

SERVICE BULLETIN

SERVICE BULLETIN NO: 46-002

REF NO: 71

MODIFICATION NO: EC 09-0027

ATA CHAPTER: 46

SYSTEMS INTEGRATION AND DISPLAY - GENERAL REPLACE THE PRIMARY FLIGHT DISPLAY (PFD)

1. Planning Information

A. Effectivity

- (1) All PC-7(MkII) aircraft MSNs 606 thru 616 and MSNs 675 thru 684.
- (2) All PFD units (P/N 546.30.09.003) held as spare, or in stores.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

An Operator reported an incident on one of his fleet of aircraft that has a PFD installed. Before taxi, the pilot set the flaps to TO and confirmed a TO position indicated on the PFD. Before take-off, he was informed by the formation leader that his flaps were still up. The circuit breaker was cycled and the flaps moved to TO, UP and TO again. The flaps remained up but the PFD indication showed flaps TO. Flaps LAND was then selected and LAND position confirmed visually and on the PFD. Flaps TO was selected again and it was confirmed visually that the flaps moved from LAND to the TO position. The same problem occurred on the next flight.

(2) Cause

Investigation revealed that the microswitch on the flap actuator that controls TO position and indication had a broken spring.

The flap actuator has three microswitches which control the UP, LAND and TO position and indication. However, whereas the UP and LAND microswitches will generate their respective position indication regardless of the position of the flap control lever, the TO microswitch can only generate a TO indication when the flap control lever is also set to the TO position. This means that a failure of either of the other two microswitches would be immediately apparent due to a spurious Indication, but a failure of the TO microswitch in the TO position could be invisible to the pilot as an incorrect indication can only be given when the flap control lever is set to TO. Currently the PFD software does not permit multiple flap position indications. If multiple position signals are generated by the microswitches in the flap actuator only one position is indicated. The logic for this is:

- LAND has priority over TO
- TO has priority over UP.

PILATUS
PC-7 MK II
SERVICE BULLETIN

(3) Solution

The PFD software has been upgraded to make sure it is compatible with the EID and also to implement the flap logic improvement. The new PFD flap logic software indicates FLAPS in red, immediately if more than one flap position discretises go active.

D. Description

This Service Bulletin gives the data and instructions necessary to update the software on the PFD units.

E. Compliance

Mandatory.

To be accomplished as soon as possible, but within 3 months of the issue date of this Service Bulletin.

F. Approval

The technical content of this Service Bulletin is approved under FOCA accepted 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

| | Man-Hours |
|---------------------------|------------|
| Preparation | 0.5 |
| Modification of PFD Units | 0.5 |
| Close up | 1.0 |
| TOTAL MAN-HOURS | 2.0 |

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

H. Weight and Balance

(1) Weight Change

Not affected.

(2) Moment Change

Not affected.

I. Electrical Load Data

Not changed.

J. Software

The software for the PFD is updated from Part Number 262505-0017 to 262505-0022.

PILATUS
PC-7 MK II
SERVICE BULLETIN

K. References

Aircraft Maintenance Manual (AMM):

For Operators that use ATA
100 documentation

For Operators that use IETP
documentation:

20-31-00

P3-A-20-31-00-00A-010A-A

24-00-00

P3-A-24-00-00-00A-100A-A

25-10-00

P3-A-46-31-01-00A-520A-A

46-30-01

P3-A-46-31-01-00A-720A-A

P3-A-95-10-00-00A-012A-A

L. Publications Affected

Illustrated Parts Catalogue (IPC), 46-30-01.

M. Interchangeability of Parts

One-way interchangeable. Pre Service Bulletin 46-002 PFD units must not be installed on Post Service Bulletin aircraft.

PILATUS
PC-7 MK II
SERVICE BULLETIN

2. Material Information

A. Material - Price and Availability

No modification kit is necessary to do this Service Bulletin.

Operators who require further information should contact:

PILATUS AIRCRAFT LTD,
CUSTOMER LIAISON MANAGER,
CH 6371 STANS,
SWITZERLAND

Tel: +41 41 619 62 26 (Government)
Fax: +41 41 619 61 70

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 Purchased

Part Numbers, given in this Service Bulletin, are correct at the time of approval. PILATUS AIRCRAFT LTD. reserves the right to change the part numbers as necessary

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

| NEW PART NO. | DESCRIPTION | OLD PART NO. | QTY | DISP. CODE |
|---------------|-------------|---------------|-----|------------|
| 511.30.09.439 | PLACARD | 511.30.09.428 | 2 | D |

Disposition Codes: D - Discard / N - New / R - Return to Pilatus
Discard all the other removed old parts

C. Operator Supplied Materials

(For Operators that use ATA 100 documentation, refer to AMM, 20-31-00):

(For Operators that use IETP documentation, refer to DM P3-A-20-31-00-00A-010A-A):

| Material No. | Description | Qty | Remarks |
|--------------|---|-----|---------------------------|
| P01-011 | Solvent, Alcohol (Isopropyl (Isoproponol)) | A/R | Pilatus P/N 908.44.52.005 |
| P02-031 | Absorbent Paper | A/R | Pilatus P/N 904.49.73.004 |

D. Tools and Equipment:

None.

