

Service Bulletin No: 61-001
Modification No: Inspection

Ref No: 87
ATA Chapter: 61

**PROPELLER - PROPELLER ASSEMBLY
CLEANING AND INSPECTION PROCEDURE FOR GREASE LEAKAGE**

1. Planning Information

A. Effectivity

MSNs 101 thru 154 with propeller assembly P/N 968.29.16.002 (HC-E5A-2) Serial Number (S/N) MG74 and lower which are not modified to Hartzell Service Bulletin HC-SB-61-339.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

Grease can be released from the propeller hub and contaminate the windscreen, impacting the pilot's visibility.

(2) Cause

Wear strip at the base of the propeller may become de-bonded and allow release of grease.

(3) Solution

Inspect aircraft for initial indication of grease release at regular intervals.

Replace wear strips with new wear strips introduced by Hartzell Service Bulletin HC-SB-61-339.

D. Description

This Service Bulletin gives the instructions and data necessary to:

- Do a one-time general cleaning procedure of the propeller hub
- Do the inspection of the propeller hub after each flight for indications of grease leakage
- If excessive grease leakage is found, do a detailed inspection procedure of the propeller hub (spinner removed) and replace the propeller if outside the acceptance limits of this Service Bulletin.

Revision No. 1 is issued because an operator reported a grease leakage from propeller assembly S/N MG29, which significantly reduced forward visibility from the front cockpit. The Propeller S/N MG29 does not have the wear strip introduced with Hartzell Service Bulletin HC-SB-61-321. The initial issue of this Service Bulletin was only applicable to propeller assemblies that have wear strips introduced with Hartzell Service Bulletin HC-SB-61-321. Therefore, this revision increases the effectivity to cover all the fleet.

E. Compliance

Mandatory.

PART A of this Service Bulletin (General Cleaning Procedure) must be done within 10 flight hours after receipt of this Service Bulletin.

PART B of this Service Bulletin (Inspection Procedure - After Each Flight) must be done once PART A has been completed and must be repeated after each flight until Hartzell Service Bulletin HC-SB-61-339 has been incorporated.

NOTE: Part B is to be carried out before the Post Flight Inspection (05-40-00-00A-287A-A) or Turn-around Inspection (05-40-00-00A-286A-A).

PART C of this Service Bulletin (Detailed Inspection Procedure) must be done on all propellers which have leakage that is out of limits.

F. Approval

The technical content of this Service Bulletin is approved under the authority of Letter of DOA Acceptance ref. FOCA. 21J.002.

PILATUS advises Operators/Owners to check with their delegated Airworthiness Authorities for any changes, local regulations or sanctions that may affect the embodiment of this Service Bulletin.

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H. Manpower

	Man-Hours		
	Part A	Part B	Part C
Preparation	0.1		0.1
Cleaning / Inspection	0.8	0.5	1.8
Close up	0.1		0.1
TOTAL MAN-HOURS	1.0	0.5	2.0

NOTE: Part C does not include removal of the propeller assembly or accomplishment of the Hartzell Service Bulletin HC-SB-61-339.

I. Weight and Balance**(1) Weight Change**

Not changed.

(2) Moment Change

Not changed.

J. Electrical Load Data

Not changed.

K. Software

Not changed.

L. Hardware

Not changed.

M. References

Aircraft Maintenance Manual (AMM), 00-50-00-00A-013A-A, 61-00-00-00A-012A-A, 61-00-00-00A-525A-A, 61-10-06-00A-520A-A, 61-10-06-00A-720A-A, 95-00-00-00A-012A-A.

N. Publications Affected

None

O. Interchangeability of Parts

Not applicable.

2. Material Information**A. Material - Price and Availability**

No modification kit is necessary to do this Service Bulletin.

Operators who require more information should contact:

PILATUS AIRCRAFT LTD,
MANAGER, INTEGRATED LOGISTIC SUPPORT
CH 6371 STANS, Tel: +41 41 619 34 07
SWITZERLAND Fax: +41 41 619 64 52

Operators are requested to advise Pilatus Aircraft Ltd. of the Manufacturer's Serial Number (MSN), the flying hours and landings of aircraft which are allocated for this Service Bulletin using the Service Bulletin Evaluation Form.

B. Material Necessary for Each Aircraft**(1) Material to be Procured**

None

(2) Operator Supplied Materials (Ref. AMM 00-50-00-00A-013A-A):

MATERIAL NO.	DESCRIPTION	QTY	REMARKS
P01-008	SOLVENT	A/R	Or equivalent
P02-031	ABSORBENT PAPER	A/R	Or equivalent

C. Material Necessary for Each Spare

None

D. Re-identified Parts

None

E. Tooling - Cost and Availability

None.

