

Service Bulletin No: 53-011

Ref No: 69

Modification No: EC-09-0734

ATA Chapter: 53

**FUSELAGE - GENERAL
INSPECTION OF THE FORWARD ELECTRICAL BONDING POINTS****1. Planning Information****A. Effectivity**

PC-9(M) aircraft MSN 605 and MSN 617 thru MSN 670.

B. Concurrent Requirements

None.

C. Reason**(1) Problem**

Corrosion has been reported at the bonding strap connections on the left and right lower longerons between fuselage frames 1 and 1A.

(2) Cause

The contact faces of the longeron and bonding strap are susceptible to corrosion. The possibility of corrosion is increased because of the high electrical current flow between the tinned copper terminal lug of the bonding strap and the aluminum longeron.

(3) Solution

Do an inspection of the longeron in the specified areas and, if necessary, remove the corrosion. Apply to Pilatus for a repair scheme if the removal of corrosion decreases the metal thickness to less than the specified limits.

The Aircraft Maintenance Manual Chapter 05 will be revised to include repeat inspections.

D. Description

This Service Bulletin gives the data and instructions necessary to:

- (1) Remove the bonding straps from the longerons.
- (2) Examine the areas for corrosion.
- (3) Remove any corrosion found.
- (4) Install the bonding straps.

E. Compliance

Mandatory.

Required within the next 120 days after the effective date of this Service Bulletin.

F. Approval

The technical content of this Service Bulletin is approved under FOCA approved procedures.

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.

G. Manpower

	Total (No corrosion found)	Total (Corrosion found)
Preparation	1.5	1.5
Removal	0.25	0.25
Inspection	0.75	0.75
Repair	-	3.0
Installation	0.5	0.5
Close Up	1.5	1.5
TOTAL MAN-HOURS	4.5	7.5

NOTE: Man-hours figures do not include the time required to cure sealants, paints and adhesives.

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

No change.

(2) Moment Change

No change.

I. Electrical Load Data

Not affected.

J. Software

Not affected.

K. References

Aircraft Maintenance Manual (AMM), 06-20-00, 20-31-00, 20-40-10, 25-10-00, 25-10-01, 25-30-02.

L. Publications Affected

Aircraft Maintenance Manual (AMM), 05-05-01, 05-12-01.

M. Interchangeability of Parts

Not applicable.

2. Material Information
A. Material - Price and Availability

Operators who require more information should contact:

PILATUS AIRCRAFT LTD,
 CUSTOMER LIAISON MANAGER,
 CH 6371 STANS, Tel: +41 41 619 62 26 (Government)
 SWITZERLAND Fax: +41 41 619 61 70

Repair Kit Number	Price	Availability
500.50.09.074	Contact address above	Contact address above
500.50.09.075	Contact address above	Contact address above

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

NOTE: The kits are necessary only if a repair is required. The kits are for one forward bonding point. Each aircraft has two forward bonding points.

(a) Repair Kit No. 500.50.09.074 has these parts:

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	DISP. CODE	FIG. NO.	ITEM NO.
932.19.21.227	BOLT, HEX HD, AN5-6A	932.19.21.227	1	D	1	5
938.07.68.306	NUT, SLFLKG, MS21045-5E	938.07.68.306	1	D	1	7
938.77.11.117	WASHER, FLAT, NAS1149F0563P	938.77.11.117	2	D	1	6
532.30.09.308	WASHER, SPECIAL	-	1	N	-	-

Disposition Codes: D - Discard / N - New / R- Return to Pilatus

(b) Repair Kit No. 500.50.09.075 has these parts:

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	DISP. CODE	FIG. NO.	ITEM NO.
119.40.07.344	BONDING STRAP	119.40.07.344	1	D	1	4

Disposition Codes: D - Discard / N - New / R- Return to Pilatus

(2) Operator Supplied Parts

Part No.	Description	Qty	Remarks
938.77.11.117	WASHER, FLAT, NAS1149F0563P	A/R	Additional washers if required to install the bonding straps

(3) Operator Supplied Materials (Ref. AMM 20-31-00)

