performing maneuvers that generate high pitch and yaw rates, the airplane, including the engine, engine mount, and fuselage attachment, must be designed for rational gyroscopic forces generated in specific acrobatic maneuvers.

Fatigue

The fatigue load should be developed from representative sequences and cross country flight profiles.

Applicability

As discussed above, these special conditions are applicable to the Model CAP 222. Should CAP Aviation apply at a later date 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 under the provisions of § 21.101(a)(1).

Conclusion

This action affects only certain novel or unusual design features on the CAP Model 222 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.

Citation

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 11.28 and 11.29(b).

The Proposed Special Conditions

Accordingly, the Federal Aviation Administration (FAA) proposes the following special conditions as part of the type certification basis for CAP Model 222 airplanes.

Structural Design and Loads Criteria

1. *Wing.* For the "flick roll" condition in § 23.347(b), a 100/0 percent wing load distribution should be used for wing design. Accurate flight test load measurements may be used in lieu of the 100/0 percent maximum airload distribution. A notation shall be placed in the Limitations Section of the POH/AFM, and an appropriate warning placard shall be installed on the main instrument panel prohibiting full or abrupt control inputs above V_A .

2. *Empennage.* The horizontal tail and its attachments to the fuselage, and the aft fuselage must be designed for the worst case load condition using either accurate flight test load measurements or an acceptable analytical method. Unsymmetrical load combinations acting on the wing and on the horizontal tail are assumed to be turning the airplane in the same direction around the roll axis. A notation shall be placed in the limitation section of the POH/AFM, and an appropriate warning placard shall be installed on the main instrument panel prohibiting full or abrupt control inputs above V_A . Rational chord load distributions should be used for the vertical and horizontal tail surfaces. Appropriate data must be used to develop unsymmetrical loading of the horizontal tail surface and as a basis for fuselage torsion. This must include

simultaneous application of full rudder and elevator input.

3. *Gyroscopic Forces.* The airplane, including the engine, engine mount, and fuselage attachment, must be designed for rational gyroscopic forces generated in acrobatic maneuvers.

4. *Fatigue.* Representative acrobatic sequences and cross-country flight profiles must be used in establishing a rational fatigue load spectrum.

Issued in Kansas City, Missouri on February 21, 2002.

Michael Gallagher,

Manager, Small Airplane Directorate, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 92-ANE-56-AD]

RIN 2120-AA64

Airworthiness Directives; Textron Lycoming Division, AVCO Corporation Fuel Injected Reciprocating Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes the superseding of an existing airworthiness directive (AD), applicable to certain Textron Lycoming fuel injected reciprocating engines, that currently requires inspection, and replacement if necessary, of externally mounted fuel injector fuel lines. Since the issuance of the existing AD, additional engine series have been identified with the potential for the same problem and necessitate being included in the list of Textron Lycoming fuel injected reciprocating engine series, to the AD's applicability. This proposal is prompted by the need to ensure that the additional Textron Lycoming fuel injected engine series listed in this proposed rule receive the same inspections as series covered by the current AD. The actions specified by the proposed AD are intended to prevent failure of the fuel injector fuel lines allowing fuel to spray into the engine compartment, resulting in an engine fire.

DATES: Comments must be received by May 10, 2002.

ADDRESSES: Submit comments to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules