

# **DEPARTMENT OF TRANSPORTATION**

## **Federal Aviation Administration**

**14 CFR Part 39 [61 FR 39309 NO. 146 07/29/96]**

**Docket No. 96-ANE-18; Amendment 39-9697; AD 96-15-04**

### **Hartzell Propeller Inc. Models HC-B3TN, HC-B5MP, HC-E4A, and HC-D4N Series Propellers**

**AGENCY:** Federal Aviation Administration, DOT.

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

**SUMMARY:** This amendment adopts a new airworthiness directive (AD) that is applicable to certain propeller blades, identified by serial number, installed on Hartzell Propeller Inc. HC-B3TN, HC-B5MP, HC-E4A, and HC-D4N series propellers. This action requires, within specified hours time in service after the effective date of this AD, a one-time fluorescent dye penetrant inspection of a twelve-inch long area on both the face and camber sides of propeller blade shanks for forging flaws or cracks, and replacement of defective propeller blades with serviceable parts. In addition, this action requires this inspection prior to further flight for propellers that experience sudden or unusual vibration. This amendment is prompted by a report of an inflight propeller blade separation. The actions specified in this AD are intended to prevent propeller blade separation caused by propeller blade shank cracks emanating from forging flaws, which could result in loss of control of the aircraft.

**DATES:** Effective July 29, 1996.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 96-ANE-18, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may also be submitted to the Rules Docket by using the following Internet address: "epd-adcomments@mail.hq.faa.gov". All comments must contain the Docket No. in the subject line of the comment.

The service information referenced in this AD may be obtained from Hartzell Propeller Inc., One Propeller Place, Piqua, OH 45356-2634, ATTN: Product Support; telephone (513) 778-4388, fax (513) 778-4321. This information may be examined at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Tomaso DiPaolo, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, Small Airplane Directorate, 2300 East Devon Ave., Des Plaines, IL 60018; telephone (847) 294-7031, fax (847) 294-7834.

**SUPPLEMENTARY INFORMATION:** The Federal Aviation Administration (FAA) received a report of an inflight blade separation of a Hartzell Propeller Inc. Model HC-D4N-5C/D9327K propeller installed on a Short Brothers plc S-312 Tucano military aircraft in the United Kingdom. The investigation revealed that the propeller blade separation resulted from a crack emanating

from a forging flaw in the propeller blade. This condition, if not corrected, could result in propeller blade separation caused by propeller blade shank cracks emanating from forging flaws, which could result in loss of control of the aircraft.

The FAA has reviewed and approved the technical contents of Hartzell Propeller Inc. Alert Service Bulletin (ASB) No. HC-ASB-61-220, dated July 8, 1996, that contains a list of affected propellers by model and serial number, and describes procedures for a one-time fluorescent dye penetrant inspection of a twelve-inch long area on both the face and camber sides of propeller blade shanks for forging flaws or cracks. The propeller blades identified by serial numbers are limited to those manufactured between March 1992 and June 1996, and represent a group of aluminum propeller blade designs, which are: D9327( ), D9512A( ), LT10673( ), LT10673( )-2Q, M10282( )+6, M10876( ), LT10876( )-2Q, and E10477K.

Since an unsafe condition has been identified that is likely to exist or develop on other propeller blades manufactured from the same forging die and same forging process, this AD is being issued to prevent propeller blade separation due to propeller blade shank cracks emanating from forging flaws, which could result in loss of control of the aircraft. This AD requires a one-time fluorescent dye penetrant inspection of a twelve-inch long area on both the face and camber sides of propeller blade shanks for forging flaws or cracks, and replacement of flawed propeller blades with serviceable parts. For propellers installed on agricultural or acrobatic aircraft, such as certain Air Tractor, Inc., Ayres Corporation, Norman, Pilatus Aircraft Ltd., PZL, and Short Brothers Ltd. aircraft, compliance is required within 10 hours TIS after the effective date of this AD. These agricultural and acrobatic aircraft operate in an environment that subjects the propeller to high loads. For all other propellers, regardless of aircraft installation, compliance is required within 60 hours TIS after the effective date of this AD. In addition, this AD requires the fluorescent dye penetrant inspection prior to further flight for propellers that have not been inspected in accordance with this AD, which experience a sudden or unusual vibration. This compliance prior to further flight is necessary because a timely investigation of such conditions can prevent propeller failure. The actions are required to be accomplished in accordance with the ASB described previously.

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

### **Comments Invited**

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified under the caption "ADDRESSES." All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for

examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 96-ANE-18." The postcard will be date stamped and returned to the commenter.

The regulations adopted herein will not have substantial direct effects 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. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption "ADDRESSES."

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

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.  
Adoption of the Amendment

Accordingly, pursuant to 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 USC 106(g), 40113, 44701.

