

SERVICE BULLETIN

SERVICE BULLETIN NO: 27-020

REF NO: 228

MODIFICATION NO: INSPECTION

ATA CHAPTER: 27

FLIGHT CONTROLS - ELEVATOR CONTROL SYSTEM DO A CHECK OF THE TENSION ON THE STICK-PUSHER SERVO-CABLES

1. Planning Information

A. Effectivity

All PC-12, PC-12/45, PC-12/47 MSNs 101 thru 544 and MSNs 546 thru 888, and PC-12/47E MSN 545 and MSNs 1001 thru 1101.

This Service Bulletin supersedes Service Bulletin 27-018.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

Some Operators have reported that the stick-pusher servo-cables are loose.

(2) Cause

Ambiguous information in the adjustment procedure for the stick-pusher cable tension.

(3) Solution

Inspection of the stick-pusher servo-cables installation and adjustment of the stick pusher cable tension according to the new AMM procedure, which introduces a higher cable tension and accounts for cable relaxation during the assembly.

D. Description

This Service Bulletin gives the instructions and data necessary to:

- Do a check to make sure the stick-pusher servo-cables are installed correctly, set to the correct position and at the correct tension
- If necessary, replace the attachment hardware that holds the forward and aft cable clamps together.

Revision No. 1 is issued to add MSN 545 to the effectivity, replace aircraft MSNs with PC-12 types and minor editorial changes.

≡PILATUS≡
PC12
SERVICE BULLETIN

E. Compliance

Mandatory.

Required within the next 150 flying hours or not later than Mar 31/09, whichever comes first, unless already accomplished.

F. Approval

The technical content of this document is approved under the authority of DOA No. EASA. 21J. 357.

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

| Task | Man-hours Standard Interior | Man-hours Executive Interior |
|------------------------|--|---|
| Preparation | 0.75 | 1.50 |
| Check and modification | 1.00 | 1.00 |
| Close-Up | <u>0.75</u> | <u>1.50</u> |
| TOTAL MAN-HOURS | 2.50 | 4.00 |

H. Weight and Balance

(1) Weight Change

Not affected.

(2) Moment Change

Not affected.

I. Electrical Load Data

Not affected.

J. Software

Not changed.

PILATUS
PC12
SERVICE BULLETIN

K. References

Aircraft Maintenance Manual (AMM)

| PC-12, PC-12/45, PC-12/47 | PC-12/47E |
|--|--|
| 12-A-06-20-00-00A-040A-A | 12-B-06-20-00-00A-040A-A |
| 12-A-20-20-01-00A-040A-A | 12-B-20-20-01-00A-040A-A |
| 12-A-20-31-00-00A-070A-A | 12-B-20-31-00-00A-070A-A |
| 12-A-22-20-06-00A-920A-A | 12-B-22-20-06-00A-920A-A |
| 12-A-25-21-04-00A-920A-A | 12-B-25-21-04-00A-920A-A |
| 12-A-25-21-06-00A-920A-A | 12-B-25-21-06-00A-920A-A |
| 12-A-25-21-07-00A-920A-A | 12-B-25-21-07-00A-920A-A |
| 12-A-25-22-04-00A-920A-A | 12-B-25-22-04-00A-920A-A |
| 12-A-27-00-00-00A-313A-A | 12-B-27-00-00-00A-313A-A |
| 12-A-27-30-00-00A-903A-A See Note 1 | 12-B-27-30-00-00A-903A-A See Note 2 |

NOTE 1: Use Temporary Revision No. 27-02 if the AMM is at Revision 18 or earlier. If the AMM is at Revision 19 or later, use the procedure in the AMM.

NOTE 2: Use Temporary Revision No. 27-01 if the AMM is at Revision 0. If the AMM is at Revision 1 or later, use the procedure in the AMM.

L. Publications Affected

None affected

M. Interchangeability of Parts

Not applicable.

PILATUS
PCI2
SERVICE BULLETIN

2. Material Information

A. Material - Price and Availability

(1) No modification kit is necessary for this Service Bulletin.

