

HARTZELL PROPELLER INC.
ALERT SERVICE BULLETIN
TRANSMITTAL SHEET
HC-ASB-61-381
Propeller - Blade Bearing Races

August 16, 2018

This page transmits a revision to Alert Service Bulletin HC-ASB-61-381.

- Original Issue, dated Jul 12/18
- Revision 1, dated Aug 16/18

Propeller assemblies that have previously complied with the required inspections in a previous revision of this Alert Service Bulletin are affected.

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

Revision 1 is issued to change the following in the Alert Service Bulletin:

- Revised the section, "Compliance"
- Revised the Figure-number and Table-number references in the section, "Accomplishment Instructions"

This Alert Service Bulletin is reissued in its entirety.

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1. Planning Information

A. Effectivity

- (1) Hartzell Propeller Inc. steel hub turbine propellers HC-B3TN-3D(Y)/T10282N(B) installed on De Havilland, Twin Otter DHC-6() aircraft operated by Trans Maldivian Airways are affected by this Alert Service Bulletin.

WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION.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

B. Concurrent Requirements

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

C. Reason

- (1) Trans Maldivian Airways reported that fractured A-1851-() blade bearing races and fractured B-6144-2 bearing balls have been found on affected propellers during aircraft inspections.

D. Description

- (1) This Alert Service Bulletin provides Instructions for Continued Airworthiness (ICA).
- (2) This Alert Service Bulletin provides instructions for inspecting the A-1851-() blade retention bearings and B-6144-2 bearing balls on the affected propellers.

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E. Compliance

- (1) For new propellers and propellers that had all new A-1851-() blade retention bearings installed at the most recent overhaul:
 - (a) If Time Since Overhaul (TSO) is equal to, or more than 3000 flight hours:
 - 1 Within 250 flight hours from the release date of this Alert Service Bulletin, overhaul the propeller and install all new A-1851 blade retention bearings (which include the bearing balls) in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
 - a After initial compliance with this Alert Service Bulletin, replace all A-1851 blade retention bearings with new A-1851 blade retention bearings every 3000 flight hours.
 - (b) If Time Since Overhaul (TSO) is less than 3000 flight hours:
 - 1 Within 250 flight hours from the release date of this Alert Service Bulletin or at 3000 flight hours TSO, whichever occurs later, overhaul the propeller and install all new A-1851 blade retention bearings (which include the bearing balls) in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
 - a After initial compliance with this Alert Service Bulletin, replace all A-1851 blade retention bearings with new A-1851 blade retention bearings every 3000 flight hours.
- (2) For propellers that had any overhauled A-1851-() blade retention bearings installed at the most recent overhaul:
 - (a) If Time Since Overhaul (TSO) is equal to, or more than 3500 flight hours:
 - 1 Within 100 flight hours from the release date of this Alert Service Bulletin, overhaul the propeller and install all new A-1851 blade retention bearings (which include the bearing balls) in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
 - a After initial compliance with this Alert Service Bulletin, replace all A-1851 blade retention bearings with new A-1851 blade retention bearings every 3000 flight hours.

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- (b) If Time Since Overhaul (TSO) is equal to, or more than 3000 flight hours but less than 3500 flight hours:

Option 1

- 1 Within 100 flight hours from the release date of this Alert Service Bulletin, inspect the A-1851-() blade retention bearings and B-6144-2 bearing balls in accordance with the Accomplishment Instructions in this Alert Service Bulletin.
 - a Repeat the inspection of the A-1851-() blade retention bearings and B-6144-2 bearing balls at 100 hour intervals until the next propeller overhaul.
- 2 At 3500 flight hours TSO or before, overhaul the propeller and install all new A-1851 blade retention bearings (which include the bearing balls) in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
 - a After initial compliance with this Alert Service Bulletin, replace all A-1851 blade retention bearings with new A-1851 blade retention bearings every 3000 flight hours.

