

HARTZELL PROPELLER INC.
SERVICE BULLETIN

TRANSMITTAL SHEET

HC-SB-61-269

Propeller - Hub Inspection

September 28, 2006

This page transmits Revision 2 to Service Bulletin HC-SB-61-269.

- Original Issue, dated Apr 18/05
- Revision 1, dated Jun 01/06
- Revision 2, dated Sep 28/06

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

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

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

This revision is issued to change the following in the Service Bulletin:

- Clarified effectivity of hub with "E" suffix letters
- Changed repetitive interval to add 12 calendar months

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1. Planning Information

A. Effectivity

- (1) Hartzell two blade, aluminum hub, "compact" ()HC-()2Y()-() series propellers manufactured before December 1991 and have no suffix letter, or have an "E" suffix letter at the end of the hub and propeller serial number and installed on Lycoming 360 series engines are affected by this Service Bulletin. Propellers with a suffix letter "A" or "B" at the end of the hub and propeller serial number are not affected by this Service Bulletin.
- (2) Propellers installed on aircraft listed in Table 1 are not affected by this Service Bulletin. Propellers installed on these applications must comply with the inspection requirements specified in Hartzell Service Bulletin HC-SB-61-227 and Airworthiness Directive 2001-23-08.

NOTE 1: The parenthesis shown in the model designations throughout this Service Bulletin indicate letter(s) and/or number(s) that may or may not be present because of different configurations permitted on the various aircraft installations. Definition of propeller model designations and further details of letters that may be present are shown in Figure 1.

NOTE 2: Hub and propeller serial numbers without suffix letter "A" or "B" were manufactured before 1991 and can be identified by two different styles of the fillet radius as shown in Figure 2. The "E" suffix letter is added to the hub with no suffix serial number to indicate that the initial eddy current inspection has been performed in accordance with this Service Bulletin and a repetitive eddy current inspection is required.

B. Concurrent Requirements

- (1) Hartzell Service Bulletin HC-SB-61-227 and AD 2001-23-08 may instead be applicable, depending on the aircraft and engine type.
- (2) Installation of a "B" serial number suffix hub will require spinner bulkhead modification or replacement in accordance with the Repair/Modification chapter of Hartzell Spinner Assembly Maintenance Manual 127 (61-16-27).