Material No.	Description	Qty	Remarks
P01-008	SOLVENT	A/R	
P02-001	LOCKWIRE	A/R	
P02-009	ABRASIVE CLOTH	A/R	Grade 120
P02-011	ABRASIVE CLOTH	A/R	Grade 240
P02-016	SCOTCH-BRITE	A/R	Very fine grade
P02-031	ABSORBENT PAPER	A/R	
P07-021	ALODINE 1132	A/R	Touch-N-Prep
P07-007	EPOXY PRIMER	A/R	
P10-013	CPC-HIGH T	A/R	
-	AA2024-T3 TEST PIECE (2 TO 3 MM THICK)	1	Small piece of AA2024-T3 sheet used to calibrate the ultrasonic thickness gage

(4) Operator Supplied Tools

Description	Remarks
NON-METALLIC SCRAPERS	-
BOROSCOPE	If required for the inspection
ULTRA VIOLET LIGHT	To do a check of the CPC-High T coating
OLYMPUS 35 SERIES THICKNESS GAGE EQUIPPED WITH M202H-RM PROBE	Or equivalent ultrasonic thickness gage capable of measuring the thickness of the longeron web at the forward bonding points

C. Material Necessary for Each Spare

Not applicable.

D. Re-identified Parts

Not applicable.

3. Accomplishment Instructions

WARNING: BEFORE YOU GO INTO THE COCKPIT, MAKE SURE THAT BOTH EJECTION SEATS HAVE THE SAFETY PINS INSTALLED IN THE SAFE FOR SERVICING LOCATIONS (REF. AMM 25-10-00).

A. Preparation

- (1) Remove the front ejection seat (Ref. AMM 25-10-01, Page Block 401).
- (2) Remove the left and right front-lower side-panels from the cockpit (Ref. AMM 25-30-02, Page Block 401).
- (3) Open the fuel and hydraulic compartment access panels F4 and F6 (Ref. AMM 06-20-00, Page Block 1).

CAUTION: DO NOT SCORE OR DAMAGE THE AIRCRAFT SKIN OR LONGERON WHEN YOU CUT THE INSULATION.

- (4) In the cockpit, carefully cut and remove a small piece of the side insulation to get access to the bonding point as follows:
 - Cut immediately above the upper edge of the longeron where there is a gap between the insulation and the skin
 - Remove the insulation to approximately 50 mm (2 in.) aft of the bonding point
- (5) In the fuel and hydraulic compartments, if necessary:
 - Carefully cut and remove a small piece of the insulation to get access to the nut of the bonding point

B. Remove the Bonding Strap (Ref. Fig. 1)

NOTE: It is not necessary to completely remove the bonding strap unless you find it to be corroded during the inspection. This procedure is applicable to the left and right bonding strap connections.

- (1) If the bonding connection is oversealed, use a non-metallic scraper and solvent (Material No. P01-008) to remove the sealant.
- (2) Remove the nut (7) and the washers (6).

NOTE: Some aircraft can have only one washer (6) installed under the nut (7).

- (3) Remove the bolt (5) and washer (6) to disconnect the terminal lug of the bonding strap (4) from the longeron.

C. Inspection (Ref. Fig. 1)

WARNING: BE CAREFUL WHEN YOU USE THE CONSUMABLE MATERIALS. READ AND OBEY THE MANUFACTURERS HEALTH AND SAFETY INSTRUCTIONS.

NOTE: This procedure is applicable to the left and right bonding points.

(1) Examine the longeron:

- (a) Use absorbent paper (Material No. P02-031) and solvent (Material No. P01-008) to clean:
 - the bore of the bolt hole
 - the top surface of the longeron around the bolt hole
- (b) Do a visual inspection for corrosion in the bore of the bolt hole and the area around the bolt hole. If necessary, use a borescope to do this.
- (c) If you find corrosion, do the Repair (Ref. Para. D.).

(2) Examine the terminal lug of the bonding strap:

- (a) Use absorbent paper (Material No. P02-031) and solvent (Material No. P01-008) to clean the terminal lug of the bonding strap (4).
- (b) Examine the terminal lug for corrosion.
- (c) Remove all corrosion with Scotch-Brite (Material No. P02-016).
- (d) Examine the terminal lug again to make sure the protective tin coating is serviceable. If you can see the copper metal of the terminal lug, remove the bonding strap (4) as follows:

1 If the bonding connection on FR 1 is oversealed, use a non-metallic scraper and solvent (Material No. P01-008) to remove the sealant.

2 In the engine compartment, hold the head of the bolt (1).

NOTE: At the right connection, the bolt can have locking wire. If necessary, record the position, then cut and remove the locking wire.

