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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2007-28656; Directorate Identifier 2007-NE-31-AD; Amendment 39-15280; AD 2007-24-14]**

**RIN 2120-AA64**

**Airworthiness Directives; Hartzell Propeller Inc. Model HC-E5N-3( ), HC-E5N-3( )(L), and HC-E5B-5( ) Propellers**

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

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

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for Hartzell Propeller Inc. Model HC-E5N-3( ), HC-E5N-3( )(L), and HC-E5B-5( ) propellers. This AD requires a onetime eddy current inspection of the propeller hub mounting bolt holes and replacement of the propeller hub if cracked. This AD results from the discovery of a five-bladed propeller hub with a large crack on the mounting flange of the hub. We are issuing this AD to prevent propeller hub failure, blade separation, damage to the airplane, and possible loss of airplane control.

**DATES:** This AD becomes effective December 14, 2007. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of December 14, 2007.

We must receive any comments on this AD by January 28, 2008.

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

- Federal eRulemaking Portal: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- Mail: U.S. Docket Management Facility, Department of Transportation, 1200 New Jersey Avenue, SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: (202) 493-2251.

Contact Hartzell Propeller Inc., Technical Publications Department, One Propeller Place, Piqua, OH 45356; telephone (937) 778-4200; fax (937) 778-4391, for the service information identified in this AD.

**FOR FURTHER INFORMATION CONTACT:** Tim Smyth, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, Small Airplane Directorate, 2300 East Devon Avenue, Des Plaines, IL 60018; e-mail: timothy.smyth@faa.gov; telephone (847) 294-7132; fax (847) 294-7834.

**SUPPLEMENTARY INFORMATION:** Recently, a Piaggio P-180 airplane experienced a significant vibration in flight, from one of the propellers. The Hartzell model HC-E5N-3( )(L) propeller assembly was removed and examined. Inspection of the propeller assembly revealed a significant crack in the propeller hub. Although the exact cause of the crack is unknown, a major factor appears to be a pre-existing defect in one of the propeller mounting bolt holes. This defect may cause a crack to grow to catastrophic failure. Operating the propeller in an rpm range restricted by the airplane operating limitations may accelerate the hub crack. Acceleration of the propeller hub crack may also be due to operation beyond the airplane's operating limitations when in ground idle without the propellers feathered, or used in maximum reverse. We determined that the hubs at risk are in two populations. The first population is those hubs with unknown hours, or with between 1,800 and 4,500 hours time-in-service (TIS). The second population is all other hubs with fewer than 1,800 or more than 4,500 hours TIS. This condition, if not corrected, could result in propeller hub cracks, blade separation, damage to the airplane, and possible loss of airplane control.

### **Relevant Service Information**

We have reviewed and approved the technical contents of Hartzell Propeller Inc. Service Bulletin (SB) No. HC-SB-61-295, Revision 2, dated August 1, 2007, that describes procedures for a onetime eddy current inspection of the propeller hub mounting bolt holes and replacement of the propeller hub if cracked.

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

The unsafe condition described previously is likely to exist or develop on other Hartzell Propeller Inc. Model HC-E5N-3( ), HC-E5N-3( )(L), and HC-E5B-5( ) propellers of the same type design. For that reason, we are issuing this AD to prevent propeller hub failure, blade separation, damage to the airplane, and possible loss of airplane control. You must use the service information described previously to perform the actions required by this AD.

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

Since an unsafe condition exists that requires the immediate adoption of this AD, we have found that notice and opportunity for public comment before issuing this AD are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

### **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to send us any written relevant data, views, or arguments regarding this AD. Send your comments to an address listed under ADDRESSES. Include "AD Docket No. FAA-2007-28656; Directorate Identifier 2007-NE-31-AD" in the subject line of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify it.

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 with FAA personnel concerning this AD. Using the search function of the Federal Docket Management System 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).

### **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 this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is the same as the Mail address provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

### **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 have 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 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 summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary at the address listed under ADDRESSES.

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

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

### **Adoption of the Amendment**

Under the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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:



**2007-24-14 Hartzell Propeller Inc.:** Amendment 39-15280. Docket No. FAA-2007-28656; Directorate Identifier 2007-NE-31-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective December 14, 2007.