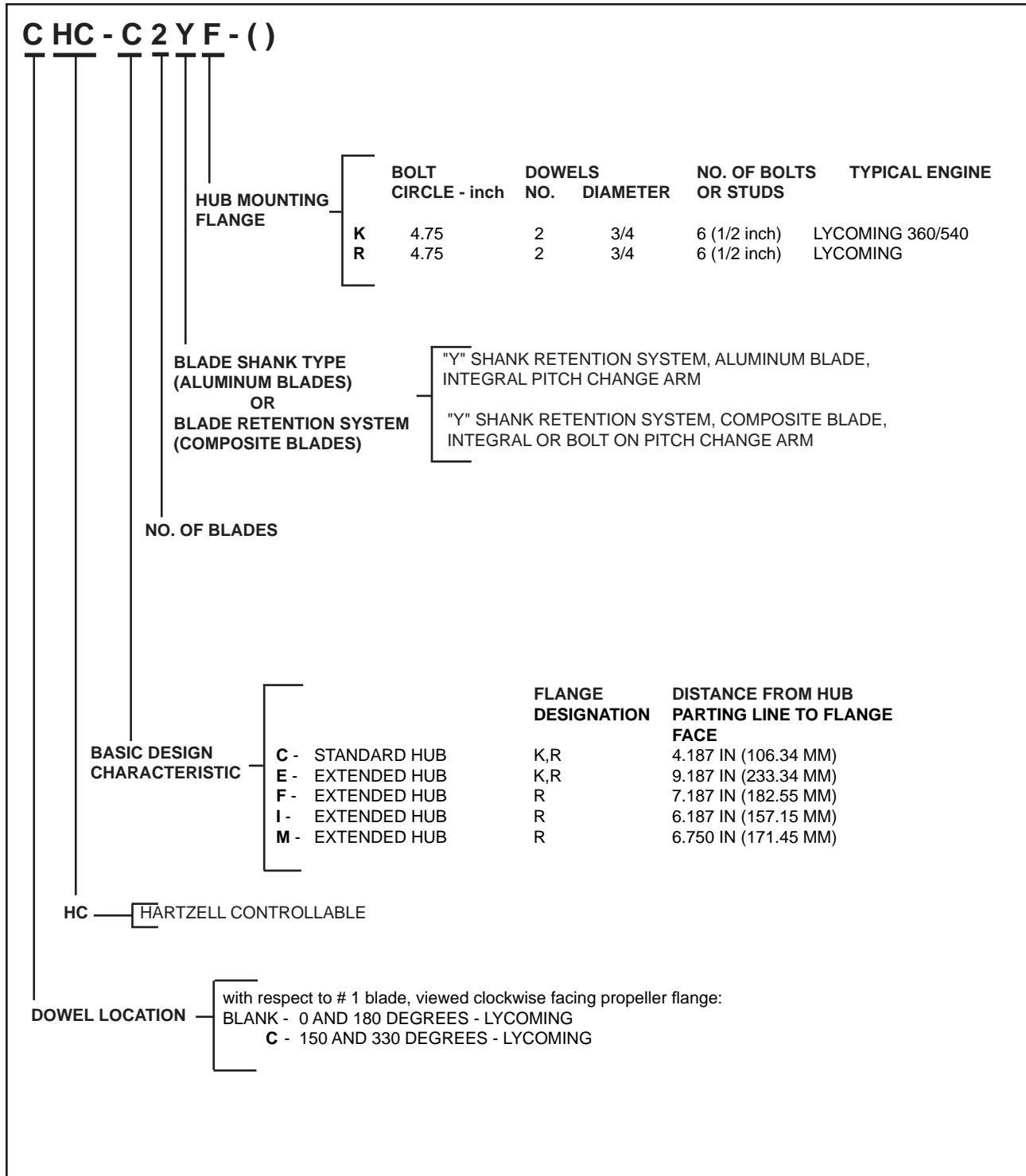
NOTE: Applications with non-Hartzell spinner assemblies should contact the appropriate Type Certificate holder for rework instructions.

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Model Designations for Aluminum Hub, Reciprocating Engine Propellers