Option 2

- 1 Within 100 flight hours from the release date of this Alert Service Bulletin, install all new A-1851 blade retention bearings (which include the bearing balls) in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
 - a After initial compliance with this Alert Service Bulletin, replace all A-1851 blade retention bearings with new A-1851 blade retention bearings every 3000 flight hours.

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- (c) If Time Since Overhaul (TSO) is equal to, or more than 2000 flight hours but less than 3000 flight hours:

Option 1

- 1 Within 100 flight hours from the release date of this Alert Service Bulletin, inspect the A-1851-() blade retention bearings and B-6144-2 bearing balls in accordance with the Accomplishment Instructions in this Alert Service Bulletin.
 - a Repeat the inspection of the A-1851-() blade retention bearings and B-6144-2 bearing balls at 100 hour intervals until the next propeller overhaul.
- 2 At 3000 flight hours TSO or before, overhaul the propeller and install all new A-1851 blade retention bearings (which include the bearing balls) in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
 - a After initial compliance with this Alert Service Bulletin, replace all A-1851 blade retention bearings with new A-1851 blade retention bearings every 3000 flight hours.

Option 2

- 1 Within 100 flight hours from the release date of this Alert Service Bulletin, install all new A-1851 blade retention bearings (which include the bearing balls) in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
 - a After initial compliance with this Alert Service Bulletin, replace all A-1851 blade retention bearings with new A-1851 blade retention bearings every 3000 flight hours.

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(d) If Time Since Overhaul (TSO) is less than 2000 flight hours:

Option 1

- 1 At 2000 flight hours TSO or before, inspect the A-1851-() blade retention bearings and B-6144-2 bearing balls in accordance with the Accomplishment Instructions in this Alert Service Bulletin.
 - a Repeat the inspection of the A-1851-() blade retention bearings and B-6144-2 bearing balls at 100 hour intervals until the next propeller overhaul.
- 2 At 3000 flight hours TSO or before, overhaul the propeller and install all new A-1851 blade retention bearings (which include the bearing balls) in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
 - a After initial compliance with this Alert Service Bulletin, replace all A-1851 blade retention bearings with new A-1851 blade retention bearings every 3000 flight hours.

Option 2

- 1 At 2000 flight hours TSO or before, install all new A-1851 blade retention bearings (which include the bearing balls) in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
 - a After initial compliance with this Alert Service Bulletin, replace all A-1851 blade retention bearings with new A-1851 blade retention bearings every 3000 flight hours.

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F. Approval

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

G. Manpower

Procedure	Man-hours
Remove and Install Propeller	3.5 hours
Blade Retention Bearing/Bearing Ball Inspection	12 hours
Blade Retention Bearing Replacement	9 hours

NOTE: No additional man-hours required when performed at overhaul.

H. Weight and Balance

- (1) Not changed

I. Electrical Load Data

- (1) Not changed

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J. References

- (1) Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18)
- (2) Hartzell Propeller Inc. Propeller Owner's Manual 139 (61-00-39)

