FINAL REPORT

SERIOUS INCIDENT 2022/2456

State Commission on Aircraft Accidents Investigation (PKBWL)

UL. CHAŁUBIŃSKIEGO 4/6, 00-928 WARSZAWA | DUTY PHONE (+48) 500 233 233

FINAL REPORT

SERIOUS INCIDENT

OCCURRENCE NO – 2022/2456

AIRCRAFT – Airplane, Tecnam P2006T, SP-MMB

DATE AND PLACE OF OCCURENCE – 23 May 2022, EPBC

The Report is a document presenting the position of the State Commission on Aircraft Accidents Investigation concerning circumstances of the air occurrence, its causes and safety recommendations. The Report was drawn up on the basis of information available on the date of its completion.

The investigation may be reopened if new information becomes available or new investigation techniques are applied, which may affect the wording related to the causes, circumstances and safety recommendations contained in the Report.

Investigation into air the occurrence was carried out in accordance with the applicable international, European Union and domestic legal provisions for prevention purposes only. The investigation was carried out without application of the legal evidential procedure, applicable for proceedings of other authorities required to take action in connection with an air occurrence.

The Commission does not apportion blame or liability.

In accordance with Article 5 paragraph 6 of the Regulation (EU) No 996/2010 of the European Parliament and of the Council on the investigation and prevention of accidents and incidents in civil aviation […] and Article 134 of the Act – Aviation Law, the wording used in this Report may not be considered as an indication of the guilty or responsible for the occurrence.

For the above reasons, any use of this Report for any purpose other than air accidents and incidents prevention can lead to wrong conclusions and interpretations.

This Report was drawn up in the Polish language. Other language versions may be drawn up for information purposes only.

WARSAW 2023

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Abbreviations

AIP	Aeronautical Information Publication
AMSL	Above Mean Sea Level
ATPL(A)	Airline Transport Pilot License
EASA	European Union Aviation Safety Agency
FI	Flight Instructor
IR	Instrument Rating
LAPL	Light Airplane Pilot Licence
LMT	Local Mean Time
MEP(L)	Multi Engine Piston (Land)
OC	Third party liability insurance
PKBWL	State Commission on Aircraft Accidents Investigation [Poland]
PPL(A)	Private Pilot Licence (Aircraft)
SEP(L)	Single Engine Piston (Land)
CAA/ULC	Civil Aviation Authority [Poland]
UTC	Universal Time Coordinated

General Information

<table>
<tr><td>Occurrence reference number:</td><td colspan="4">2022/2456</td></tr>
<tr><td>Type of occurrence:</td><td colspan="4">SERIOUS INCIDENT</td></tr>
<tr><td>Date of occurrence:</td><td colspan="4">23 May 2022</td></tr>
<tr><td>Place of occurrence:</td><td colspan="4">EPBC</td></tr>
<tr><td>Type and model of aircraft:</td><td colspan="4">Airplane, Tecnam P2006T</td></tr>
<tr><td>Aircraft registration marks:</td><td colspan="4">SP-MMB</td></tr>
<tr><td>Aircraft user/operator:</td><td colspan="4">Ventum Air Sp. z o.o.</td></tr>
<tr><td>Aircraft Commander:</td><td colspan="4">ATPL(A)</td></tr>
<tr><td rowspan="2">Number of victims/injuries:</td><td>Fatal</td><td>Serious</td><td>Minor</td><td>None</td></tr>
<tr><td>-</td><td>-</td><td>-</td><td>2</td></tr>
<tr><td>Domestic and international authorities informed about the occurrence:</td><td colspan="4">ULC, EASA, EU, ANSV [Italy]</td></tr>
<tr><td>Investigator-in-charge:</td><td colspan="4">Krzysztof Błasiak</td></tr>
<tr><td>Investigating authority:</td><td colspan="4">State Commission of Aircraft Accidents Investigation (PKBWL)</td></tr>
<tr><td>Accredited Representatives and their advisers:</td><td colspan="4">ACCREP – Italy
Technical Advisor to ACCREP – Tecnam</td></tr>
<tr><td>Document containing results:</td><td colspan="4">FINAL REPORT</td></tr>
<tr><td>Safety recommendations:</td><td colspan="4">YES</td></tr>
<tr><td>Addressees of the recommendations:</td><td colspan="4">Aircraft manufacturer – Costruzioni Aeronautiche Tecnam</td></tr>
<tr><td>Date of completion of the investigation:</td><td colspan="4">9 November 2023</td></tr>
</table>

Synopsis

On the day of the occurrence, the crew consisting of a student-pilot and an instructor was performing a training flight from EPBC aerodrome. The flight was uneventful. After returning to EPBC, the crew started the landing gear extension procedure. Despite moving the landing gear lever to the “down” position several times, the signal of the extended landing gear did not appear. The "EMERGENCY CHECKLIST LDG GEAR" procedure was executed. The alternate landing gear extension system failed. The crew landed with the landing gear retracted on a grassy runway, damaging the lower fuselage skin.