Figure 1

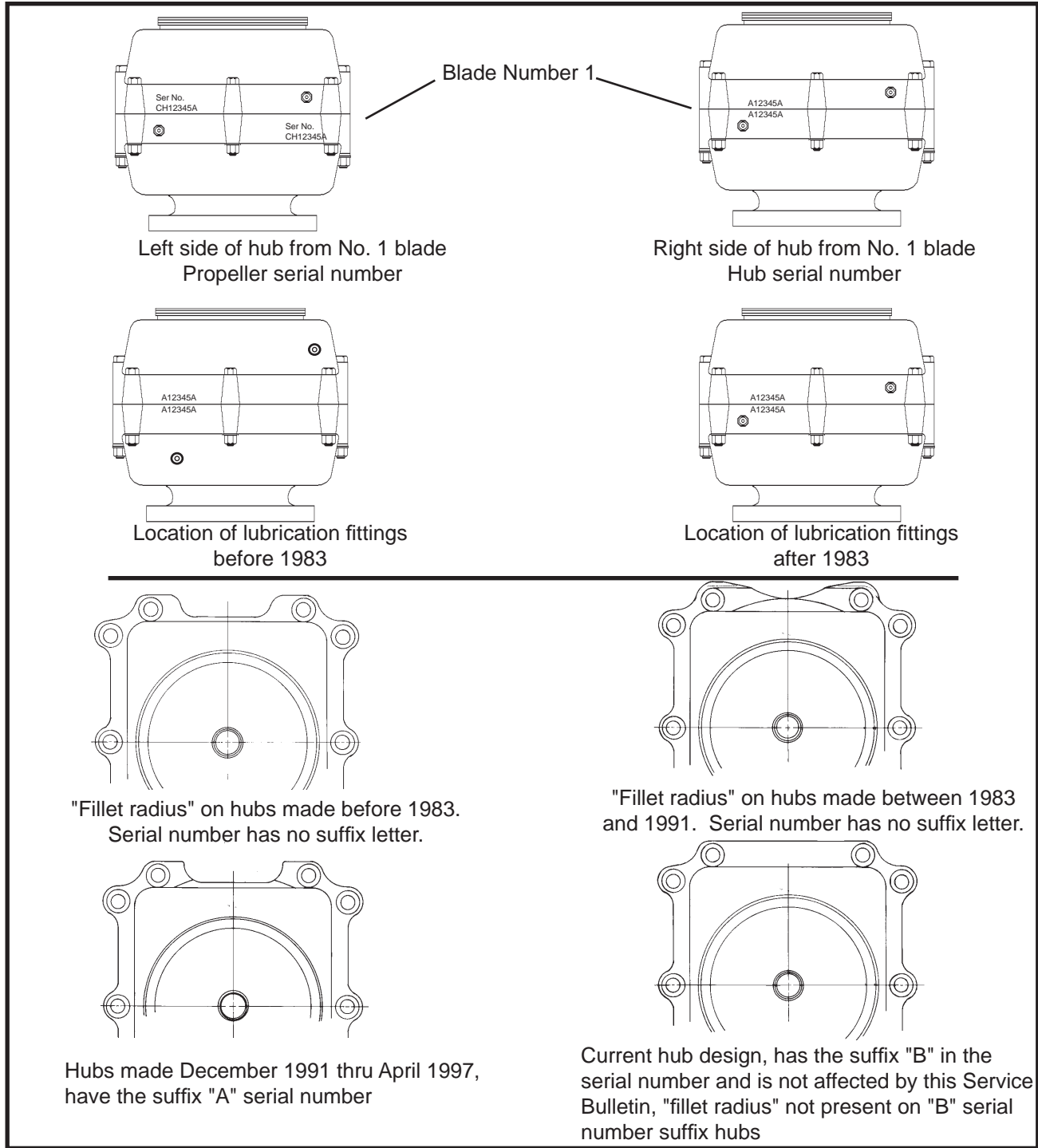
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C. Reason

WARNING: UNUSUAL OR ABNORMAL GREASE LEAKAGE OR VIBRATION, WHERE THE CONDITION INITIATED SUDDENLY, CAN BE AN INDICATION OF A FAILING PROPELLER BLADE OR BLADE RETENTION COMPONENT. AN INFLIGHT BLADE SEPARATION MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR SUBSTANTIAL PROPERTY DAMAGE. UNUSUAL OR ABNORMAL GREASE LEAKAGE OR VIBRATION DEMANDS IMMEDIATE INSPECTION FOR POSSIBLE CRACKED HUB (for further information on this subject see Hartzell Service Letter HC-SL-61-165).

- (1) There have been numerous occurrences of hub fillet cracks, including incidents of in-flight blade separation in Hartzell two blade "compact" series aluminum hub propellers.
- (2) Cracks were typically discovered during an inspection following reports of abnormal vibration or grease leakage. Cracks typically initiate at the same region of the hub in the area adjacent to the blade called the "fillet radius". As the cracks propagate toward the center of the hub, their progression accelerates and may result in failure of one hub half that can further progress to blade separation.
- (3) Airworthiness Directive 2006-18-15 was issued to address the inspection requirements specified in this Service Bulletin.

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Hub Identification
Figure 2

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D. Description

- (1) This revision changes the repetitive interval to 12 calendar months or 100 hours, whichever occurs first.
- (2) This Service Bulletin provides requirements for an initial and repetitive eddy current inspection of the propeller hub fillet radius of hubs that do not have an "A" or "B" serial number suffix or do have an "E" serial number suffix.
- (2) This Service Bulletin provides optional replacement of an affected non-suffix or "E" serial number suffix hub with an "A" or "B" suffix hub as a terminating action for this Service Bulletin.