3. Accomplishment Instructions**A. PART A**

WARNING: MAKE SURE THAT THE SAFETY PIN IS INSTALLED IN THE EJECTION SEAT FIRING-HANDLE AND THE CFS BEFORE YOU DO WORK IN THE COCKPIT. WHEN THE SAFETY PIN IS NOT INSTALLED, YOU CAN OPERATE THE EJECTION SEAT OR THE CFS ACCIDENTALLY. THE EJECTION SEAT AND THE CFS CAN KILL OR CAUSE AN INJURY TO PERSONNEL AND CAN CAUSE DAMAGE TO EQUIPMENT (REF. AMM, 95-00-00-00A-012A-A).

CAUTION: DO NOT USE PRESSURE WASHING EQUIPMENT TO CLEAN THE PROPELLER OR CONTROL COMPONENTS. PRESSURE WASHING CAN FORCE WATER AND/OR CLEANING SOLVENTS PAST SEALS, AND CAN LEAD TO INTERNAL CORROSION OF PROPELLER COMPONENTS.

CAUTION: WHEN CLEANING THE PROPELLER, DO NOT ALLOW SOAP OR SOLVENT SOLUTIONS TO RUN OR SPLASH INTO THE HUB AREA.

CAUTION: DO NOT CLEAN THE PROPELLER WITH CAUSTIC OR ACIDIC SOAP SOLUTIONS. IRREPARABLE CORROSION OF PROPELLER COMPONENTS MAY OCCUR

(1) Preparation

Do the safety procedures for the propeller assembly before you do the work to the propeller assembly (Ref. AMM, 61-00-00-00A-012A-A).

(2) General Cleaning Procedure

(a) Remove the spinner (Ref. AMM, 61-10-06-00A-520A-A).

(b) Wipe the propeller with the absorbent paper (Material No. P02-031).

CAUTION: WHEN YOU CLEAN THE PARTS, DO NOT USE SOLVENT THAT COULD SOFTEN OR DESTROY THE BOND BETWEEN THE CHEMICALLY ATTACHED PARTS.

(c) Use the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-008) to remove grease or oil from propeller surfaces.

(d) Clean grease from the hub, at the root of the blade, with the absorbent paper (Material No. P02-031).

(e) Wipe the spinner with clean absorbent paper (Material No. P02-031).

(f) Use the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-008) to remove grease or oil from the spinner surfaces.

(g) Install the spinner (Ref. AMM, 61-10-06-00A-720A-A).

(3) Close-Up

- (a) Remove all equipment, tools and materials from the work area. Make sure that the work area is clean.
- (b) Do the close up procedure for the propeller (Ref. AMM, 61-00-00-00A-525A-A).

(4) Documentation

- (a) Make an entry in the Aircraft Logbook that PART A of this Service Bulletin has been incorporated.
- (b) Make an entry in the Aircraft Logbook that PART B of this Service Bulletin must be accomplished after each flight until Hartzell Service Bulletin HC-SB-61-339 has been incorporated.
- (c) Use the Service Bulletin Evaluation Sheet and report your results and the serial number of the aircraft to PILATUS.

B. PART B**(1) Detailed Inspection Procedure**

After accomplishment of PART A of this Service Bulletin, Part B must be done after every flight.

- (a) Before you do the Post Flight Inspection (05-40-00-00A-287A-A) or the Turn-around Inspection (05-40-00-00A-286A-A), inspect the propeller, the spinner and the cockpit canopy for grease and oil leakage.

- (b) Break-in leakage should be cleaned with a clean, dry piece of absorbent paper (Material No. P02-031).

NOTE: A new or recently overhauled, resealed, or serviced propeller may leak slightly during the first several hours of operation, this is break-in leakage.

NOTE: Break-in leakage is due to seating of seals and O-rings, and the ejection of the lubricants used during assembly. It comes from the blade root, between the blade shank and hub blade opening and will appear on the propeller blades and possibly inside the spinner

NOTE: Break-in leakage will appear as a light streak which extends partially down the length of one or more blades and does not contain solid grease.

NOTE: Break-in leakage will slowly reduce over time. It can return after the clean procedure, but should normally stop before 25 hours of operation.

- (c) Normal grease separation should be cleaned with a clean, dry piece of absorbent paper (Material No. P02-031).

NOTE: The solid and liquid components of lubrication grease can separate over time in service, particularly in very hot conditions. Such grease separation is normal, and may result in occasional light streaks, which extend partially down the length of one or more blades.

NOTE: Normal grease separation leakage will only appear as oily streaks without solid grease. It should be light, and only appear on the propeller blades and possibly inside the spinner.

NOTE: Normal grease separation leakage can occur at different times over the life of the propeller, and is not linked to hours of operation.

