

HARTZELL PROPELLER INC.
SERVICE BULLETIN

TRANSMITTAL SHEET

HC-SB-61-266

Propeller - Blade, Blade Retention Bearing, and Hub Inspection

May 20, 2013

This page transmits Revision 2 to Service Bulletin HC-SB-61-266.

- Original Issue, dated September 15/04
- Revision 1, dated January 14/05
- Revision 2, dated May 20/13

Propeller assemblies that have previously complied with this Service Bulletin not affected.

FAA acceptance has been obtained on technical data in this publication that affects type design.

Changes are shown by a change bar in the left margin of the revised pages.

Some of these changes which do not affect technical content may not be highlighted in this transmittal sheet.

This revision is issued to change the following:

- Add a reference to Hartzell Propeller Inc. Owner's Manual 145 Airworthiness Limitations Section for this Service Bulletin's compliance interval.
- Add additional hub inspection requirements.

This Service Bulletin is reissued in its entirety.

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1. Planning Information

A. Effectivity

Hartzell Propeller Inc. HC-()3YR-(1,2)() propellers with ()7690J composite blades installed on aircraft with the SMA SR305 engine are affected by this Service Bulletin.

CAUTION: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE BULLETIN. INFORMATION CONTAINED IN THIS SERVICE BULLETIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS SERVICE BULLETIN OR THE USE OF OBSOLETE INFORMATION MAY CREATE AN UNSAFE CONDITION THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR SUBSTANTIAL PROPERTY DAMAGE. REFER TO THE SERVICE BULLETIN INDEX FOR THE MOST RECENT REVISION LEVEL OF THIS SERVICE BULLETIN.

B. Concurrent Requirements

None

C. Reason

- (1) The SMA Model SR305 turbo-diesel engine has vibrational characteristics different from gasoline powered engines. Although certification testing of the propeller and engine combination confirms that the propeller operating stresses are within acceptable limits, the recurring blade and retention bearing inspection interval of the propeller has been reduced because of the unknown long term effect of operation on a turbo-diesel engine.
- (2) Inspect the propeller blade, propeller hub, and retention bearing in accordance with this Service Bulletin and Hartzell Propeller Inc. Propeller Owner's Manual 145 (61-00-45), Hartzell Propeller Inc. Compact Non-Feathering, Aerobatic Propeller Overhaul Manual 113B (61-10-13), Hartzell Propeller Inc. Compact Constant Speed and Feathering Propeller Overhaul Manual 117D (61-10-17), and Hartzell Propeller Inc. Composite Blade Overhaul Manual 135F (61-13-35). Inspection results are to be transmitted to Hartzell Propeller Inc. Product Support Department.
- (3) A ()7690J blade installed in a propeller used on an SMA engine may not be used in other propeller assemblies using ()7690 blades.

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- (4) Hartzell Propeller Inc. will compile inspection results with the goal of increasing the blade and retention bearing inspection interval up to the established TBO for similar propellers or to its practical limit as determined by cumulative inspection results.
- (5) Incorporation of the Service Bulletin will help prevent the possibility of damage to the blade and hub assembly because of broken or damaged blade retention bearings.
- (6) Overhaul of the propeller in accordance with Hartzell Propeller Inc. Service Letter HC-SL-61-61Y is required in addition to this inspection if the TSN or TSO or calendar limits have been reached.
- (7) Regulatory action is not required.

D. Description

- (1) This document provides Instructions for Continued Airworthiness (ICA).
- (2) This Service Bulletin introduces a recurring inspection interval for the blade, propeller hub, and blade retention bearing.
- (3) This Service Bulletin provides instructions for replacement of the blade retention bearing as necessary.

E. Compliance

The blade, propeller hub, and the blade retention bearing must be inspected at flight hours defined within the Airworthiness Limitations chapter of Hartzell Propeller Inc. Owner's Manual 145 (61-00-45).

F. Approval

FAA acceptance has been obtained on technical data in this publication that affects type design.