NOTE 1: Installation of a hub with an "AE" suffix serial number is not approved as terminating action for this Service Bulletin. A hub with an "AE" suffix serial number is affected by Hartzell Service Bulletin HC-SB-61-227 and may not be installed on another aircraft application that does not have the same inspection requirements as HC-SB-61-227.

NOTE 2: A hub with a "B" suffix serial number is the current design. This design does not have a fillet radius. The fillet radius is the area of crack orientation. A hub with an "A" suffix serial number has a modified fillet radius. Installation of a "B" suffix hub is the recommended terminating action for this Service Bulletin.

Propellers installed on the following applications are not affected by this Service Bulletin. Propellers installed on these applications must comply with the inspection requirements specified in Hartzell Service Bulletin HC-SB-61-227 and AD 2001-23-08.

- (1) Aerobatic aircraft (including certificated aerobatic aircraft, military trainers, or any aircraft routinely exposed to aerobatic usage)
- (2) Agricultural aircraft
- (3) Piper PA-32() series aircraft with Lycoming 540 series engines rated at 300 HP or higher
- (4) Britten Norman BN-2() series aircraft with Lycoming 540 series engines

Propellers Not Affected by this Service Bulletin
Table 1

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E. Compliance

- (1) Perform the eddy current inspection described in this Service Bulletin within 50 hours or 12 calendar months, whichever occurs first from the effective date of this Service Bulletin.
- (2) Perform the eddy current inspection described in this Service Bulletin at repetitive intervals not to exceed 100 hours of operation or 12 calendar months, whichever occurs first.

CAUTION: DO NOT INSTALL A REPLACEMENT HUB AS TERMINATING ACTION WITH AN "A" SUFFIX SERIAL NUMBER IF IT WAS PREVIOUSLY INSTALLED ON AN APPLICATION AFFECTED BY SERVICE BULLETIN HC-SB-61-227.

- (3) Optional Terminating Action - Replacement of the non-suffix or "E" suffix propeller hub with a hub with an "A" or "B" suffix serial number is a terminating action for this Service Bulletin. "B" Suffix hubs may have a different part number and will be identified by suffix letter "B" at the end of the propeller serial number. Refer to Paragraph 2, Material Information, for part number information.

NOTE 1: A propeller hub from an aircraft that is affected by this Service Bulletin is not to be removed and reused on another aircraft application that does not have these inspection requirements.

NOTE 2: A hub with a "B" suffix serial number is the current design. This design does not have a fillet radius. The fillet radius is the area of crack orientation. A hub with an "A" suffix serial number has a modified fillet radius. Installation of a "B" suffix hub is the recommended terminating action for this Service Bulletin.

F. Approval

- (1) This Service Bulletin is approved by the Manager, FAA, Chicago Aircraft Certification Office, ACE 115C, by approval document dated September 28, 2006 as an alternative means of compliance with Airworthiness Directive 2006-18-15.

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G. Manpower

- (1) Eddy current inspection on-wing

Eddy Current Inspection	0.5 Man-hours
Spinner dome removal and installation	<u>0.5 man-hours</u>
Total man-hours	1.0 man-hours

- (2) Propeller hub replacement:

Propeller Removal/Installation	2.0 man-hours
Propeller Hub Replacement	<u>6.0 man-hours</u>
Total man-hours	8.0 man-hours

NOTE: Hub replacement, when accomplished in conjunction with propeller overhaul, requires no additional labor.

- (3) Spinner bulkhead modification
(if required due to hub replacement) 3.0 man-hours

H. Weight and Balance

- (1) There is no increase in weight with installation of a hub with suffix letter "A" in the serial number.
- (2) There is 0.50 lb. increase in weight with installation of a hub with suffix letter "B" in the serial number.

I. Electrical Load Data

- (1) Not Changed.