3 Remove the nut (3) and washer (2).

4 Remove and discard the bonding strap (4).

(3) Examine the attaching parts:

- (a) Use absorbent paper (Material No. P02-031) and solvent (Material No. P01-008) to clean the removed bolt (5), washers (6) and nut (7).
- (b) Examine the bolt, washers and nut for corrosion.
- (c) Discard all parts that are corroded.

D. Repair

WARNING: BE CAREFUL WHEN YOU USE THE CONSUMABLE MATERIALS. READ AND OBEY THE MANUFACTURERS HEALTH AND SAFETY INSTRUCTIONS.

NOTE: This procedure is applicable to the left and right bonding points.

- (1) Make a copy of the Report Form (Fig. 2).
- (2) If you found corrosion in the bolt hole:

CAUTION: BE CAREFUL WHEN YOU DRILL THE BOLT HOLE. DO NOT DAMAGE ADJACENT PIPES OR WIRES.

- (a) Enlarge the bolt hole with an 8,6 mm drill.

NOTE: Drill the bolt hole from below in the fuel or hydraulic compartment.

- (b) Deburr the hole and examine the bore for corrosion.
- (c) If you find corrosion, enlarge the bolt hole with a 9,0 mm drill.
- (d) Deburr the hole and examine the bore for corrosion.
- (e) If you find corrosion, stop the procedure and contact Pilatus for more repair information:

Pilatus Aircraft Ltd.,
Customer Technical Support (MCC),
P.O. Box 992,
6371 Stans, Switzerland
Tel: +41 (0)41 619 33 03
Fax: +41 (0)41 619 67 73
Email: Techsupport@pilatus-aircraft.com

- (3) If you found corrosion on the surface of the longeron:
 - (a) Use abrasive cloth (Material No. P02-009) to remove the corrosion.
 - (b) Use abrasive cloth (Material No. P02-011) to make the area smooth.
 - (c) Use Scotch-Brite (Material No. P02-016) to polish the area.
- (4) Use a vacuum cleaner to remove all dust and debris from the work area.
- (5) Use absorbent paper (Material No. P02-031) and solvent (Material No. P01-008) to clean the repair area.
- (6) Make sure the contact area for the terminal lug of the bonding strap is flat.

NOTE: This is to make sure there is a good electrical contact between the terminal lug and the longeron.

CAUTION: APPLY THE ALODINE 1132 IMMEDIATELY AFTER YOU REMOVE THE CORROSION TO PREVENT THE BUILD UP OF OXIDES ON THE BARE METAL.

- (7) Read and obey the manufacturer's instructions and apply Alodine 1132 (Material No. P07-021) to the bare metal area (Ref. AMM 20-40-10, Page Block 201).
- (8) Calibrate the ultrasonic thickness gage:
 - (a) Use a micrometer or vernier caliper to measure the thickness of the AA2024-T3 test piece.
 - (b) Use the ultrasonic thickness gage to measure the thickness of the AA2024-T3 test piece and adjust the gage to get the value measured in Step (a).
- (9) Measure (with the ultrasonic thickness gage) and record this data on a copy of the Report Form (Fig. 2):
 - The minimum thickness of the metal in the repaired area(s). Use the grid on the Report Form to record the position of the measurement(s)
 - The shape and area(s) where you removed corrosion
- (10) If the thickness of the longeron at any position is less than 1,9 mm, stop the procedure and contact Pilatus for more repair information:

Pilatus Aircraft Ltd.,
Customer Technical Support (MCC),
P.O. Box 992,
6371 Stans, Switzerland
Tel: +41 (0)41 619 33 03
Fax: +41 (0)41 619 67 73
Email: Techsupport@pilatus-aircraft.com
- (11) Read and obey the manufacturer's instructions and apply epoxy primer (Material No. P07-007) on top of the Alodine 1132. Do not apply epoxy primer to the contact area for the terminal lug of the bonding strap
- (12) Restore the surface paint finish in the repair area as necessary. Do not apply paint to the contact area for the terminal lug of the bonding strap

E. Install the Bonding Strap (Ref. Fig. 1)

NOTE: This procedure is applicable to the left and right bonding strap connections.

- (1) If you re-connect the same bonding strap (4):
 - (a) If you found no corrosion on the longeron and did not apply Alodine to the bonding point:
 - 1 Use Scotch-Brite (Material No. P02-016) to remove the old Alodine from the contact area for the terminal lug of the bonding strap (4).
 - 2 Use absorbent paper (Material No. P02-031) and solvent (Material No. P01-008) to clean the contact area for the terminal lug of the bonding strap (4).

