

Service Bulletin No: 27-005
Modification No: LUBRICATION

Ref No: 51
ATA Chapter: 27

**FLIGHT CONTROLS - SPOILERS
LUBRICATION OF THE SPOILER CONTROL ROD-TO-SPOILER ACTUATOR CONNECTION-BOLT**

1. Planning Information

A. Effectivity

PC-21 aircraft MSN 101 thru MSN 127.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

A customer reported that the spoilers of some of their PC-21 aircraft were found slightly deployed when the pilot had selected the ailerons to the neutral position.

(2) Cause

Normally the return spring (installed on the spoiler actuator input-lever) puts the spoiler linkage to the down position when the pilot returns the control column to the neutral position. On some aircraft it was found that the rod-end on the actuator lever (P/N 527.12.21.097) (where it attaches to the input lever of the spoiler actuator) could not move easily. The spring could not overcome this additional force and the spoiler did not fully return to the down position.

(3) Solution

Lubricate the bolt that attaches the actuator lever.

D. Description

This Service Bulletin gives the instructions and data necessary to do a one off lubrication of the bolt (P/N 932.35.14.059) that attaches the actuator lever (P/N 527.12.21.097) to the left and right spoilers.

NOTE: Subsequent lubrications will be called up in the chapter 05 of the AMM.

E. Compliance

Mandatory.

Accomplishment required not later than 90 days after the effective date of this Service Bulletin.

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 local 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
Preparation	0.2
Lubrication of the Bolt	0.6
Close up	0.2
TOTAL MAN-HOURS	1.0

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

Not affected.

(2) Moment Change

Not affected.

J. Electrical Load Data

Not changed.

K. Software

Not changed.

L. References

Aircraft Maintenance Manual (AMM), 00-10-00-00A-017A-A, 00-50-00-00A-013A-A, 06-40-00-00A-055A-A, 24-40-00-00A-331A-A, 24-40-00-00A-332A-A, 27-00-00-00A-012A-A, 27-00-00-00A-525A-A, 27-60-01-00A-344A-A, 29-00-00-00A-331A-A, 29-00-00-00A-332A-A, 29-20-02-00A-225A-A, 31-10-01-01A-040A-A, 95-00-00-00A-012A-A

M. Publications Affected

AMM, 05-40-00-00A-289A-A, 27-60-01-00A-242A-A, 27-60-01-02A-720A-A

N. 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,
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CH 6371 STANS, Tel: +41 41 619 66 30
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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**

These parts are necessary to accomplish this Service Bulletin on one aircraft:

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	FIG, NO.	ITEM NO.
940.17.02.213	COTTER PIN	940.17.02.213	2	1	2

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

MATERIAL NO.	DESCRIPTION	QTY	REMARKS
P01-010	SOLVENT	A/R	Or equivalent
P02-031	ABSORBENT PAPER	A/R	Or equivalent
P04-028	GREASE	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

WARNING: MAKE SURE THAT BOTH EJECTION SEATS HAVE THE SAFETY PINS INSTALLED IN THE SAFE FOR SERVICING LOCATIONS AND THAT THE CFS HAS THE SAFETY PIN INSTALLED IN THE SAFE POSITION BEFORE YOU GO INTO THE COCKPIT (REF. AMM, 95-00-00-00A-012A-A).

NOTE: The mechanical tool kit (P/N 990.00.02.004) is necessary to do this procedure.

NOTE: This procedure is applicable to the left and the right spoiler actuators.

NOTE: To identify the AGE and tools used in this procedure, refer to the AMM, list of AGE and tools, 00-10-00-00A-017A-A.

A. Preparation

- (1) Do the safety procedures for the Flight Control System (FCS), before you do work on the flight controls, refer to AMM, 27-00-00-00A-012A-A.

NOTE: For more information on the location of the access items, refer to AMM, 06-40-00-00A-055A-A.

- (2) Energize the aircraft electrical system (Ref. AMM, 24-40-00-00A-331A-A).
- (3) Connect the Hydraulic Ground Power-Unit (HGPU) to the aircraft (Ref. AMM, 29-00-00-00A-331A-A).
- (4) Put the DO NOT OPERATE THE FLIGHT CONTROLS warning panels (P/N. 990.00.00.910) in the front and rear cockpits.
- (5) Put the DO NOT OPERATE THE FLIGHT CONTROLS warning panels (P/N. 990.00.00.910) in the area of the left and the right spoilers.

WARNING: BE CAREFUL BEFORE YOU PRESSURIZE THE HYDRAULIC SYSTEM. MAKE SURE THAT THE POSITION OF THE CONTROL COLUMN AND THE AIRBRAKE SWITCH AGREES WITH THE POSITION OF THE CONTROL SURFACES. THE SUDDEN MOVEMENT OF THE CONTROL SURFACES CAN CAUSE AN INJURY TO THE PERSONS AND CAN CAUSE DAMAGE TO THE EQUIPMENT.

