

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2008-1232; Directorate Identifier 2008-CE-070-AD; Amendment 39-15747; AD 2008-24-07]

RIN 2120-AA64

#### Airworthiness Directives; Eclipse Aviation Corporation Model EA500 Airplanes

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

**ACTION:** Final rule; request for comments.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Eclipse Aviation Corporation (Eclipse) Model EA500 airplanes equipped with a Pratt and Whitney Canada, Corp. (PWC) PW610F-A engine. This AD requires you to incorporate operating limitations into Section 2, Limitations, of the airplane flight manual (AFM). This AD results from several incidents of engine surge. We are issuing this AD to prevent hard carbon buildup on the static vane, which could result in engine surges. Engine surges may result in a necessary reduction in thrust and decreased power for the affected engine. In some cases, this could result in flight and landing under single-engine conditions.

**DATES:** This AD becomes effective on December 4, 2008.

We must receive any comments on this AD by January 23, 2009.

**ADDRESSES:** Use one of the following addresses to comment on this AD.

- 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.

To view the comments to this AD, go to <http://www.regulations.gov>. The docket number is FAA-2008-1232; Directorate Identifier 2008-CE-070-AD.

**FOR FURTHER INFORMATION CONTACT:** Mitchell Soth, Flight Test Engineer, 2601 Meacham Blvd., Fort Worth, Texas 76137; telephone: (817) 222-5104; fax: (817) 222-5960.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

While in cruising flight at 40,000 feet altitude, an Eclipse EA500 airplane experienced a shudder from the right engine. This was followed by a "RT ENGINE EXCEEDANCE" Crew Alerting System (CAS) message. The crew reduced the throttle to idle and the shudder disappeared. The right engine remained at idle until approximately 10,000 feet altitude. The crew increased the power on the right engine and again felt the shudder. The crew reduced the power on the right engine to idle and landed without incident using single-engine procedures. PWC did a borescope inspection and found carbon buildup on the static vane, which caused the engine surging.

When the PW610F-A engine is operated above 37,000 feet altitude, for over an hour, and with high bleed flow, hard carbon forms due to high local fuel air ratio near the combustor wall. The hard carbon may break loose and obstruct one of the high pressure turbine vane gas path passages, thus decreasing the surge margin to the point where engine surging occurs.

There have been several reports of engine surges that have required reduced power, and, in some cases, the engine power was unrecoverable and remained at reduced power for the remainder of the flight.

This condition, if not corrected, could result in hard carbon buildup on the static vane, which could result in engine surges. Engine surges may result in a necessary reduction in thrust and decreased power for the affected engine. In some cases, this could result in flight and landing under single-engine conditions.

### **FAA's Determination and Requirements of This AD**

We are issuing this AD because we evaluated all the information and determined the unsafe condition described previously is likely to exist or develop on other products of the same type design. This AD requires you to incorporate operating limitations into Section 2, Limitations, of the AFM.

The PW610F-A engines are currently only installed in the Eclipse Model EA500 airplanes. If these engines were installed in other airplanes, we would consider immediate AD action on those airplanes since the engine would be of the same type design and the unsafe condition could exist or develop in products of the same type design.

The FAA considers the altitude limitation to be interim action. The PWC PW610F-A engine is certificated in Canada and is certificated as a foreign type validated engine under FAA TCDS E00074EN. The FAA understands that Transport Canada (the airworthiness authority for Canada) and PWC are considering potential actions to address the engine aspects of this condition. In the meantime, the FAA is issuing this AD on the Eclipse Model EA500 to mandate an altitude limitation.

### **FAA's Determination of the Effective Date**

An unsafe condition exists that requires the immediate adoption of this AD. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because hard carbon buildup on the static vane could result in engine surges. Engine surges may require decreased power for the affected engine and, in some cases, flight and landing under single-engine conditions. Therefore, we determined that notice and opportunity for public comment before issuing this AD are impracticable and that good cause exists for making this amendment effective in fewer than 30 days.

## Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and an opportunity for public comment. We invite you to send any written relevant data, views, or arguments regarding this AD. Send your comments to an address listed under the ADDRESSES section. Include the docket number "FAA-2008-1232; Directorate Identifier 2008-CE-070-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the AD. We will consider all comments received by the closing date and may amend the AD in light 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 concerning 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 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 this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under 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 that contains the AD, the regulatory evaluation, any comments received, and other information 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 Docket Office (telephone (800) 647-5527) is located at the street address stated 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, 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 airworthiness directive (AD):

**SUPERSEDED**



**2008-24-07 Eclipse Aviation Corporation:** Amendment 39-15747; Docket No. FAA-2008-1232; Directorate Identifier 2008-CE-070-AD.

**Effective Date**

- (a) This AD becomes effective on December 4, 2008.

**Affected ADs**

- (b) None.

**Applicability**

- (c) This AD applies to Model EA500 airplanes, all serial numbers, that are:
  - (1) Equipped with a Pratt and Whitney Canada, Corp. PW610F-A engine; and
  - (2) Certificated in any category.

**Unsafe Condition**

(d) This AD is the result of several incidents of engine surge. We are issuing this AD to prevent hard carbon buildup on the static vane, which could result in engine surges. Engine surges may result in a necessary reduction in thrust and decreased power for the affected engine. In some cases, this could result in flight and landing under single-engine conditions.

**Compliance**

(e) Prior to further flight, unless already done, incorporate the following language into Section 2, Limitations, of your airplane flight manual (AFM): "Per AD 2008-24-07, LIMIT THE MAXIMUM OPERATING ALTITUDE TO 37,000 FEET (11277M) PRESSURE ALTITUDE."

(1) A person holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7) may insert the operating limitations into Section 2, Limitations, of the AFM. Make an entry into the aircraft logbook showing compliance with this portion of the AD in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).

(2) You may incorporate paragraph (e) of this AD into Section 2, Limitations, of your AFM to comply with this AD.

**Alternative Methods of Compliance (AMOCs)**

(f) The Manager, Fort Worth Airplane Certification Office, 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: Mitchell Soth, Aerospace Engineer, 2601 Meacham Blvd., Fort Worth, Texas 76137; telephone: (817) 222-5104; fax: (817) 222-5960. 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.

Issued in Kansas City, Missouri, on November 17, 2008.

Kim Smith,  
Manager Small Airplane Directorate,  
Aircraft Certification Service.

SUPERSEDED