PILATUS
PC-7 MK II
SERVICE BULLETIN

3. Accomplishment Instructions

WARNING: MAKE SURE THAT BOTH EJECTION SEATS HAVE THE SAFETY PINS INSTALLED IN THE SAFE FOR SERVICING LOCATIONS BEFORE YOU GO INTO THE COCKPIT (FOR OPERATORS THAT USE ATA 100 DOCUMENTATION, REFER TO AMM, 25-10-00, PAGE BLOCK 201).
(FOR OPERATORS THAT USE IETP DOCUMENTATION, REFER TO DM P3-A-95-10-00-00A-012A-A).

A. Preparation

- (1) Make sure the aircraft electrical system is de-energized
(For Operators that use ATA 100 documentation, refer to AMM, 24-00-00, Page Block 201).
(For Operators that use IETP documentation, refer to DM P3-A-24-00-00-00A-100A-A).
- (2) In the front and rear cockpits, open and install a safety clip to the circuit breakers:

PFD (BATTERY AVIONIC BUS CB panel)
PFD (GENERATOR AVIONIC BUS CB panel).
- (3) Make sure that the COCKPIT LIGHTS - INSTR switch is set to OFF.
- (4) Remove the PFD unit (P/N 975.96.32.727) from the front and rear cockpits
(For Operators that use ATA 100 documentation, refer to AMM, 46-30-01, Page Block 401).
(For Operators that use IETP documentation, refer to DM P3-A-46-31-01-00A-520A-A).

B. Modification

- (1) Make a note of the position of the placards (P/N 511.30.09.428) on the PFD units.
- (2) Remove the placards (P/N 511.30.09.428) from the PFD units.
- (3) Use the absorbent paper (Mat. No. P02-031), made moist with the solvent (Mat. No. P01-011), and clean the area where you removed the placard.
- (4) Either:
 - Give the PFD units (P/N 975.96.32.727) to the manufacturer's working party for them to update the software in the PFD units to version 0022or
 - Get a previously modified unit from stores and return the unmodified PFD unit to Pilatus.
- (5) On a modified PFD unit (P/N 975.96.32.730), install the new placards (P/N 511.30.09.439) in the same position as the removed placards (Ref Step 3.B.(1)).

C. Job Close-Up

- (1) Make sure the work area is clean and clear of tools and other items.
- (2) Install the modified PFD units in the front and rear cockpits
(For Operators that use ATA 100 documentation, refer to AMM, 46-30-01, Page Block 401).
(For Operators that use IETP documentation, refer to DM P3-A-46-31-01-00A-720A-A).

PILATUS PC-7 MK II SERVICE BULLETIN

- (3) In the front and rear cockpits, remove the safety clips and close the circuit breakers:

PFD (BATTERY AVIONIC BUS CB panel)
PFD (GENERATOR AVIONIC BUS CB panel).

- (4) Do a test of the PFDs (front and rear cockpit) as follows:

- (a) Energize the aircraft electrical system
(For Operators that use ATA 100 documentation, refer to AMM, 24-00-00, Page Block 201).
(For Operators that use IETP documentation, refer to DM P3-A-24-00-00-00A-100A-A).
- (b) Make sure that the PFD comes on and shows the applicable primary flight indications (no red crosses displayed and no red captions displayed on the top right of the PFD display).
- (c) On the PFD, press and hold the REF/CYC key for more than 5 seconds to enter the PFD maintenance mode.

NOTE: The aircraft must be on the ground for the selection of the PFD maintenance page.

- (d) On the PFD, make sure the part number, the version, and the CRC displayed for FLT, TBL and UMS are the same as shown in Table 2.

| | P/N | VER | CRC |
|-----|-------------|--------|----------|
| FLT | 262505-0022 | PILT | 77754914 |
| TBL | 262505-0022 | PILT | 8C24128C |
| UMS | 500409-0044 | RMAF01 | 8EF965EA |

Table 2

- (e) De-energize the aircraft
(For Operators that use ATA 100 documentation, refer to AMM, 24-00-00, Page Block 201).
(For Operators that use IETP documentation, refer to DM P3-A-24-00-00-00A-100A-A).

D. Documentation

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

PILATUS
PC-7 MK II
SERVICE BULLETIN

4. Accomplishment Instructions – Spares

A. Procedure

- (1) Make a note of the position of the placards (P/N 511.30.09.428) on the PFD units.
- (2) Remove the placards (P/N 511.30.09.428) from the PFD units.
- (3) Use the absorbent paper (Mat. No. P02-031), made moist with the solvent (Mat. No. P01-011), and clean the area where you removed the placard.
- (4) Tell the manufacturer's working party to update the software in the PFD units to version 0022.
- (5) On a modified PFD unit (P/N 975.96.32.730), install the new placards (P/N 511.30.09.439) in the same position as the removed placards (Ref Step 4.A.(2)).

B. Documentation

- (1) Make an entry on the equipment label that this Service Bulletin has been incorporated.
- (2) Make sure the equipment label shows the new assembly part number (P/N 546.30.09.006) of the PFD unit.

PILATUS
PC-7 MK II
SERVICE BULLETIN

INTENTIONALLY BLANK