#### **§39.13 - [AMENDED]**

2. Section 39.13 is amended by adding the following new airworthiness directive:

# AIRWORTHINESS DIRECTIVE

Aircraft Certification Service  
Washington, DC



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

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The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference FAR Subpart 39.3).

**96-15-04 Hartzell Propeller Inc.:** Amendment 39-9697. Docket 96-ANE-18.

Applicability: Hartzell Propeller Inc. HC-B3TN, HC-B5MP, HC-E4A, and HC-D4N series propellers, equipped with propeller blades identified by serial number in Hartzell Propeller Inc. Alert Service Bulletin (ASB) No. HC-ASB-61-220, dated July 8, 1996. The propeller blades identified by serial numbers are limited to those manufactured between March 1992 and June 1996, and represent a group of aluminum propeller blade designs, which are: D9327( ), D9512A( ), LT10673( ), LT10673( )-2Q, M10282( )+6, M10876( ), LT10876( )-2Q, and E10477K. These propellers are installed on but not limited to the following aircraft:

Aerospatiale Nord 262 series (STC modified),  
Air Tractor, Inc. AT-502, AT-503, and AT-802 series,  
Antonov AN-28 series,  
Ayres S2R series,  
McDonnell Douglas DC-3 series (STC modified),  
Norman Aeroplane NAC 6 series,  
Pilatus Aircraft Ltd. PC-7 mk II, PC-9, and PC-12 series,  
PZL PZL-M18,  
Short Brothers plc S-312 Tucano (military), SD3, and C-23 (military) series.  
Twin Commander Aircraft Corp. 690 and 695 series (STC modified).

NOTE 1: The above is not an exhaustive list of aircraft which may contain the affected Hartzell Propeller Inc. Models HC-B3TN, HC-B5MP, HC-E4A, and HC-D4N series propellers because of installation approvals made by, for example, Supplemental Type Certificate or field approval under FAA Form 337 "Major Repair and Alteration." It is the responsibility of the owner, operator, and person returning the aircraft to service to determine if an aircraft has an affected propeller.

NOTE 2: This airworthiness directive (AD) applies to each propeller identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For propellers that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration,

or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent propeller blade separation caused by propeller blade shank cracks emanating from forging flaws, which could result in loss of control of the aircraft, accomplish the following:

(a) For propellers installed on agricultural or acrobatic aircraft, such as Air Tractor, Inc., AT-502A, AT-503, AT-802; Ayres Corporation S2R-T65, S2RHG-265; Norman Aeroplane NAC 6; Pilatus Aircraft Ltd. PC-7 mk II, PC-9; PZL PZL-M18, and Short Brothers Ltd. S-312 Tucano (military) aircraft, accomplish the following:

(1) Within 10 hours TIS after the effective date of this AD, disassemble the propeller and perform a one-time fluorescent dye penetrant inspection of a twelve-inch long area on both the face and camber sides of propeller blade shanks for forging flaws or cracks, in accordance with Hartzell Propeller Inc. ASB No. HC-ASB-61-220, dated July 8, 1996.

(2) Prior to further flight, remove from service propeller blades exhibiting forging flaws or cracks and replace with serviceable parts.

(b) For all other propellers, regardless of aircraft installation, accomplish the following:

(1) Within 60 hours TIS after the effective date of this AD, disassemble the propeller and perform a one-time fluorescent dye penetrant inspection of a twelve-inch long area on both the face and camber sides of propeller blade shanks for forging flaws or cracks in accordance with Hartzell Propeller Inc. ASB No. HC-ASB-61-220, dated July 8, 1996.

(2) Prior to further flight, remove from service propeller blades exhibiting forging flaws or cracks and replace with serviceable parts.

(c) For propellers that have not been inspected in accordance with this AD, which experience a sudden or unusual vibration, accomplish the following:

(1) Prior to further flight, disassemble the propeller and perform a one-time fluorescent dye penetrant inspection of a twelve-inch long area on both the face and camber sides of propeller blade shanks for forging flaws or cracks in accordance with Hartzell Propeller Inc. ASB No. HC-ASB-61-220, dated July 8, 1996.

(2) Prior to further flight, remove from service propeller blades exhibiting forging flaws or cracks and replace with serviceable parts.

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Chicago Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Chicago Aircraft Certification Office.

NOTE: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Chicago Aircraft Certification

Office.

(e) Except for propellers subject to paragraph (c) of this AD, special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be accomplished.

(f) The actions required by this AD shall be done in accordance with the following Hartzell Propeller Inc. service document:

<b>Document No.</b>	<b>Pages</b>	<b>Date</b>
ASB No. HC-ASB-61-220	1-24	July 8, 1996

Total pages: 24.

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Hartzell Propeller Inc., One Propeller Place, Piqua, OH 45356-2634; telephone (513) 778-4388, fax (513) 778-4321. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) This amendment becomes effective on July 29, 1996.