G. Manpower

Removal and Installation	2 hours
Disassembly and Reassembly	5 hours
Blade Inspection	1 hour
Retention Bearing Inspection	<u>1 hour</u>
Total Man-hours required	9 hours

H. Weight and Balance

Not Changed

I. Electrical Load Data

Not Changed

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J. References

- (1) Hartzell Propeller Inc. Compact Non-Feathering and Aerobatic Propeller Overhaul Manual 113B (61-10-13)
- (2) Hartzell Propeller Inc. Compact Constant Speed and Feathering Propeller Overhaul Manual 117D (61-10-17)
- (3) Hartzell Propeller Inc. Composite Blade Maintenance Manual 135F (61-13-35)
- (4) Hartzell Propeller Inc. Propeller Owner's Manual 145 (61-00-45)
- (5) Hartzell Propeller Inc. Service Letter HC-SL-61-61Y

K. Other Publications Affected

- (1) None

2. Material Information

A. Material Necessary for Each Propeller Assembly

- (1) Refer to Hartzell Propeller Inc. Compact Non-Feathering and Aerobatic Propeller Overhaul Manual 113B (61-10-13), Hartzell Propeller Inc. Compact Constant Speed and Feathering Propeller Overhaul Manual 117D (61-10-17), or Hartzell Propeller Inc. Composite Blade Overhaul Manual 135F (61-13-35) for material required to perform propeller assembly and disassembly procedures.

B. Expendables

- (1) Refer to Hartzell Propeller Inc. Compact Non-Feathering and Aerobatic Propeller Overhaul Manual 113B (61-10-13), Hartzell Propeller Inc. Compact Constant Speed and Feathering Propeller Overhaul Manual 117D (61-10-17), or Hartzell Propeller Inc. Composite Blade Overhaul Manual 135F (61-13-35) for consumables required to perform propeller assembly and disassembly procedures.
- (2) Refer to Hartzell Propeller Inc. Composite Blade Overhaul Manual 135F (61-13-35) for consumables required to perform blade inspection.

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C. Tooling

- (1) Washer-shaped metal tapper, approximately 2.5 inches (63.5 mm) OD x 1.25 inches (31.7 mm) ID x 0.25 inch (6.4 mm) thick, and weighing no less than 3 oz. (85.05 g) is required to perform blade coin tap inspection.
- (2) Refer to Hartzell Propeller Inc. Compact Non-Feathering and Aerobatic Propeller Overhaul Manual 113B (61-10-13), Hartzell Propeller Inc. Compact Constant Speed and Feathering Propeller Overhaul Manual 117D (61-10-17), or Hartzell Propeller Inc. Composite Blade Maintenance Manual 135F (61-13-35) for tooling required to perform propeller assembly and disassembly procedures and blade retention bearing inspection.

3. Accomplishment Instructions

NOTE: Propeller disassembly, inspection, and reassembly must be performed by a certified propeller repair station with the appropriate rating.

- A. Remove the propeller from the aircraft in accordance with Hartzell Propeller Inc. Propeller Owner's Manual 145 (61-00-45).
- B. Disassemble the propeller to the point of blade removal in accordance with Hartzell Propeller Inc. Compact Non-Feathering and Aerobatic Propeller Overhaul Manual 113B (61-10-13) or Hartzell Propeller Inc. Compact Constant Speed and Feathering Propeller Overhaul Manual 117D (61-10-17).
- C. Blade Inspection

CAUTION: PERFORM THE INSPECTION BEFORE CLEANING THE BLADE. WIPING THE BLADE MAY FORCE GREASE OR DIRT INTO A CRACK, IF PRESENT, AND PREVENT VISUAL CONFIRMATION OF A CRACK.

- (1) Using an adequate light source, visually inspect the blade outboard a distance of 3 inches (76.2 mm) from the blade retention radius for cracks. Inspect by viewing the blade trailing edge from both the face and camber sides of the blade.

NOTE: Cracking of the blade paint may be the first indication of a blade crack. Cracking in this area may expose the gray primer under the black paint.

- (2) Using a clean cloth dampened with a non-oil based solvent clean the area to be inspected and repeat the visual inspection.
- (3) Perform blade coin tap inspection in accordance with Hartzell Propeller Inc. Composite Blade Maintenance Manual 135F (61-13-35).