**Affected ADs**

(b) None.

**Applicability**

(c) This AD applies to Hartzell Propeller Inc. model HC-E5N-3( ), HC-E5N-3( )(L), and HC-E5B-5( ) propellers. Hartzell Propeller Inc. model HC-E5N-3( ) and HC-E5N-3( )(L) propellers are installed on, but not limited to, Piaggio P-180 Avanti airplanes with propeller serial numbers (SNs) up to and including HF229 or KU92, except those SNs listed in the following Table 1. Hartzell Propeller Inc. HC-E5B( ) propellers are installed on Grumman S-2 Tracker airplanes with propeller SNs up to and including HN14.

**Table 1: Propeller SNs Not Affected by This AD**

|                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HC-E5N-3( )L</b>                                                                                                                                                                                                                                                                                                                                               |
| HF4, HF5, HF6, HF7, HF18, HF20, HF26, HF28, HF30, HF34, HF45, HF50, HF52, HF74, HF76, HF87, HF93, HF94, HF97, HF101, HF109, HF121, HF122, HF126, HF130, HF133, HF135, HF137, HF140, HF147, HF149, HF152, HF153, HF156, HF158, HF164, HF165, HF179, HF183, HF184, HF188, HF190, HF195, HF205, HF213, HF215, HF225, HF226, HF230, HF231, HF232, HF233, HF234, HF235 |
| <b>HC-E5N-3( )</b>                                                                                                                                                                                                                                                                                                                                                |
| KU1, KU3, KU14, KU15, KU16, KU19, KU34, KU41, KU45, KU51, KU57, KU69, KU74, KU79, KU84, KU86, KU87, KU89, KU93, KU94, KU95, KU96, KU103                                                                                                                                                                                                                           |
| <b>HC-E5B-5( )</b>                                                                                                                                                                                                                                                                                                                                                |
| HN15                                                                                                                                                                                                                                                                                                                                                              |

**Unsafe Condition**

(d) This AD results from the discovery of a five-bladed propeller hub with a large crack on the mounting flange of the hub. We determined that the hubs at risk are in two populations. The first population is those hubs with unknown hours, or with between 1,800 and 4,500 hours time-in-service (TIS). The second population is all other hubs with fewer than 1,800 or more than 4,500 hours TIS.

We are issuing this AD to prevent propeller hub failure, blade separation, damage to the airplane, and possible loss of airplane control.

## **Compliance**

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

## **Propeller Hub Inspection**

(f) Using Hartzell Service Bulletin (SB) HC-SB-61-295, Revision 2, dated August 1, 2007, do a onetime eddy current inspection of the propeller mounting holes and replace the propeller hub if any crack is found. Inspect as follows:

(1) If propeller hub TIS is unknown, or more than 1,800 hours but fewer than 4,500 hours, inspect the mounting holes within 12 calendar months, or within the next 150 hours TIS, or at the next scheduled airframe "A" check inspection.

(2) If the propeller hub TIS is 1,800 hours or fewer, or 4,500 hours or more, inspect the mounting holes within 12 calendar months, or within 600 hours TIS, or at the next scheduled airframe "B" check inspection, whichever comes first.

## **Alternative Methods of Compliance**

(g) The Manager, Chicago Aircraft Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

## **Related Information**

(h) Contact Tim Smyth, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, Small Airplane Directorate, 2300 East Devon Avenue, Des Plaines, IL 60018; e-mail: timothy.smyth@faa.gov; telephone (847) 294-7132; fax (847) 294-7834, for more information about this AD.

## **Material Incorporated by Reference**

(i) You must use Hartzell Service Bulletin HC-SB-61-295, Revision 2, dated August 1, 2007, to perform the inspection required by this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Hartzell Propeller Inc., Technical Publications Department, One Propeller Place, Piqua, OH 45356; telephone (937) 778-4200; fax (937) 778-4391, for a copy of this service information. You may review copies at the FAA, New England Region, 12 New England Executive Park, Burlington, MA 01803; 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 Burlington, Massachusetts, on November 21, 2007.  
Peter A. White,  
Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.  
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