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[Page 72915-72917]  
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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2007-28876; Directorate Identifier 2000-NE-08-AD; Amendment 39-15311; AD 2007-26-09]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Hartzell Propeller Inc. Compact Series Propellers**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is superseding an existing airworthiness directive (AD) for all Hartzell Propeller Inc. models ( )HC-( )Y( )-( ) compact series, constant speed or feathering propellers with Hartzell manufactured "Y" shank aluminum blades. That AD currently requires initial blade inspections, with no repetitive inspections; rework of all "Y" shank aluminum blades including cold rolling of the blade shank retention radius, blade replacement and modification of pitch change mechanisms for certain propeller models; and changing the airplane operating limitations with specific models of propellers installed. This AD requires the same actions but clarifies certain areas of the compliance, and updates a certain service bulletin (SB) reference to the most recent SB. This AD results from operators requesting clarification of certain portions of AD 2002-09-08. We are issuing this AD to prevent failure of the propeller blade from fatigue cracks in the blade shank radius, which can result in damage to the airplane and loss of airplane control.

**DATES:** This AD becomes effective January 30, 2008. The Director of the Federal Register previously approved the incorporation by reference of certain publications listed in the regulations as of June 13, 2002 (67 FR 31113, May 9, 2002). The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of January 30, 2008.

**ADDRESSES:** You can get the service information identified in this AD from Hartzell Propeller Inc. Technical Publications Department, One Propeller Place, Piqua, OH 45356; telephone (937) 778-4200; fax (937) 778-4391.

The Docket Operations office is located at Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue, SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

**FOR FURTHER INFORMATION CONTACT:** Tim Smyth, Senior Aerospace Engineer, Chicago Aircraft Certification Office, FAA, Small Airplane Directorate, 2300 East Devon Avenue, Des Plaines, IL 60018-4696; e-mail: timothy.smyth@faa.gov; telephone (847) 294-8110; fax (847) 294-7132.

**SUPPLEMENTARY INFORMATION:** The FAA proposed to amend 14 CFR part 39 by superseding AD 2002-09-08, Amendment 39-12741 (67 FR 31113, May 9, 2002) with a proposed AD. The proposed AD applies to Hartzell Propeller Inc. models ( )HC-( )Y ( )-( ) compact series, constant speed or feathering propellers with Hartzell manufactured "Y" shank aluminum blades. We published the proposed AD in the Federal Register on August 14, 2006 (71 FR 46413). That action proposed to require the same actions as AD 2002-09-08, but would clarify certain areas of the compliance and would update a certain SB reference to the most recent SB.

### **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 provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

### **Comments**

We provided the public the opportunity to participate in the development of this AD. We have considered the comment received.

### **Incorporate Service Documents by Reference and Publish Them in the Document Management System**

The Modification and Replacement Parts Association requests that all service documents deemed essential to the accomplishment of the AD be incorporated by reference into the regulatory instrument, and published in the Docket Management System. We partially agree. We have incorporated pertinent service material into the regulatory section of this AD. However, at this time, the FAA does not post service material on the Federal Docket Management System. We are in the process of reviewing issues surrounding the posting of service bulletins on the Federal Docket Management System as part of an AD docket. Once we have thoroughly examined all aspects of this issue and have made a final determination, we will consider whether our current practice needs to be revised.

### **Format Changes**

We changed the propeller blade shank cold rolling information from being a note, to paragraphs. We also added paragraphs to the alternative methods of compliance, to make the information more readable.

### **Conclusion**

We have carefully reviewed the available data, including the comment received, and determined that air safety and the public interest require adopting the AD with the changes described previously.

## **Costs of Compliance**

We estimate that this AD will affect 35,750 propellers installed on airplanes of U.S. registry. We expect this AD will cost about \$700 per propeller. Total cost to U.S. operators for this AD would be about \$25.025 million. However, we also expect that all of the affected propellers should have already been inspected to comply with the existing AD's requirements to inspect, and rework or replace the aluminum blades. Therefore, we expect that this AD will have no additional cost.

## **Docket Number Change**

We are transferring the docket for this AD to the Federal Docket Management System as part of our on-going docket management consolidation efforts. The new Docket No. is FAA-2007-28876. The old Docket No. became the Directorate Identifier, which is 2000-NE-08-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 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 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**

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration 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 removing Amendment 39-12741 (67 FR 31113, May 9, 2002), and by adding a new airworthiness directive, Amendment 39-15311, to read as follows:



**2007-26-09 Hartzell Propeller Inc.:** Amendment 39-15311. Docket No. FAA-2007-28876; Directorate Identifier 2000-NE-08-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective January 30, 2008.

**Affected ADs**

(b) This AD supersedes AD 2002-09-08, Amendment 39-12741.

**Applicability**

(c) This AD applies to all Hartzell Propeller Inc. models ( )HC-( )Y(-)( ) compact series constant speed or feathering propellers with Hartzell manufactured "Y" shank aluminum blades. These propellers are used on, but not limited to, the following airplanes:

<b>Manufacturer</b>	<b>Airplane Model</b>
Aermacchi S.p.A. (formerly Siai-Marchetti)	S-208
Aero Commander	200B and 200D
Aerostar	600
Beech	24, 35, 36, 45, 55, 56TC, 58, 60, and 95
Bellanca	14 and 17 series
Cessna	182 and 188
Embraer	EMB-200A
Maule	M5
Mooney	M20 and M22
Pilatus Britten Norman, or Britten Norman	BN-2, BN-2A, and BN-2A-6
Piper	PA-23, PA-24, PA-28, PA-30, PA-31, PA-32, PA-34, PA-36, and PA-39
Pitts	S-1T and S-2A
Rockwell	112, 114, 200, 500, and 685 series

(d) The parentheses appearing in the propeller model number indicates the presence or absence of an additional letter(s) that varies the basic propeller model. This AD applies regardless of whether these letters are present or absent in the propeller model designation.