B. Material Necessary for Each Aircraft

(1) Material to be Procured:

NOTE: New nuts, bolts and washers can be procured locally or from Pilatus.

| NEW PART NO. | DESCRIPTION | OLD PART NO. | QTY | DISP. CODE | FIG | ITEM |
|----------------------------------|-------------|----------------------------------|-----|------------|-----|------|
| 932.35.14.005 (NAS6603-5) | BOLT | 932.19.21.027 (AN3-5A) | 6 | D | 1 | 5 |
| 938.77.11.113 (NAS1149F0363P) | WASHER | 938.77.11.112 (NAS1149F0332P) | 6 | D | 1 | 2 |
| 938.09.14.303 (NAS1804-3N) | NUT | 938.07.68.504 (MS21042-3) | 6 | D | 1 | 1 |

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

(2) Additional Material to be Procured

NOTE: These parts are only necessary if the stick-pusher servo-cables have moved in the cable clamps (2 clamps are necessary for each position).

| NEW PART NO. | DESCRIPTION | OLD PART NO. | QTY | DISP. CODE | FIG | ITEM |
|---------------|--------------|---------------|-----|------------|-----|--------|
| 527.20.12.108 | CLAMP | 527.20.12.108 | 4 | D | 1 | 3 4 |
| 940.17.29.401 | LOCKING CLIP | 940.17.29.401 | 2 | D | - | - |

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

(3) Operator Supplied Materials

(Ref. AMM 12-A-20-31-00-00A-070A-A or 12-B-20-31-00-00A-070A-A)

| MATERIAL NO. | DESCRIPTION | QTY | REMARKS |
|--------------|-------------|-----|---|
| P04-029 | GREASE | A/R | P04-004 and P04-028 are suitable alternatives for P04-029 for this application. |

C. Warranty

Credit will be issued for all affected aircraft on approval of a warranty claim, provided the work is accomplished by an authorized service center, and the inspection/check is carried out within 150 flying hours but not later than Mar 31/09.

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PC12
SERVICE BULLETIN

D. Material Necessary for Each Spare

Not applicable.

E. Re identified Parts

Not applicable.

F. Tooling - Cost and Availability

Not applicable.

PILATUS
PC12
SERVICE BULLETIN

3. Accomplishment Instructions

A. Preparation

- (1) Put up a warning sign DO NOT OPERATE THE FLIGHT CONTROLS in the flight compartment.
- (2) Move the elevator controls to the center position and install the rigging block assembly on the pilot's control column. Install the rigging pin in the left elevator horn.
- (3) Open and install a safety tag on the circuit breaker:
 - (a) For PC-12, PC-12/45 and PC-12/47
PUSHER SYS (BATTERY BUS).
 - (b) For PC-12/47E
PUSHER SYS (ESSENTIAL BUS).
- (4) For aircraft in the Executive role:

NOTE: You can access the forward cable clamps, with a small amount of difficulty, through the access panel 12BZ. If you choose to do the work through this panel, you do not have to remove the toilet or the storage cabinet.

- Remove the center and right carpets between FR16 and FR24 (Ref. AMM, 12-A-25-21-04-00A-920A-A or 12-B-25-21-04-00A-920A-A)
 - Remove the toilet, as necessary (Ref. AMM, 12-A-25-21-07-00A-920A-A or 12-B-25-21-07-00A-920A-A)
 - Remove the right storage cabinet, as necessary (Ref. AMM, 12-A-25-21-06-00A-920A-A or 12-B-25-21-06-00A-920A-A).
- (5) For aircraft in the Standard role, remove the center and right carpets between FR16 and FR24 (Ref. AMM, 12-A-25-22-04-00A-920A-A or 12-B-25-22-04-00A-920A-A).
 - (6) Open the access panels 12CZ and 12FZ or 12BZ and 12FZ (Ref. AMM, 12-A-06-20-00-00A-040A-A or 12-B-06-20-00-00A-040A-A).

B. Inspection (Ref. Fig 1)

- (1) Do a check to make sure the stick-pusher servo-cables are installed correctly, set to the correct position and at the correct tension:
 - For PC-12, PC-12/45 and PC-12/47, refer to Temporary Revision No. 27-02 if the AMM is at Revision 18 or earlier. If the AMM is at Revision 19 or later, use the procedure in the AMM, refer to 12-A-27-30-00-00A-903A-A.
 - For PC-12/47E, refer to Temporary Revision No. 27-01 if the AMM is at Revision 0. If the AMM is at Revision 1 or later, use the procedure in the AMM, refer to 12-B-27-30-00-00A-903A-A.

