

HARTZELL PROPELLER INC.
SERVICE LETTER
TRANSMITTAL SHEET

HC-SL-61-185

Tachometers

October 21, 2016

This page transmits Revision 3 to Service Letter HC-SL-61-185.

- Original Issue, dated April 12/99
- Revision 1, dated April 01/04
- Revision 2, dated Jan 08/16
- Revision 3, dated Oct 21/16

Propellers assemblies and tachometers that have previously complied with the instructions in this Service Letter are affected.

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

Revision 3 is issued to change the following in this Service Letter:

- Revised the section, "Effectivity"
- Revised the section, "Reason"
- Revised the section, "Description"
- Revised the section, "Compliance" to remove the requirement for tachometer calibration at 100 hour intervals/annual inspection
- Revised the section, "Other Publications Affected"
- Revised the section, "Accomplishment Instructions"

This Service Letter is reissued in its entirety.

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1. Planning Information

A. Effectivity

- (1) All Hartzell Propeller Inc. single-acting propellers are affected by this Service Letter.

WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE LETTER. INFORMATION CONTAINED IN THIS SERVICE LETTER MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS SERVICE LETTER 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 LETTER INDEX FOR THE MOST RECENT REVISION LEVEL OF THIS SERVICE LETTER.

B. Concurrent Requirements

- (1) Additional service documents may apply to the components/propellers affected by this Service Letter. Compliance with additional service documents may be necessary in conjunction with the completion of the Accomplishment Instructions in this Service Letter. Refer to the Hartzell Propeller Inc. website at www.hartzellprop.com for a cross-reference of service documents.

C. Reason

- (1) This Service Letter is issued to alert operators/maintenance personnel to the importance of aircraft tachometer calibration.
 - (a) The accuracy of all gauges used in the maintenance and operation of the aircraft is critical to the safe operation of the aircraft.

D. Description

- (1) This Service Letter provides Additional Maintenance Information (AMI).
- (2) Engine and/or propeller damage may result from an inaccurate tachometer.
- (3) Revision 3 to this Service Letter removes the Hartzell Propeller Inc. requirement for tachometer calibration at 100 hour intervals or at annual inspection.
 - (a) Hartzell Propeller Inc. recommends that owners/operators calibrate the engine tachometer in accordance with the National Institute of Standards and Technology (NIST) or similar national standard (traceable).

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E. Compliance

- (1) Hartzell Propeller Inc. recommends that owners/operators calibrate the engine tachometer in accordance with NIST or similar national standard (traceable).

F. Approval

- (1) This technical document is approved by Hartzell Propeller Inc.

G. Other Publications Affected

- (1) Hartzell Propeller Inc. Propeller Owner's Manual 115N (61-00-15)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (2) Hartzell Propeller Inc. Propeller Owner's Manual 131
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (3) Hartzell Propeller Inc. Propeller Owner's Manual 136 (61-00-36)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (4) Hartzell Propeller Inc. Propeller Owner's Manual 139 (61-00-39)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (5) Hartzell Propeller Inc. Propeller Owner's Manual 140 (61-00-40)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (6) Hartzell Propeller Inc. Propeller Owner's Manual 145 (61-00-45)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (7) Hartzell Propeller Inc. Propeller Owner's Manual 146 (61-00-46)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (8) Hartzell Propeller Inc. Propeller Owner's Manual 147 (61-00-47)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (9) Hartzell Propeller Inc. Propeller Owner's Manual 149 (61-00-49)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (10) Hartzell Propeller Inc. Propeller Owner's Manual 154
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (11) Hartzell Propeller Inc. Propeller Owner's Manual 167 (61-00-67)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (12) Hartzell Propeller Inc. Propeller Owner's Manual 168 (61-00-68)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (13) Hartzell Propeller Inc. Propeller Owner's Manual 169 (61-00-69)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com

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- (14) Hartzell Propeller Inc. Propeller Owner's Manual 174 (61-00-74)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (15) Hartzell Propeller Inc. Propeller Owner's Manual 411 (61-00-11)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (16) Hartzell Propeller Inc. Propeller Owner's Manual 480 (61-00-80)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com
- (17) Hartzell Propeller Inc. Propeller Owner's Manual 486 (61-00-86)
- Available on the Hartzell Propeller Inc. website at www.hartzellprop.com

2. Accomplishment Instructions

WARNING: OPERATION WITH AN INACCURATE TACHOMETER MAY CAUSE RESTRICTED RPM OPERATION AND DAMAGING HIGH STRESSES. PROPELLER LIFE WILL BE SHORTENED AND COULD CAUSE CATASTROPHIC FAILURE.

- A. All engine/propeller combinations have certain frequencies (RPM) at which the propeller blade stresses begin to reach design limits.
 - (1) In most cases, these frequencies are above the maximum rated RPM of the engine.
 - (2) Some engine/propeller combinations have certain ranges of RPM that are less than maximum engine speed, where stresses are at a level considered too high for continuous operation. This results in a “placarded range” where continuous operation is not permitted.
 - (3) In other cases, the maximum permitted stresses occur at an RPM only slightly above the maximum engine RPM.
 - (4) For these reasons, it is extremely important to accurately monitor engine speed.

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- B. The accuracy of the tachometer is critical to the safe operation of the aircraft.
- (1) Some tachometers have been found to be in error by as much as 200 RPM.
 - (2) Operating the aircraft with an inaccurate tachometer could cause continued operation in a placarded range of unacceptable high stresses, including repeatedly exceeding the maximum engine RPM.
 - (3) Continuous operation in a placarded range of unacceptable high stresses subjects the propeller to a high amplitude frequency which causes stresses higher than the design limits.
 - (4) Stresses that are higher than the design limits will shorten the life of the propeller and could cause a catastrophic failure.

C. Tachometer Calibration

- (1) Hartzell Propeller Inc. recommends that propeller owners/operators calibrate the engine tachometer in accordance with NIST or similar national standard (traceable).
- (2) Contact Hartzell Propeller Inc. if it is determined that a propeller was operated in a restricted RPM range because of a tachometer error.

D. Contact Information

Hartzell Propeller Inc.
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