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- (4) Any blade with a crack must be removed from service before further flight. Contact Hartzell Propeller Inc. Product Support.
- D. Remove the retention bearing from the blade in accordance with Hartzell Propeller Inc. Composite Blade Maintenance Manual 135F (61-13-35).
- E. Retention Bearing Inspection
- (1) Inspect the blade retention bearing in accordance with the Check chapter of Hartzell Propeller Inc. Compact Non-Feathering and Aerobatic Propeller Overhaul Manual 113B (61-10-13) or Hartzell Propeller Inc. Compact Constant Speed and Feathering Propeller Overhaul Manual 117D (61-10-17).
 - (2) Visually inspect the ball bearing groove for damage. If the ball bearing groove shows wear, dimensionally inspect. Maximum permitted depth of damage is 0.005 inch (0.13 mm).
 - (3) Visually inspect each race for corrosion and pitting. Corrosion is not permitted. Maximum permitted depth of pitting is 0.005 inch (0.13 mm). Light corrosion may be removed by glass bead cleaning. Replace the race if corrosion cannot be removed or if pitting is deeper than 0.005 inch (0.13 mm).
 - (4) Visually inspect the outer diameter of the bearing race for fretting damage. Fretting damage is permitted, but must not affect the tight fit of the blade bearing race with the guide ring. Using a lightweight abrasive pad, clean the area thoroughly to minimize fretting damage.
 - (5) Perform a magnetic particle inspection of the race. Relevant indications are not permitted.
 - (6) Replace any blade retention bearing that fails inspection.
 - (7) Install the blade retention bearing in accordance with Hartzell Propeller Inc. Composite Blade Maintenance Manual 135F (61-13-35). If the bearing retaining ring is not tight, the race must be replaced.
- F. Hub Inspection
- (1) Clean the engine side of the hub surface, hub mounting bore, and attachment holes with the approved materials in accordance with Hartzell Propeller Inc. Standard Practices Manual 202A (61-01-02).
 - (2) Using a white light, visually inspect the engine side of the hub surface, hub mounting bore, and attachment holes for signs of fretting and/or cracks. Areas with signs of surface damage/fretting must be evaluated with 10X magnification.

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- (3) If any of the areas inspected show signs of fretting or cracking, penetrant inspect the hub in accordance with Hartzell Propeller Inc. Standard Practices Manual 202A (61-01-02).
- (4) Replace the hub if it fails penetrant inspection.
- G. Install the bearing races in accordance with Hartzell Propeller Inc. Composite Blade Maintenance Manual 135F (61-13-35).
- H. Reassemble the propeller in accordance with Hartzell Propeller Inc. Compact Non-Feathering and Aerobatic Propeller Overhaul Manual 113B (61-10-13) or Hartzell Propeller Inc. Compact Constant Speed and Feathering Propeller Overhaul Manual 117D (61-10-17).
- I. Install the propeller on the aircraft in accordance with the Installation and Removal chapter of Hartzell Propeller Inc. Propeller Owner's Manual 145 (61-00-45).
- J. Make a logbook entry noting compliance with this Service Bulletin.
- K. Inspection is required at flight hour intervals defined in the Airworthiness Limitations chapter of Hartzell Propeller Inc. Propeller Owner's Manual 145 (61-00-45).
- L. Complete and return the inspection form on Page 6 of this Service Bulletin to Hartzell Propeller Inc. Product Support.
- M. Recommended Service Facilities
 - (1) Hartzell Propeller Inc. has a worldwide network of Recommended Service Facilities that are recommended by Hartzell Propeller Inc. for overhaul and repair of our products.
 - (2) Each service facility must meet standard FAA requirements and additional Hartzell Propeller Inc. requirements before being recommended by Hartzell Propeller Inc. Each service facility is audited by Hartzell Propeller Inc. to verify the continuation of the standards.
 - (3) Hartzell Propeller Inc. recommends that you use one of these service facilities when having your propeller overhauled or repaired.
 - (4) For a current list of Hartzell Propeller Inc. Recommended Service Facilities, contact Hartzell Propeller Inc. Product Support or refer to the Hartzell Propeller Inc. website at www.hartzellprop.com.

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N. Contact Information

Hartzell Propeller Inc.
Attn.: Hartzell Product Support
One Propeller Place
Piqua, Ohio 45356-2634 USA
Phone: (001) 937.778.4379
Fax: (001) 937.778.4391
E-mail: techsupport@hartzellprop.com

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Service Bulletin Report Form

Please complete this report form for each propeller and fax or mail to:

Hartzell Propeller Inc.
Attn.: Hartzell Propeller Inc. Product Support
One Propeller Place
Piqua, Ohio 45356-2634 USA
Phone: 937.778.4379
Fax: 937.778.4391
E-mail: techsupport@hartzellprop.com

Propeller Serial Number: _____

Time Since New (TSN): _____

Time Since Overhaul (TSO): _____

Time Since Last Inspection: _____

Blade Serial Numbers: _____

Inspection Results: _____

Inspected By: _____

Company: _____

Address: _____

City: _____

State: _____ Zip: _____

Country: _____

Phone: _____

Fax: _____

Authorized Signature _____ Date: _____

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