≡PILATUS≡
PC12
SERVICE BULLETIN

(2) If the stick-pusher servo-cables are not installed correctly or not set to the correct position, adjust as necessary:

- For PC-12, PC-12/45 and PC-12/47, refer to Temporary Revision No. 27-02 if the AMM is at Revision 18 or earlier. If the AMM is at Revision 19 or later, use the procedure in the AMM, refer to 12-A-27-30-00-00A-903A-A.
- For PC-12/47E, refer to Temporary Revision No. 27-01 if the AMM is at Revision 0. If the AMM is at Revision 1 or later, use the procedure in the AMM, refer to 12-B-27-30-00-00A-903A-A.

(3) If the stick-pusher servo-cables are not at the correct tension, look for signs that the cables have moved in the cable clamps (3) and (4) installed between FR20 and FR23.

(4) If there are signs that the stick-pusher servo-cables have moved in the cable clamps (3) and (4) installed between FR20 and FR23:

- (a) Remove the two locking clips from the turnbuckle that connects the two stick-pusher servo-cables. Discard the locking clips.
- (b) Loosen, but do not disconnect the turnbuckle.
- (c) Remove and discard the nuts (1), the washers (2) and the bolts (5) from the forward and aft cable clamps (3) and (4).
- (d) Remove and discard the cable clamps (3) and (4).

NOTE: You do not have to discard the cable clamps (3) and (4) that showed **NO** signs of movement. These can be used again.

- (e) Examine the cables (6) and (7) adjacent to the position where you removed the cable clamps (3) and (4) (Ref. AMM 12-A-27-00-00-00A-313A-A or 12-B-27-00-00-00A-313A-A). Replace as necessary.
- (f) Get new cable clamps (3) and (4), as necessary, and new nuts (1), washers (2) and bolts (5).

CAUTION: THE ELEVATOR CABLE (6) HAS A LARGER DIAMETER THAN THE STICK-PUSHER SERVO-CABLE (7) AND MUST BE INSTALLED IN THE LARGER GROOVE OF THE CLAMPS (3) AND (4).

- (g) Put the clamps (3) and (4) in position on the elevator cable (6) and the stick-pusher servo-cable (7).
- (h) Apply grease (Material No. P04-029) to the threads of the bolts (5) and the nuts (1) and loosely install all six bolts (5), washers (2) and nuts (1).
- (i) Make sure the stick-pusher servo-cable is correctly installed on the capstan (Ref. AMM 12-A-22-20-06-00A-920A-A or 12-B-22-20-06-00A-920A-A).
- (j) Make sure the clamps (3) and (4) are in correct position and tighten the nuts (1).

CAUTION: MAKE SURE YOU ADD THE RUN-DOWN TORQUE OF THE NUTS (REF. AMM 12-A-20-20-01-00A-040A-A OR 12-B-20-20-01-00A-040A-A) TO THE VALUE GIVEN IN STEP 3.B.(4)(k). DO NOT APPLY ANY CORRECTION FACTORS.

- (k) Torque the nuts to between 4 and 4,5 Nm (35 and 40 lb in.).


SERVICE BULLETIN

- (l) Do the adjustment of the tension of the stick-pusher servo-cables:
- For PC-12, PC-12/45 and PC-12/47, refer to Temporary Revision No. 27-02 if the AMM is at Revision 18 or earlier. If the AMM is at Revision 19 or later, use the procedure in the AMM, refer to 12-A-27-30-00-00A-903A-A.
 - For PC-12/47E, refer to Temporary Revision No. 27-01 if the AMM is at Revision 0. If the AMM is at Revision 1 or later, use the procedure in the AMM, refer to 12-B-27-30-00-00A-903A-A.