J. References

- (1) Hartzell Service Bulletin HC-SB-61-227
- (2) Hartzell Standard Practices Manual 202A (61-01-02)
- (3) Hartzell Propeller Owner's Manual 115N (61-00-15)
- (4) Hartzell Propeller Owner's Manual 145 (61-00-45)
- (5) Hartzell Non-Feathering Compact Overhaul Manual 113B (61-10-13)
- (6) Hartzell Feathering Compact Overhaul Manual 117D (61-10-17)
- (7) Hartzell Spinner Assembly Maintenance Manual 127 (61-16-27)

K. Other Publications Affected

- (1) None

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2. Material Information

A. Parts Required

- (1) If a hub must be replaced, see the hub replacement information below. Refer to Hartzell Spinner Assembly Maintenance Manual 127 (61-16-27) for replacement spinner bulkhead part numbers.

<u>Previous Hub Part Number</u>	<u>Keyword</u>	<u>Current Hub Part Number</u>
D-2201-2	Hub Unit	D-6522-1
D-2201-2R	Hub Unit	D-6522-1R
C-2201-3	Hub Unit	D-6529-1
D-2201-16	Hub Unit	D-6522-1
D-2201-17	Hub Unit	D-6529-1
D-2477-3	Hub Unit	D-6564-1
D-4214	Hub Unit	D-6557-2
D-4214-5	Hub Unit	D-6558-2
D-4214-7	Hub Unit	D-6557-1

B. Special Tooling

- (1) Eddy Current Instrument is required. Refer to Hartzell Standard Practices Manual 202A (61-01-02) for details.

3. Accomplishment Instructions

A. Hub Inspection

- (1) Inspection of the fillet radii on the (front) cylinder half of the propeller hub may be performed "on-wing" without removing the propeller from the engine.
- (2) This inspection must be accomplished by qualified personnel at an appropriately licensed propeller repair facility or certificated aircraft mechanic with an eddy current qualification in accordance with Hartzell Standard Practices Manual 202A (61-01-02).
- (3) If inspection is performed during propeller overhaul or if the propeller has been removed from the aircraft and disassembled, both halves of the hub are to be inspected in accordance with Hartzell Standard Practices Manual 202A (61-01-02).

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(4) On-Wing Inspection Procedure:

- (a) For propellers models ()HC-()2Y()-2() with counterweighted propeller blades, perform engine run and shut down with propeller blades in the feathered position. This will position the blade counterweights to provide maximum exposure of the forward hub half fillet radius area.

WARNING 1: DO NOT USE BLADE PADDLES TO FEATHER THE PROPELLER. IT IS POSSIBLE FOR EXCESSIVE LOADS TO BE APPLIED WITH BLADE PADDLES AND RESULT IN HIDDEN DAMAGE TO THE PITCH CHANGE MECHANISM.

WARNING 2: CARE MUST BE TAKEN TO UNFEATHER THE PROPELLER IN ACCORDANCE WITH PARAGRAPH 3.(A).(4).

NOTE: All ()HC-()2Y()-1() and some ()HC-()2Y()-2() series propellers do not have blade counterweights and therefore do not require special positioning of blades before inspection.

- (b) Remove spinner dome in accordance with Hartzell Propeller Owner's Manual 115N (61-00-15) or 145 (61-00-45) as applicable.
- (c) For propeller models ()HC-()2Y()-4() with counterweighted propeller blades (used on aerobatic aircraft), manually turn blades from high to low pitch to move the counterweight away from the inspection area (there is no pitch return spring in these propellers and the blades can be turned manually without the use of blade paddles). This will position the blade counterweights to provide maximum exposure to the forward hub half fillet radius area.

CAUTION: BALANCE WEIGHTS MUST BE RETURNED TO THE SAME LOCATION ON THE HUB FROM WHICH THEY WERE REMOVED.

- (d) Remove balance weights and make note of location as necessary.

NOTE: ()HC-()2Y()-(2)() propellers with balance weights installed may require removal from the aircraft for disassembly to allow removal of the balance weights behind counterweights.