## Unsafe Condition

(e) This AD results from operators requesting clarification of certain portions of AD 2002-09-08. We are issuing this AD to prevent failure of the propeller blade from fatigue cracks in the aluminum blade shank radius, which can result in damage to the airplane and loss of airplane control.

## 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.

(g) If the propeller maintenance records show compliance with AD 77-12-06R2, then compliance was previously done and no further action is required.

(h) Propellers are considered in compliance with the one-time inspection and rework requirements only, of this AD if:

- (1) All blades are serial number D47534 and above, or
- (2) All blades are identified with the letters "PR" or "R" which are ink-stamped on the camber side, or the letters "RD" which are metal-stamped on the blade butt.

## Models ( )HC-( )Y( ) Compact Series "Y" Shank Propellers

(i) If propeller models ( )HC-( )Y( ) have not been inspected and reworked in accordance with AD 77-12-06R2, then before further flight, do a one-time action to remove, inspect, rework, or replace blades if necessary using Hartzell Service Bulletin (SB) No. 118A, dated February 15, 1977.

## Propeller Blade Shank Cold Rolling

(j) One requirement in Hartzell SB No. 118A is the cold rolling of the propeller blade shank.

(1) Cold rolling is a critical requirement in the prevention of cracks in the blade. Propeller repair shops must obtain and maintain proper certification to perform the cold rolling procedure.

(2) For a current list of propeller overhaul facilities approved to perform the blade shank cold rolling procedure, contact Hartzell Product Support, telephone (937) 778-4200.

(3) Not all propeller repair facilities have the equipment to properly perform a cold roll of the blade shanks.

(4) In addition, any rework in the blade shank area will also necessitate the cold rolling of the blade shank area, apart from the one-time cold rolling requirement of this AD.

## Instrument Panel Modifications

(k) If airplanes with propeller models ( )HC-C2YK-( )/( )7666A-( ), installed on (undamped) 200 or more horsepower Lycoming IO-360 series engines, have not been modified using AD 77-12-06R2, then modify the airplane instrument panel according to the following subparagraphs before further flight. Airplanes include, but are not limited to, Mooney M20E and M20F (normal category), Piper PA-28R-200 (normal category), and Pitts S-1T and S-2A (acrobatic category).

(1) For normal category airplanes, before further flight, remove the present vibration placard and affix a new placard near the engine tachometer that states:

"Avoid continuous operation:  
Between 2,000 and 2,350 rpm."

(2) For utility and acrobatic category airplanes, before further flight, remove the present vibration placard and affix a new placard near the engine tachometer that states:

"Avoid continuous operation:  
Between 2,000 and 2,350 rpm.  
Above 2,600 rpm in acrobatic flight."

(3) For normal category airplanes, re-mark the engine tachometer face or bezel with a red arc for the restricted engine speed range, between 2,000 and 2,350 rpm.

(4) For acrobatic and utility airplanes, re-mark the engine tachometer face or bezel with a red arc for each restricted engine speed range, i.e., between 2,000 and 2,350 rpm and between 2,600 and 2,700 rpm (red line).

### **Models ( )HC-C2YK-( )-( )/( )-( )8475-( )-( ) or ( )-( )8477-( )-( ) Propellers**

(1) If propeller models ( )HC-C2YK-( )-( )/( )-( )8475-( )-( ) or ( )-( )8477-( )-( ) have not been inspected and reworked in accordance with AD 74-15-02, then do the following maintenance before further flight.

(1) Remove propeller from airplane.

(2) Modify pitch change mechanism, and replace blades with equivalent model blades prefixed with letter "F" using Hartzell Service Letter No. 69, dated November 30, 1971 and Hartzell SB No. 101D, dated December 19, 1974.

(3) Inspect and repair or replace, if necessary, using Hartzell SB No. 118A, dated February 15, 1977.

### **Alternative Methods of Compliance**

(m) 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.

(n) Alternative methods of compliance for Hartzell SB No. 118A, dated February 15, 1977, are: Hartzell SB No. 118B, November 28, 1977; SB No. 118C, May 13, 1983; SB No. 118D, March 25, 1991; SB No. HC-SB-61-118E, December 14, 2001; SB No. HC-SB-61-118 revision F, dated August 15, 2002, and Hartzell Manual 133C.

(o) An alternative method of compliance to Hartzell SB No. 101D, dated December 19, 1974, is Hartzell Manual 133C.

(p) No adjustment in the compliance time is allowed.

### **Related Information**

(q) Contact Tim Smyth, Senior Aerospace Engineer, Chicago Aircraft Certification Office, FAA, Small Airplane Directorate, 2300 East Devon Avenue, Des Plaines, IL 60018-4696; e-mail: timothy.smyth@faa.gov; telephone (847) 294-7132; fax (847) 294-7834, for more information about this AD.

### **Material Incorporated by Reference**

(r) You must use the service information specified in Table 1 of this AD to perform the actions required by this AD. The Director of the Federal Register previously approved the incorporation by

reference of the documents listed in Table 1 of this AD in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 on June 13, 2002. 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 service information copies at the FAA, New England Region, 12 New England Executive Park, Burlington, MA; 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>.

**Table 1 – Incorporation by Reference**

<b>Hartzell Service Information</b>	<b>Page</b>	<b>Revision</b>	<b>Date</b>
SB No. 101D	All	D	December 19, 1974
SB No. 118A	All	A	February 15, 1977
SL No. 69	All	1	November 30, 1971

Issued in Burlington, Massachusetts, on December 17, 2007.

Peter A. White,

Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.

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