- (6) Energize the HGPU.
- (7) Set the HGPU delivery pressure to 207 bar (3000 psi).

NOTE: For the location of the flap control lever, refer to the AMM, 31-10-01-01A-040A-A.
- (8) Set the flap control lever to the LDG position.
- (9) Make sure that the flaps move smoothly and freely to the landing position.
- (10) De-energize the aircraft electrical system (Ref. AMM, 24-40-00-00A-332A-A).
- (11) De-energize the HGPU.
- (12) Release the hydraulic system pressure (Ref. AMM, 29-20-02-00A-225A-A).

- (13) Push the reset button on the top of the spoiler actuator and release the hydraulic pressure in the spoiler actuator (Ref. AMM, 27-60-01-00A-344A-A for more information).
- (14) Move the spoiler to the up position with your hand.

B. Lubrication of the Bolt (Ref. Fig. 1)

- (1) Remove and discard the cotter pin (2).
- (2) Remove the nut (3), the washer (4), the washer (6) and the bolt (7) and disconnect the spoiler control rod (1) from the spoiler actuator lever (5).
- (3) Clean the bolt (7), the washers (4 and 6) and the nut (3) with the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-010).

CAUTION: DO NOT LET THE SOLVENT (MATERIAL NO. P01-010) GO INTO THE BEARING OF THE ROD-END OF THE SPOILER CONTROL ROD (1). IT WILL CAUSE THE BEARING TO BECOME DRY AND SEIZE.

- (4) Clean the rod-end of the spoiler control rod (1) with the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-010).
- (5) Let the rod-end of the spoiler control rod (1), the bolt (7), the washers (4 and 6) and the nut (3) dry.
- (6) Put the spoiler control rod (1) in position in the spoiler actuator lever (5).
- (7) Apply a layer of the grease (Material No. P04-028) to the plain part of the bolt (7).
- (8) Install the bolt (7), the washer (4), the washer (6) and the nut (3).
- (9) Tighten the nut until there is 0.4 mm (0.016 in.) axial play on the bolt (7).
- (10) If necessary, continue to tighten the nut (3) until the hole for the cotter pin (5) aligns with the next cut-out in the nut (3).
- (11) Make sure the axial play is more than 0.1 mm (0.004 in.).
- (12) Safety the nut (3) with the cotter pin (2).
- (13) Do Steps 3.B.(1) thru (12) for the other spoiler.

C. Close up

- (1) Energize the aircraft electrical system (Ref. AMM, 24-40-00-00A-331A-A).

WARNING: BE CAREFUL BEFORE YOU PRESSURIZE THE HYDRAULIC SYSTEM. MAKE SURE THAT THE POSITION OF THE CONTROL COLUMN AND THE AIRBRAKE SWITCH AGREES WITH THE POSITION OF THE CONTROL SURFACES. THE SUDDEN MOVEMENT OF THE CONTROL SURFACES CAN CAUSE AN INJURY TO THE PERSONS AND CAN CAUSE DAMAGE TO THE EQUIPMENT.