- (d) If you find leakage which is more than the expected break-in leakage or normal grease leakage limits described above, it is unacceptable leakage and you must do the Detailed Inspection Procedure (Ref. Para. 3.C.) before the next flight.

NOTE: Unacceptable leakage is clearly more severe than the streaks described above and will contain moderate amounts of grease solids. It normally collects on the inboard surface of the blade counterweight clamp or inside spinner dome.

NOTE: Grease leakage which appears on the airframe or the cockpit canopy is unacceptable grease leakage.

NOTE: Leakage which does not reduce over time, and is reported on 5 or more consecutive flights is unacceptable grease leakage.

NOTE: Leakage where the rate, which suddenly gets worse, or is sudden and accompanied by vibration is unacceptable leakage.

(2) Close-Up

Remove all equipment, tools and materials from the work area. Make sure that the work area is clean.

(3) Documentation

- (a) If unacceptable leakage is identified (Ref. Para. 3.B.(1)(d)), do the Inspection Procedure (Spinner Off) (Ref. Para. 3.C.) before the next flight.

C. PART C**(1) Detailed Inspection Procedure (Spinner Removed)**

WARNING: MAKE SURE THAT THE SAFETY PIN IS INSTALLED IN THE EJECTION SEAT FIRING-HANDLE AND THE CFS BEFORE YOU DO WORK IN THE COCKPIT. WHEN THE SAFETY PIN IS NOT INSTALLED, YOU CAN OPERATE THE EJECTION SEAT OR THE CFS ACCIDENTALLY. THE EJECTION SEAT AND THE CFS CAN KILL OR CAUSE AN INJURY TO PERSONNEL AND CAN CAUSE DAMAGE TO EQUIPMENT (REF. AMM, 95-00-00-00A-012A-A).

(2) Preparation

Do the safety procedures for the propeller assembly before you do the work to the propeller assembly (Ref. AMM, 61-00-00-00A-012A-A).

(3) Inspection Procedure

- (a) Remove the spinner (Ref. AMM, 61-10-06-00A-520A-A).

CAUTION: DO A VISUAL INSPECTION BEFORE YOU CLEAN THE PARTS. YOU CAN SEE SOMETIMES SIGNS OF GREASE THAT COMES FROM A TIGHT CRACK. IF YOU CLEAN THE AREA, YOU CAN REMOVE THE EVIDENCE AND MAKE A CRACK VIRTUALLY IMPOSSIBLE TO SEE.

- (b) Do a visual inspection for cracks in the hub. A crack can be readily visible, or can be indicated by grease leaking from a seemingly solid surface. Extra attention should be given to the blade retention area of the hub. If you find cracks, return the propeller assembly to the overhaul center.
- (c) Do a visual inspection of the hub, the blades and the blade retention areas to locate the origin of the leakage (Ref. Fig. 1).

NOTE: The blade retention bearing-socket is the only source for grease leakage.

- (d) If you find a grease leak, remove the propeller before the next flight and incorporate Hartzell Service Bulletin HC-SB-61-339.

NOTE: When you return the propeller, send documentation, to include photographs, to show clearly where you found the leak.