K. Other Publications Affected

- (1) None

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2. Material Information

A. Components Required for Compliance

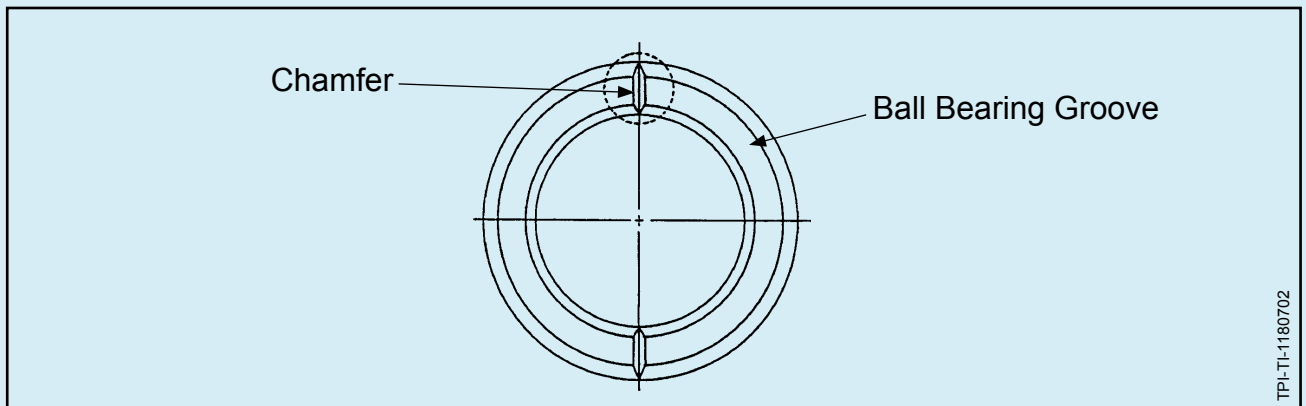
Part Number	Description	Qty:
A-1851	Bearing, Retention, Blade - includes:	3
	• A-1851-A (Bearing Race - Hub-side, qty. 1)	-
	• A-1851-B (Bearing Race - Blade-side, qty. 1)	-
	• B-6144-2 (Bearing Balls, qty. 19)	-

B. Blade Retention Bearing Identification

- (1) A-1851-() is used in this Service Bulletin to represent both the A-1851 and A-1851-T blade retention bearings. Refer to the table below for the specific components of the A-1851 and A-1851-T blade retention bearings.

Part Number	Description	Replaced by:
A-1851	Bearing, Retention, Blade - includes:	-
	• A-1851-A (Bearing Race - Hub-side, qty. 1)	-
	• A-1851-B (Bearing Race - Blade-side, qty. 1)	-
	• B-6144-2 (Bearing Balls, qty. 19)	-
A-1851-T	Bearing, Retention, Blade - includes:	A-1851
	• A-1851-TA (Bearing Race - Hub-side, qty. 1)	A-1851-A
	• A-1851-TB (Bearing Race - Blade-side, qty. 1)	A-1851-B
	• B-6144-2 (Bearing Balls, qty. 19)	-

- (2) Bearings races without a "T" in the item number can be identified by a chamfer in the ball bearing groove located at the mating surface of the race halves. Refer to Figure 1.