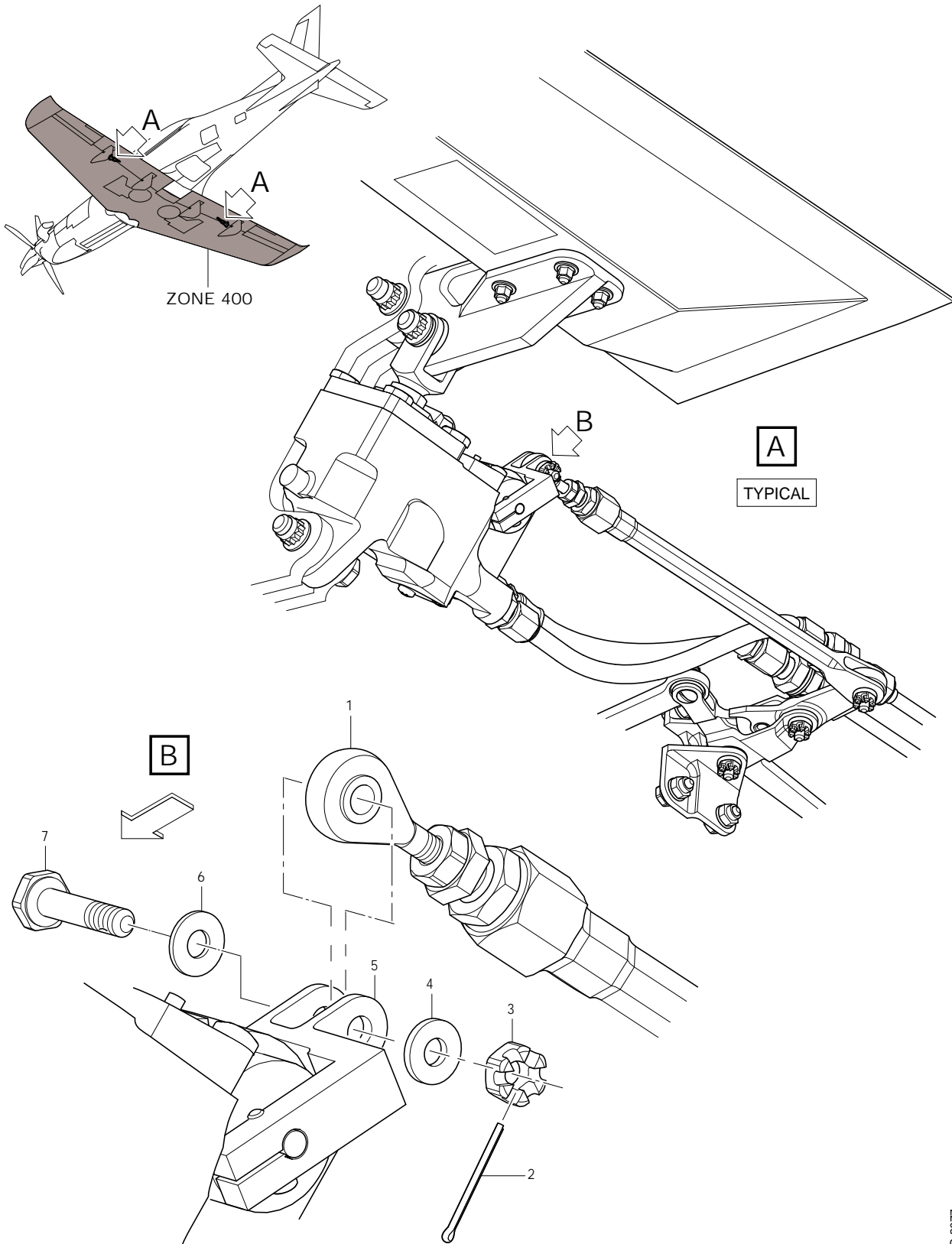
- (2) Energize the HGPU.
- (3) Set the HGPU delivery pressure to 207 bar (3000 psi).

WARNING: BE CAREFUL WHEN YOU OPERATE THE CONTROL SURFACES. MAKE SURE PERSONS AND EQUIPMENT ARE AWAY FROM THE AREA AROUND THE CONTROL SURFACES. A SUDDEN MOVEMENT OF THE CONTROL SURFACES CAN CAUSE AN INJURY TO THE PERSONS AND CAN CAUSE DAMAGE TO THE EQUIPMENT.

- (4) Put the control column in the front cockpit in the neutral position.
- (5) Make sure that the spoiler actuators are compressed fully and the spoilers are in the down position.
- (6) Move the control column in the front cockpit fully to the right position.
- (7) Make sure the right aileron and the right spoiler move to the fully up position.
- (8) Put the control column in the front cockpit in the neutral position.
- (9) Make sure that the spoiler actuators are compressed fully and the spoilers are in the down position.
- (10) Move the control column in the front cockpit fully to the left position.
- (11) Make sure the left aileron and the left spoiler move to the fully up position.
- (12) Put the control column in the front cockpit in the neutral position.
- (13) Make sure that the spoiler actuators are compressed fully and the spoilers are in the down position.
- (14) Set the flap control lever to the UP position.
- (15) Make sure that the flaps move smoothly to the up position.
- (16) De-energize the HGPU.
- (17) Disconnect the HGPU from the aircraft (Ref. AMM, 29-00-00-00A-332A-A).
- (18) De-energize the aircraft electrical system (Ref. AMM, 24-40-00-00A-332A-A).
- (19) Remove the warning panels.
- (20) Do the close up procedure for the FCS, (Ref. AMM, 27-00-00-00A-525A-A).
- (21) Remove all equipment, materials and tools from the work area. Make sure that the work area is clean.

D. Documentation

- (1) Make an entry in the Aircraft Logbook that this Service Bulletin has been incorporated.
- (2) Use the Service Bulletin Evaluation Sheet and report your results and the serial number of the aircraft to PILATUS.



Lubrication of the Bolt
Figure 1

SB 2077

SERVICE BULLETIN EVALUATION SHEET FOR SB No. 27-005			
Title	Flight Controls - Spoilers Lubrication of the Spoiler Control Rod-to-Spoiler Actuator Connection-Bolt		
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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