- (e) Before any cleaning, visually inspect for a cracked hub in the area of the hub fillet radii (a cracked hub can have traces of grease coming from the crack making the crack more visible).

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This page transmits Revision 2 to Service Bulletin Appendix HC-SBA-61-269.

- Original Issue, dated Apr 18/05
- Revision 1, dated Jun 01/06
- Revision 2, Sep 28/06

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

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

This revision is issued to change the following in the Service Bulletin Appendix:

- Extended special pricing until September 30, 2007
- Added that form is available online at www.Hartzellprop.com

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1. Pricing Information

<u>Previous Hub Part Number</u>	<u>Current Hub Part Number</u>	<u>Keyword</u>	<u>2006 List Price</u>
D-2201-2	D-6522-1	Hub Unit	\$2,725.00
D-2201-2R	D-6522-1R	Hub Unit	\$2,873.00
D-2201-3	D-6529-1	Hub Unit	\$2,732.00
D-2201-16	D-6522-1	Hub Unit	\$2,725.00
D-2201-17	D-6529-1	Hub Unit	\$2,732.00
D-2477-3	D-6564-1	Hub Unit	\$3,678.00
D-4214	D-6557-2	Hub Unit	\$3,622.00
D-4214-5	D-6558-2	Hub Unit	\$3,581.00
D-4214-7	D-6557-1	Hub Unit	\$3,151.00

NOTE 1: Hub list prices are provided as information only. Refer to paragraph 4., Special Replacement Program, in this appendix, for instructions regarding replacement hubs.

2. Availability/Lead Time

A sufficient quantity of replacement hubs are being produced to allow replacement of all affected hubs within the specified compliance period.

3. Price/Lead Time Validity

List prices are current at time of publication and subject to change.

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Component Part Number: <u>Various</u>	Date of Issue: <u>April 18/05</u>	Rev. Date: <u>Sep 28/06</u>

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4. Special Pricing Program

A. Hartzell will allow purchase of a "B" suffix serial number hub at a 50 percent discount off list price when the propeller is overhauled in accordance with the recommended overhaul intervals (calendar and operating hours) as specified in Hartzell Service Letter HC-SL-61-61Y.

(1) An affected propeller that has been overhauled previously in accordance with Hartzell Service Letter HC-SL-61-61() is eligible for a specially priced hub until next recommended overhaul. To qualify, the following documentation must be submitted to Hartzell:

- (a) Copy of maintenance release tag, FAA Form 8130-3 or JAA Form 1 indicating current propeller overhaul or a copy of applicable log book pages which must include date, TSN and specify that current propeller overhaul was performed.
- (b) Copy of applicable log book pages which must include date, TSN and showing that a previous propeller overhaul was performed in accordance with Hartzell Service Letter HC-SL-61-61().
- (c) A completed Service Bulletin Compliance Form (located on page 7 of this Appendix).
- (d) Facility overhauling the propeller assembly must retire the unserviceable hub from service in accordance with Hartzell Standard Practices Manual 202A (61-01-02).

(2) An affected propeller that has not been overhauled previously in accordance with Hartzell Service Letter HC-SL-61-61(), is eligible for a specially priced hub if an overhaul is performed before September 30, 2007. To qualify, the following documentation must be submitted to Hartzell:

- (a) Copy of maintenance release tag, FAA Form 8130-3 or JAA Form 1 indicating current propeller overhaul.
- (b) A completed Service Bulletin Compliance Form (located on page 7 of this Appendix).

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- (c) Facility overhauling the propeller assembly must retire the unserviceable hub from service in accordance with Hartzell Standard Practices Manual 202A (61-01-02).

NOTE: Only applications affected by this Service Bulletin are eligible for hubs at a 50 percent discount off list price.

- B. Hartzell will allow purchase of complete propeller assemblies containing a "B" suffix serial number hub at a 40 percent discount off list price on an exchange basis when purchased as terminating action for this Service Bulletin. Specially priced propeller assemblies must be ordered before September 30, 2007.