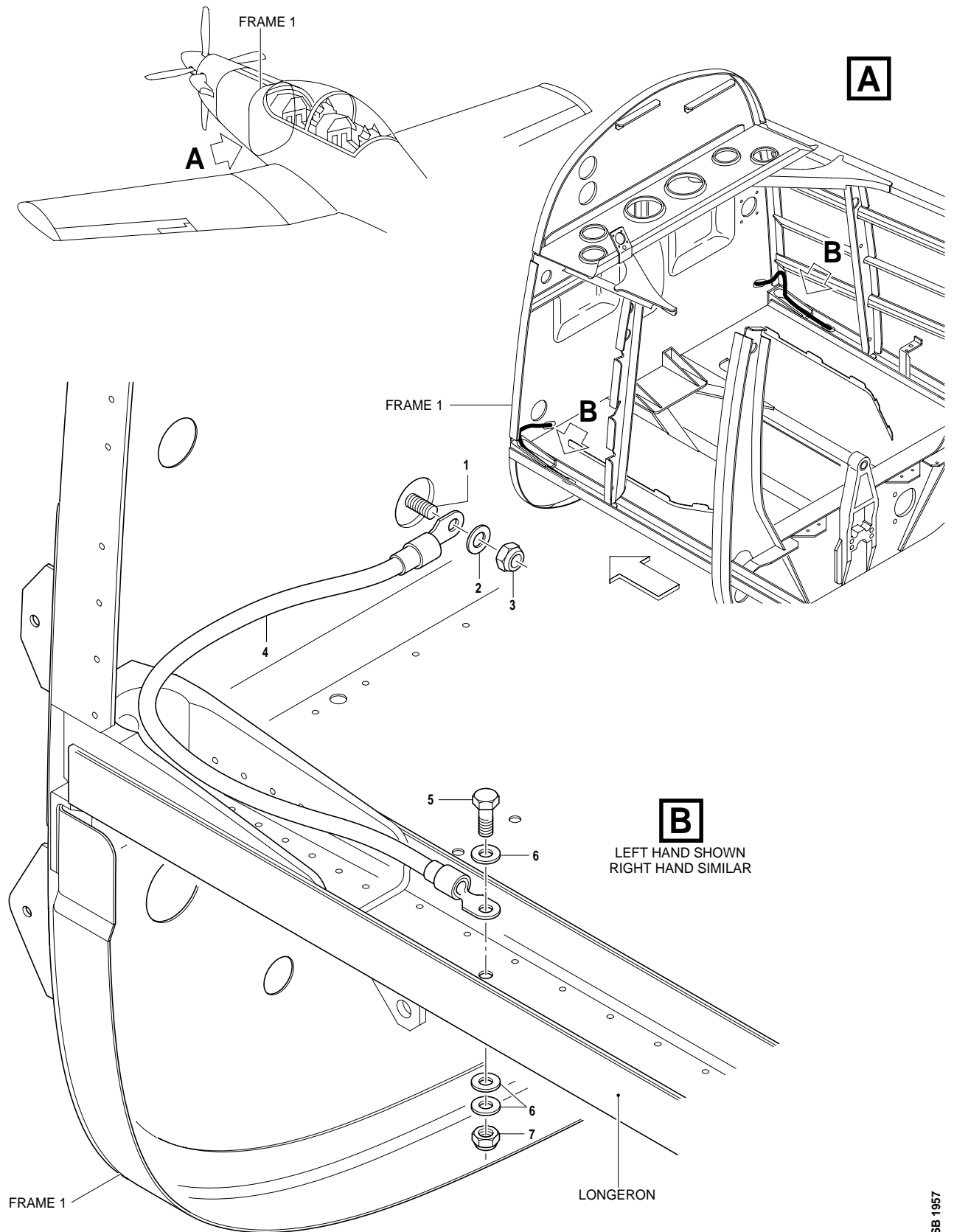
H. Reporting Action

- (1) Send the completed Report Form (Fig. 2) to:

