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## AIRWORTHINESS DIRECTIVE

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For the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/PHZL/69 Amdt 1 and issues the following AD under subregulation 39.1 (1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

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### Propellers - Variable Pitch - Hartzell

**AD/PHZL/69  
Amdt 2**

**Hartzell X and V Shank Propellers**

**13/2003**

**Applicability:** All () HC- ()(2,3)(X, V)()-() series and HA-A2V20-1B propellers with aluminium blades.

*Note 1: The parenthesis that appears in a propeller model indicates the presence or absence of additional letter(s), which may vary the propeller model. This Directive is applicable regardless of whether these letters are present or absent.*

*Note 2: Refer Hartzell Service Bulletin (SB) HC-SB-61-217 Revision 1, dated 11 July 1997, or Hartzell SB HC-SB-61-217 Revision 2 dated 7 October 1999, Table 2, for aircraft applicability.*

*Note 3: Hartzell SB's HC-SB-61-232 and SB HC-SB-61-233 detail modification of propellers to the "MV" series. Changing the propeller to the "MV" series excludes the propeller from the requirements of this Directive.*

**Requirement:** Perform initial and repetitive inspections and, if necessary, replace with serviceable parts in accordance with Hartzell Propeller Inc. Service Bulletin (SB) No. HC-SB-61-217, Revision 2, dated October 7 1999, as follows:

1. **Hartzell Propeller Models With Hub Models ()HC-(1,4,5,8)(2,3)(X,V)()-()**
  - a. Initially perform a fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, a dye penetrant inspection of the blade internal bearing bore, and a visual and magnetic particle inspection of the blade clamp and of the hub.
  - b. Perform repetitive fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, and a visual and magnetic particle inspection of the blade clamp.
  - c. Perform a repetitive visual and magnetic particle inspection of the hub.
  - d. Perform repetitive dye penetrant inspections of the blade internal bearing bore.
  - e. Shot peen the propeller blade shank area in accordance with Hartzell SB No. HC-SB-61-217, Revision 2, dated October 7 1999.

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2. **Hartzell Propeller Models With Hub Models ( )HC-(A,D)(2,3)(X,V)( )-( ), and HA-A2V20-1B, Except HC-A3VF-7( )**
  - a. Initially perform a fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, a visual and magnetic particle inspection of the blade clamp, and a dye penetrant inspection of the blade internal bearing bore.
  - b. Perform repetitive fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, and a visual and magnetic particle inspection of the blade clamp.
  - c. Perform repetitive dye penetrant inspections of the blade internal bearing bore.
  - d. Shot peen the propeller blade shank area in accordance with Hartzell SB No. HC-SB-61-217, Revision 2, dated October 7 1999.
3. **Hartzell Propeller Models with Hub Models HC-A3VF-7( )**
  - a. Initially perform a fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, a visual and magnetic particle inspection of the blade clamp, and a dye penetrant inspection of the blade internal bearing bore.
  - b. Perform fluorescent dye penetrant and eddy current inspection of the blade, an optical comparator inspection of the blade retention area, and a visual and magnetic particle inspection of the blade clamp.
  - c. Perform dye penetrant inspections of the blade internal bearing bore.
  - d. Shot peen the propeller blade shank area in accordance with Hartzell SB No. HC-SB-61-217, Revision 2, dated October 7 1999.

*Note 4: FAA AD 97-18-02R1 Amendment 39-13212 refers.*

- Compliance:
1. **Hartzell Propeller Models With Hub Models ( )HC-(1,4,5,8)(2,3)(X,V)( )-( )**
    - a. Unless previously accomplished in accordance with Hartzell SB No. HC-SB-61-217, Revision 1 or 2, prior to further flight.
    - b. At intervals not to exceed 500 hours propeller Time In Service (TIS) or 60 calendar months, whichever occurs first, since last inspection.
    - c. At intervals not to exceed 250 hours propeller TIS or 60 calendar months, whichever occurs first, since last inspection.

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AD/PHZL/69 Amdt 2 (continued)

- d. At intervals not to exceed 60 calendar months since last inspection.
  - e. Unless previously accomplished in accordance with Hartzell SB No. HC-SB-61-217, Revision 1 dated 11 July 1997, and only if the propeller blade shank area has been repaired or has excessive wear or damage in accordance with Hartzell SB No. HC-SB-61-217, Revision 2, dated October 7 1999.
2. **Hartzell Propeller Models With Hub Models ( )HC-(A,D)(2,3)(X,V)( )-( ), and HA-A2V20-1B, Except HC-A3VF-7( ).**
- a. Unless previously accomplished in accordance with Hartzell SB No. HC-SB-61-217, Revision 1 or 2, prior to further flight
  - b. At intervals not to exceed 500 hours propeller TIS or 60 calendar months, whichever occurs first, since last inspection.
  - c. At intervals not to exceed 60 calendar months since last inspection.
  - d. Unless previously accomplished in accordance with Hartzell SB No. HC-SB-61-217, Revision 1 dated 11 July 1997, and only if the propeller blade shank area has been repaired or has excessive wear or damage in accordance with Hartzell SB No. HC-SB-61-217, Revision 2, dated October 7 1999.
3. **Hartzell Propeller Models with Hub Models HC-A3VF-7( ).**
- a. Unless previously accomplished in accordance with Hartzell SB No. HC-SB-61-217, Revision 1 or 2, prior to further flight
  - b. At intervals not to exceed 3,000 hours propeller TIS or 60 calendar months, whichever occurs first, since last inspection.
  - c. At intervals not to exceed 60 calendar months since last inspection.
  - d. Unless previously accomplished in accordance with Hartzell SB No. HC-SB-61-217, Revision 1 dated 11 July 1997, and only if the propeller blade shank area has been repaired or has excessive wear or damage in accordance with Hartzell SB No. HC-SB-61-217, Revision 2, dated October 7 1999.

This Amendment becomes effective on 25 December 2003.

**Background:** The manufacturer has reported several blade separations resulting from cracks in the hubs, blades or blade clamps of this propeller series. Due to difficulty of detecting cracks the manufacturer has reduced the TBO of certain propeller models fitted to piston engine aircraft and introduced additional inspection procedures.

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AD/PHZL/69 Amdt 2 (continued)

Amendment 1 revised the compliance draw down requirements to include reference to the 10-year calendar overhaul period for Hartzell propellers as specified in AD/PROP/1 Amdt 1.

Amendment 2 provides a terminating action. Modification of the propeller to the "MV" series will remove the propeller from the applicability of this Directive.

Amendment 1 of this Directive became effective 1 January 1998.

The original issue of this Airworthiness Directive became effective on 1 January 1998.



Jim Coyne  
Delegate of the Civil Aviation Safety Authority

13 November 2003