A-1851 Blade Retention Bearing Identification

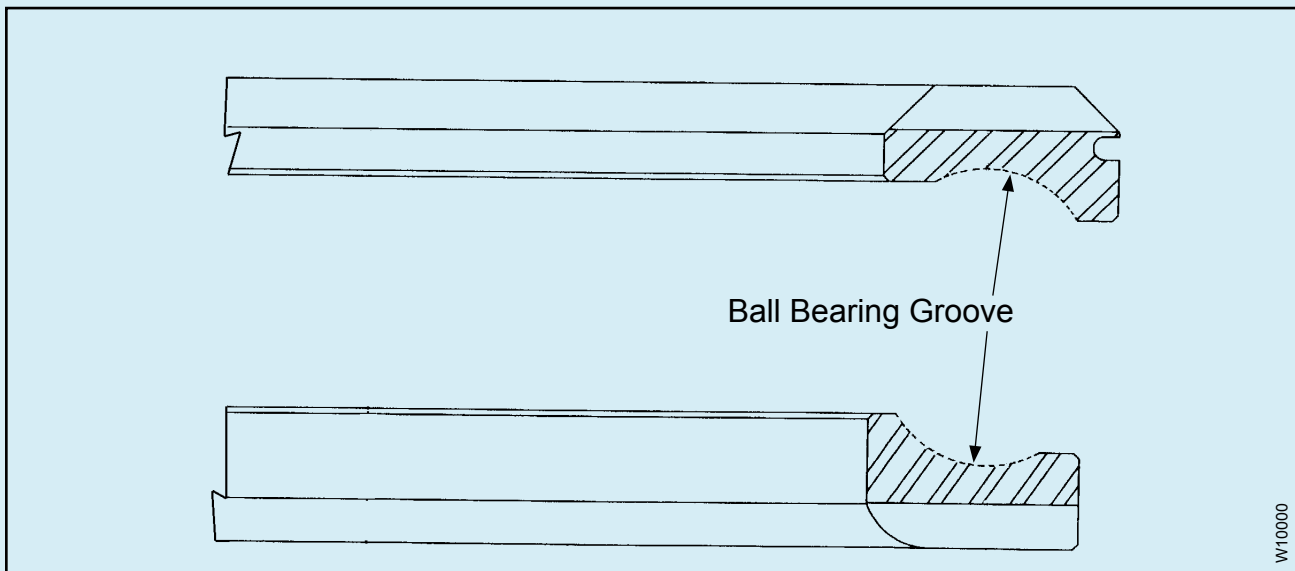
Figure 1

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3. Accomplishment Instructions

A. Blade Retention Bearing/Bearing Ball Inspection

- (1) Remove the propeller from the aircraft in accordance with Hartzell Propeller Inc. Propeller Owner's Manual 139 (61-00-39).
- (2) The following steps must be performed by a certified propeller repair station with the appropriate rating.
- (3) Remove the A-1851-() blade retention bearings and B-6144-2 bearing balls in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
- (4) Examine each A-1851-() blade retention bearing in accordance with Table 1 in this Alert Service Bulletin.
- (5) Examine each B-6144-2 bearing ball in accordance with Table 2 in this Alert Service Bulletin.
- (6) Reassemble the propeller in accordance with Hartzell Propeller Inc. Steel Hub Turbine Propeller Maintenance Manual 118F (61-10-18).
- (7) Make an entry in the propeller logbook indicating that the Blade Retention Bearing/Bearing Ball Inspection was performed in accordance with this Alert Service Bulletin.



A-1851-() Blade Retention Bearing
Figure 2

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<u>A-1851-() BLADE RETENTION BEARING</u> Refer to Figure 2			
	Inspect	Serviceable Limits	Corrective Action
(1)	Visually examine the ball bearing groove for wear.	If the ball bearing groove shows wear, measure it. The maximum permitted depth of wear is 0.005 inch (0.12 mm).	If the wear is greater than the permitted serviceable limits, replace the blade retention bearing with a new A-1851 blade retention bearing.
(2)	Visually examine the ball bearing groove for cracks and chipping.	Cracks and/or chipping are not permitted in the ball bearing groove.	If there are cracks and/or chipping in the ball bearing groove, replace the blade retention bearing with a new A-1851 blade retention bearing.
(3)	Visually examine the blade retention bearing for corrosion and pitting.	Corrosion is not permitted. If corrosion is present, remove it in accordance with the corrective action repair limits. The maximum permitted depth of pitting, excluding the ball bearing groove, is 0.005 inch (0.12 mm).	Light corrosion can be removed with an abrasive pad CM47 or equivalent. If corrosion cannot be removed, replace the blade retention bearing. If pitting is deeper than the serviceable limits, replace the blade retention bearing with a new A-1851 blade retention bearing.
		Pitting is not permitted in the ball bearing groove.	If there is pitting in the ball bearing groove, replace the blade retention bearing with a new A-1851 blade retention bearing.

**A-1851-() Blade Retention Bearing Inspection
Table 1**

<u>B-6144-2 BEARING BALL</u>			
	Inspect	Serviceable Limits	Corrective Action
(1)	Visually examine each bearing ball for wear, cracks, flat spots, or other damage.	Wear, cracks, flat spots, or other damage on the bearing ball is not permitted.	If <u>any</u> of the bearing balls have wear, cracks, flat spots, or other damage, replace <u>all</u> of the bearing balls in the affected bearing.

**B-6144-2 Bearing Ball Inspection
Table 2**

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B. Recommended Service Facilities

- (1) Hartzell Propeller Inc. has a worldwide network of Recommended Service Facilities for overhaul and repair of our products.
- (2) Each service facility must meet standard FAA requirements and additional Hartzell Propeller 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.

C. Contact Information

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