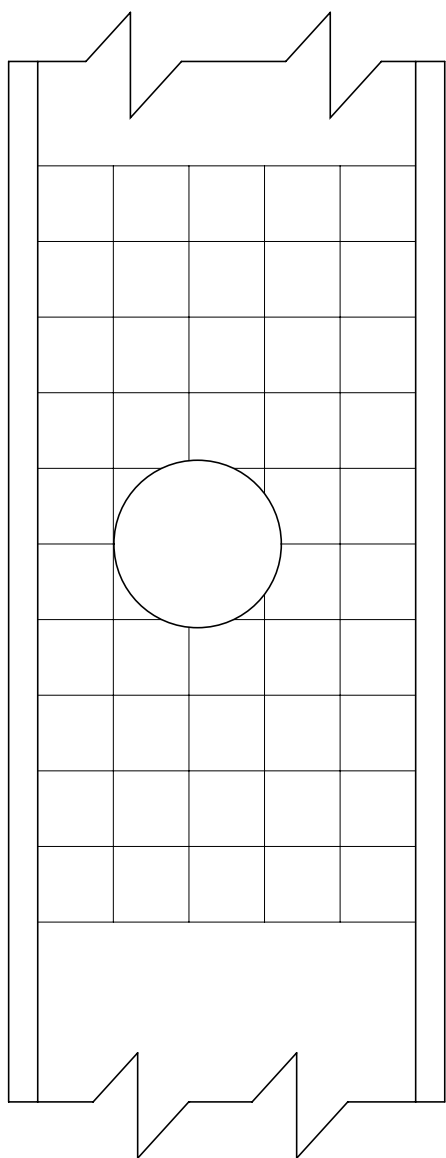
Pilatus Aircraft Ltd.,
Customer Technical Support (MCC),
P.O. Box 992,
6371 Stans, Switzerland
Tel: +41 (0)41 619 33 03
Fax: +41 (0)41 619 67 73
Email: Techsupport@pilatus-aircraft.com

I. Documentation

- (1) Make an entry in the Aircraft Logbook that this Service Bulletin has been incorporated.
- (2) Put a copy of the completed Report Form (Fig. 2) in the Aircraft Logbook.
- (3) Use the Service Bulletin Evaluation Sheet and report your results and the serial number(s) of the aircraft to Pilatus.

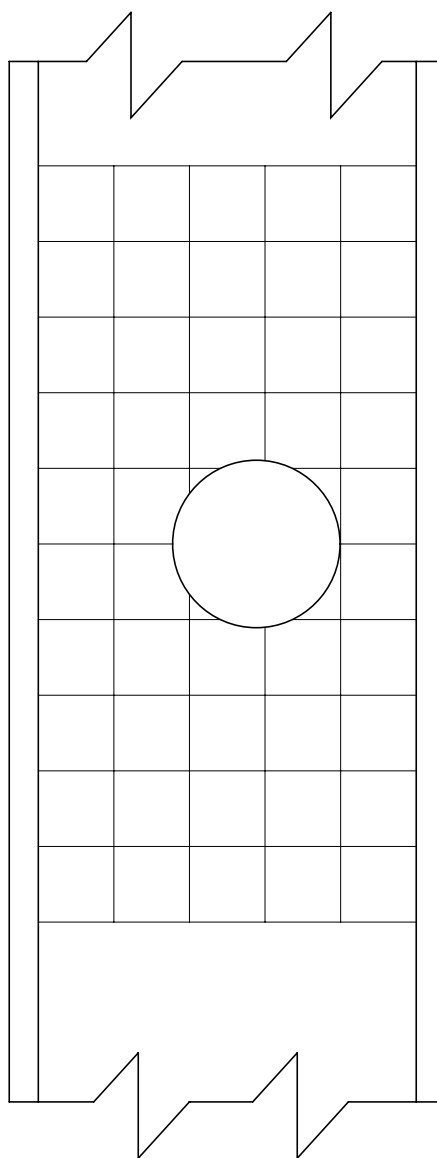


Bonding Strap - Removal/Installation
Figure 1



VIEW ON TOP
OF LEFT
LONGERON

SPECIAL WASHER P/N 532.30.09.308
INSTALLED ON LEFT SIDE. YES / NO



VIEW ON TOP
OF RIGHT
LONGERON

SPECIAL WASHER P/N 532.30.09.308
INSTALLED ON RIGHT SIDE. YES / NO

MSN No.

TAIL No.

DATE

FLYING HOURS

LANDINGS

SB 1959

Report Form
Figure 2

SERVICE BULLETIN EVALUATION SHEET FOR SB No. 53-011			
Title	Fuselage - General Inspection of the Forward Electrical Bonding Points		
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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