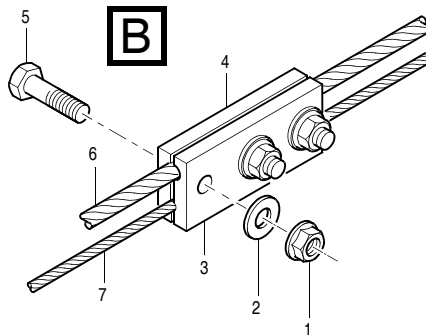
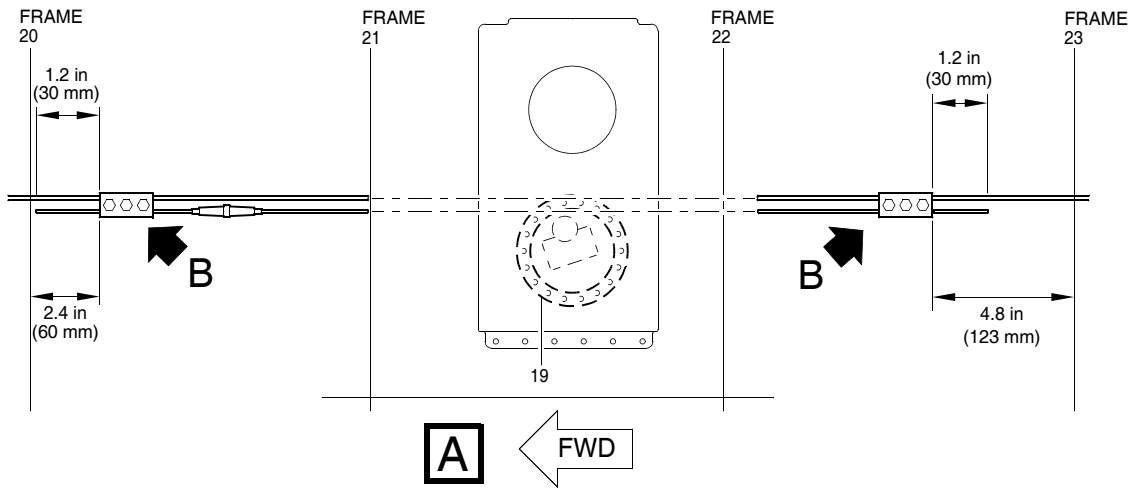
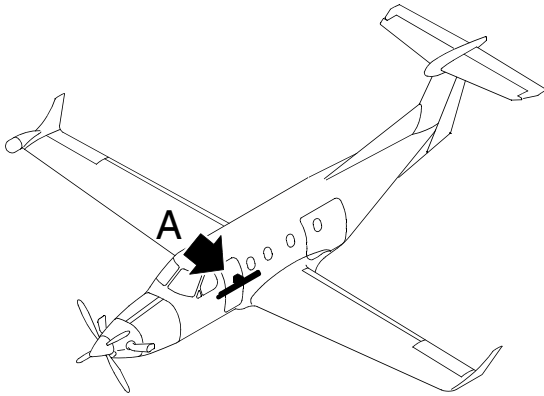
C. Close up

- (1) Remove all tools and materials. Make sure the work areas are clean.
- (2) Remove the rigging block assembly from the pilot's control column. Remove the rigging pin from the left elevator horn.
- (3) Remove the safety tag and close the circuit breaker:
 - (a) For PC-12, PC-12/45 and PC-12/47
PUSHER SYS (BATTERY BUS).
 - (b) For PC-12/47E
PUSHER SYS (ESSENTIAL BUS).
- (4) Remove the warning sign DO NOT OPERATE THE FLIGHT CONTROLS from the flight compartment.
- (5) Do the pre-flight stick pusher test.
- (6) Make sure the cable clamps have not moved.
- (7) Close the access panels 12EZ and 12FZ or 12BZ and 12FZ (Ref. AMM, 12-A-06-20-00-00A-040A-A or 12-B-06-20-00-00A-040A-A).
- (8) For aircraft in the Executive role:
 - If necessary, install the cabinet you removed (Ref. AMM, 12-A-25-21-06-00A-920A-A or 12-B-25-21-06-00A-920A-A)
 - If necessary, install the toilet (Ref. AMM, 12-A-25-21-07-00A-920A-A or 12-B-25-21-07-00A-920A-A)
 - Install the center and right carpets between FR16 and FR24 (Ref. 12-A-25-21-04-00A-920A-A or 12-B-25-21-04-00A-920A-A)
- (9) For aircraft in the Standard role, install the center and right carpets between FR16 and FR24 (Ref. AMM, 12-A-25-22-04-00A-920A-A or 12-B-25-22-04-00A-920A-A).

D. Documentation

- (1) Make an entry in the Aircraft Logbook that this Service Bulletin has been incorporated.

PILATUS
PC12
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Replacement of the Attachment Hardware and Location of the Cable Clamps
Figure 1

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