- (1) The propeller assembly must be purchased from a Hartzell Network facility or direct from Hartzell Propeller Inc. To qualify, a completed Service Bulletin Compliance Form (located on page 7 of this Appendix) must be submitted to Hartzell.

NOTE: Only applications affected by this Service Bulletin are eligible for propeller assemblies at a 40 percent discount off list price.

C. Replacement Hub Order Administration

- (1) Specially priced hubs when purchased as terminating action for Service Bulletin HC-SB-61-269 and replaced concurrent with propeller overhaul, will be administered as follows:

NOTE: The following information is applicable only to those propeller hubs which meet the terms and conditions detailed under Paragraph 4.A. or Paragraph 4.A., above.

- (a) Complete the attached Service Bulletin Compliance Form. Mail, e-mail, or fax (preferred method) compliance form and required documentation, to the attention of the Service Bulletin Coordinator as indicated on the Service Bulletin Compliance Form.

NOTE: Order for replacement hub will not be entered until the completed Service Bulletin Compliance Form, and required documentation, is received.

- (b) Upon receipt of the completed Service Bulletin Compliance Form, and applicable overhaul documentation, Hartzell will enter an order for the replacement hub.

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D. Propeller Order Administration

- (1) Specially priced propeller assemblies when purchased as terminating action for Service Bulletin HC-SB-61-269, will be administered as follows:

NOTE: The following information is applicable only to those propeller assemblies which meet the terms and conditions detailed under Paragraph 4.B., above.

- (a) Complete the attached Service Bulletin Compliance Form. Mail, e-mail, or fax (preferred method) compliance form to the attention of the Service Bulletin Coordinator as indicated on the Service Bulletin Compliance Form.

NOTE: Order for replacement propeller assembly will not be entered until the completed Service Bulletin Compliance Form is received.

- (b) Upon receipt of the completed Service Bulletin Compliance Form, Hartzell will enter an order for the replacement propeller assembly.
- (c) Ship the unserviceable propeller assembly to Hartzell:

Hartzell Propeller Service Center
Attn.: Service Bulletin HC-SB-61-269 Coordinator
5465 W. State Route 185
Piqua, Ohio 45356-2634 USA

NOTE 1: Be sure to reference Return Material Authorization Number on the return shipment. Replacement propeller packaging should be used to return exchange propeller.

NOTE 2: The unservicable propeller assembly must be received within 30 days of shipment of replacement propeller. The Facility that ordered the replacement propeller will be invoiced for full list price if unservicable propeller is not returned to Hartzell with the 30 days.

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E. Hartzell Contact Information

- (1) Please complete the compliance/claim form on page 7 for each hub or propeller assembly identified in paragraph 1.A. Effectivity, of this Service Bulletin and meeting the terms and conditions detailed under Paragraph 4.A.(1,2) and 4.B.(1), of this Appendix, and fax or mail to:

NOTE: Overhaul documentation is required for replacement hubs.

Hartzell Propeller Inc.
Attn.: Service Bulletin 269 Coordinator
One Propeller Place
Piqua, Ohio 45356-2634 USA
Phone: 937.778.4379
Fax: 937.778.4391 (Intl. 001.937.778.4391)

- (2) The report form on page 7 is also available in electronic format on the Hartzell website. Go to www.hartzellprop.com, Product Support, Recent Service Documents.

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Service Bulletin Compliance Form

PO Number: _____

Propeller Model Number: _____

Propeller or Hub Serial Number: _____

Aircraft Model: _____

New Hub Part Number: _____

New Propeller Assembly Part Number: _____

Owner:

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Country: _____

Phone: _____

Performing Overhaul
and Retiring the Hub:

Returning Propeller Assembly

Signature for Repair Facility _____

Date: _____

Do not write below this line:

Propeller Repair Station:

Company: _____

ATTN: _____

Address: _____

City _____

State: _____ Zip: _____

Country: _____

Phone: _____

Fax: _____

RMA Number: _____ Warranty Claim Number: _____

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