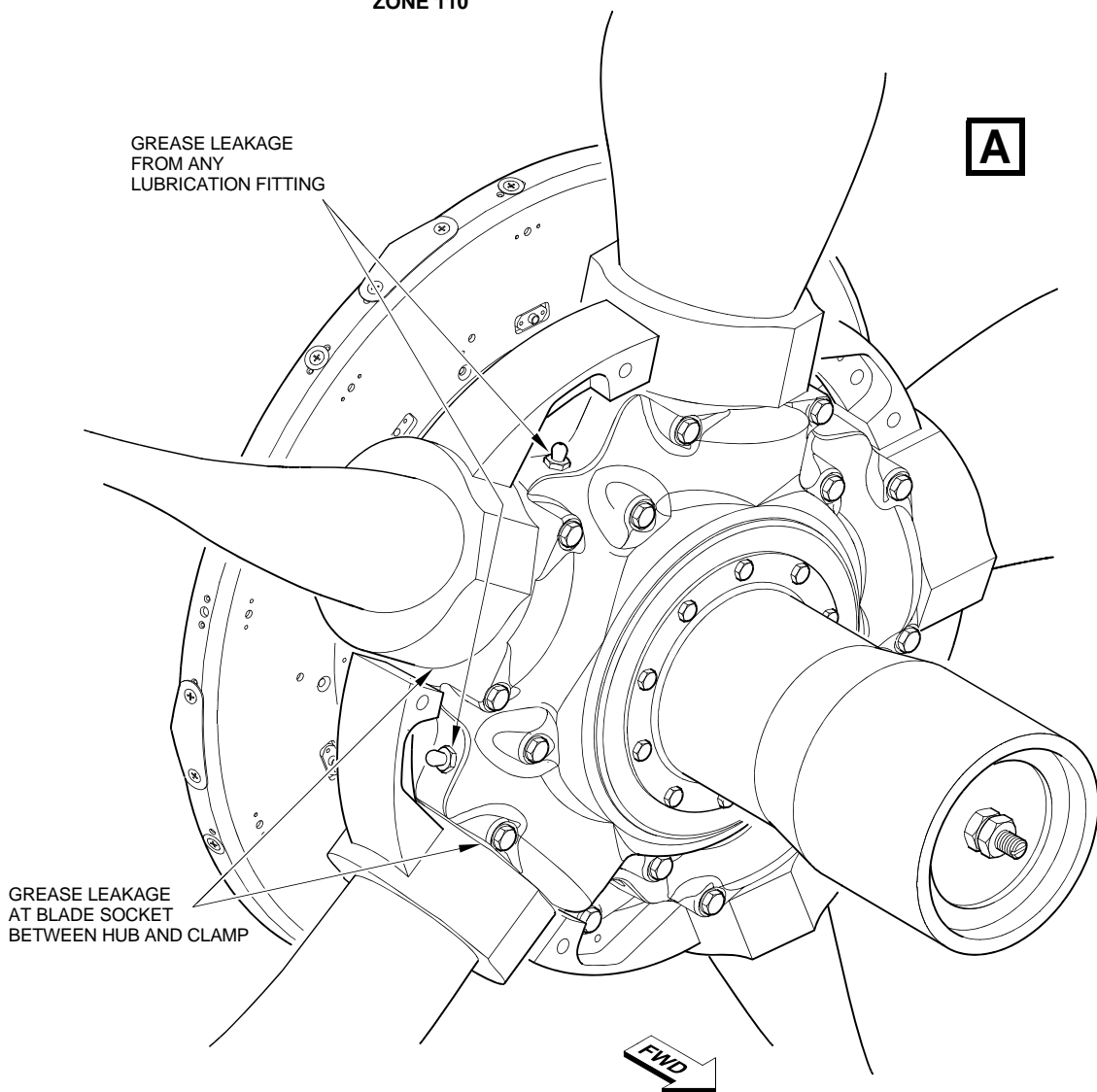
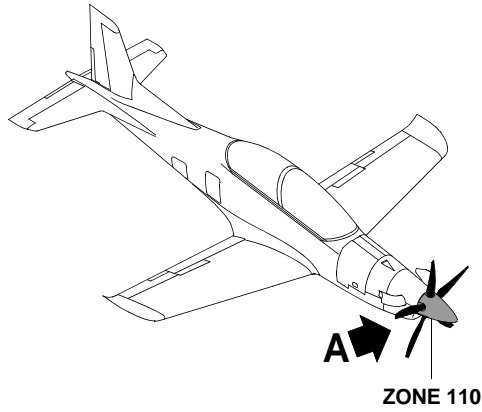
- (e) Do Para. 3.A.(2)(b) thru (g) on the propeller assembly.

(4) Close-Up

- (a) Remove all equipment, tools and materials from the work area. Make sure that the work area is clean.
- (b) Do the close up procedure for the propeller (Ref. AMM, 61-00-00-00A-525A-A).

(5) Documentation

- (a) If Hartzell Service Bulletin HC-SB-61-339 was incorporated, remove the entry from the Aircraft Logbook that PART B of this Service Bulletin must be accomplished after each flight.
- (b) Use the Service Bulletin Evaluation Sheet and report your results and the serial number of the aircraft to PILATUS.



Possible Location for Grease Leakage
Figure 1

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SERVICE BULLETIN EVALUATION SHEET FOR SB No. 61-001			
Title	Propeller - Propeller Assembly Cleaning and Inspection Procedure for Grease Leakage		
Customer			
Service Center			
EMBODIMENT REPORTING			
This SB has been embodied:		<input type="checkbox"/>	On the entire fleet
		<input type="checkbox"/>	Only partially
Provide embodiment details per aircraft (use additional copies of this table, if necessary)			
MSN	Flying Hours	MSN	Flying Hours
Additional embodiment comments/findings			
EDITORIAL COMMENTS (procedure, kit quality, suggested improvements, etc.)			
Name	Signature	Date	
Please complete and forward this form to: Pilatus Aircraft LTD, Customer Technical Support (MCC), P.O. BOX 992, 6371 Stans, Switzerland Fax: +41 (0)41 619 6773 Email: Techsupport@pilatus-aircraft.com			

SERVICE BULLETIN EVALUATION SHEET

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