The investigation was conducted by:

Krzysztof Błasiak	Investigator-in-Charge (PKBWL).

Cause of the occurrence:

Inappropriate components used by the manufacturer of the Tecnam P2006T aircraft in the landing gear extension and retraction system.

Contributing factors:

1) Errors in the alternate landing gear extension procedure.
2) Insufficient securing of the lever mounted on the shaft of the FIRST DISCHARGE valve against spontaneous loosening.

PKBWL proposed four safety recommendations for the airplane manufacturer.

1. FACTUAL INFORMATION

1.1. History of the flight

On the day of the occurrence, the crew consisting of the student-pilot and the flight instructor performed a training flight. The take-off from the EPBC aerodrome took place at 15:05[1] hrs LMT and the planned flight time was 4 hours and 30 minutes. The flight was uneventful.

After returning to EPBC, the crew started the landing gear extension procedure. Despite moving the landing gear lever to the “down” position several times, the signal of the extended landing gear did not appear. In that situation, in accordance with *"P2006T - Aircraft Flight Manual, Section 3 - Emergency procedures, LANDING GEAR SYSTEM FAILURES",* the procedure *"EMERGENCY CHECKLIST LDG GEAR"* was executed, but it ended in failure.

The crew reported landing gear problems to the flight coordinator on EPBC, and then performed a low pass over the aerodrome. Persons on the ground confirmed that the landing gear was not extended. After notifying the aerodrome services a fire assistance was provided and the crew landed with the landing gear retracted on a grass runway, damaging the lower fuselage skin.

1.2. Injuries to persons

Injuries	Crew	Passengers	Others	Total
Fatal	**-**	**-**	**-**	**-**
Serious	**-**	**-**	**-**	**-**
Minor	**-**	**-**	**-**	**-**
None	**2**	**-**	**n/a**	**2**

[1] All Times in the Report are given in LMT, on the day of the accident LMT=UTC+2 h

1.3. Damage to aircraft

Fig. 1. Tecnam P2006T, SP-MMB**,** aircraft on the occurrence site [source: PKBWL[2]]

Fig. 2. Tecnam P2006T, SP-MMB, aircraft on the occurrence site

As a result of the serious incident, the lower skin of the airframe, including the main landing gear nacelles, was damaged. After the occurrence, the plane was lifted, the landing gear was extended and the aircraft was towed to an apron.

1.4. Other damage

None.

1.5. Personnel information (crew data)

Flight instructor - male, aged 62, holder of ATPL(A) issued on 27 September 2006 with the following ratings:

1) SEP(L) valid until 29 February 2024;
2) MEP(L) valid until 31 October 2022;
3) IR valid until 31 October 2022;

[2] Unless otherwise indicated the source is PKBWL.

4) FI valid until 31 October 2024;
5) TMG valid until 29 February 2024;
6) Cessna SET valid until 31 May 2023;
7) SEP(S) valid until 30 April 2023;
8) B777/787/IR valid until 30 November 2022;
9) Banner towing;
10) Glider towing;
11) Acrobatic flights.

On the day of the occurrence, the instructor had:

- total flight time - about 25 200 FH;
- over the last 90 days - 210 FH;
- over the last 24 hours prior to the occurrence - 10 FH;
- on the occurrence type:
  - total – about 250 FH; including
  - over the last 90 days - 9 FH; and
  - over the last 24 hours prior to the occurrence - 4:40 FH.

Student-pilot - male, aged 26, holder of PPL(A) issued on 18 October 2016 with the following ratings:

1) SEP(L) valid until 30 September 2022;
2) MEP(L) valid until 30 April October 2023;
3) NF (night flights).

On the day of the occurrence, the student-pilot had:

- total flight time - about 221:10 FH;
- over the last 90 days – 28:53 FH; and
- over the last 24 hours prior to the occurrence - 4:15 FH;
- on the occurrence type:
  - total - 21:17 FH;
  - over the last 90 days - 13:04 FH;
  - over the last 24 hours prior to the occurrence - 4:15 FH.

The above flight times include the serious incident flight time.

The flight instructor and the student-pilot had valid aero-medical certificates.

1.6. Aircraft information

Tecnam P2006T is a twin-engine, four-seat high-wing aircraft designed for training for multi-engine airplanes.

Table 1. Tecnam P2006T, SP-MMB, data

Year of manufacture	2017
Manufacturer	Costruzioni Aeronautiche Tecnam
Serial number	188
Register number	5047
Registration certificate issue date	04 July 2017

Airworthiness review certificate validity date:	18 July 2022
Flight time since new	2609:48 FH
Number of flights since new	4334
Last maintenance date:	20 May 2022
Airworthiness certificate validity date:	28 June 2022

The mass and center of gravity of the aircraft were within permissible limits.
Two electric relays are installed in the circuit supplying power to the motor of the hydraulic pump of the landing gear retraction and extension system (Fig. 3 and 4).

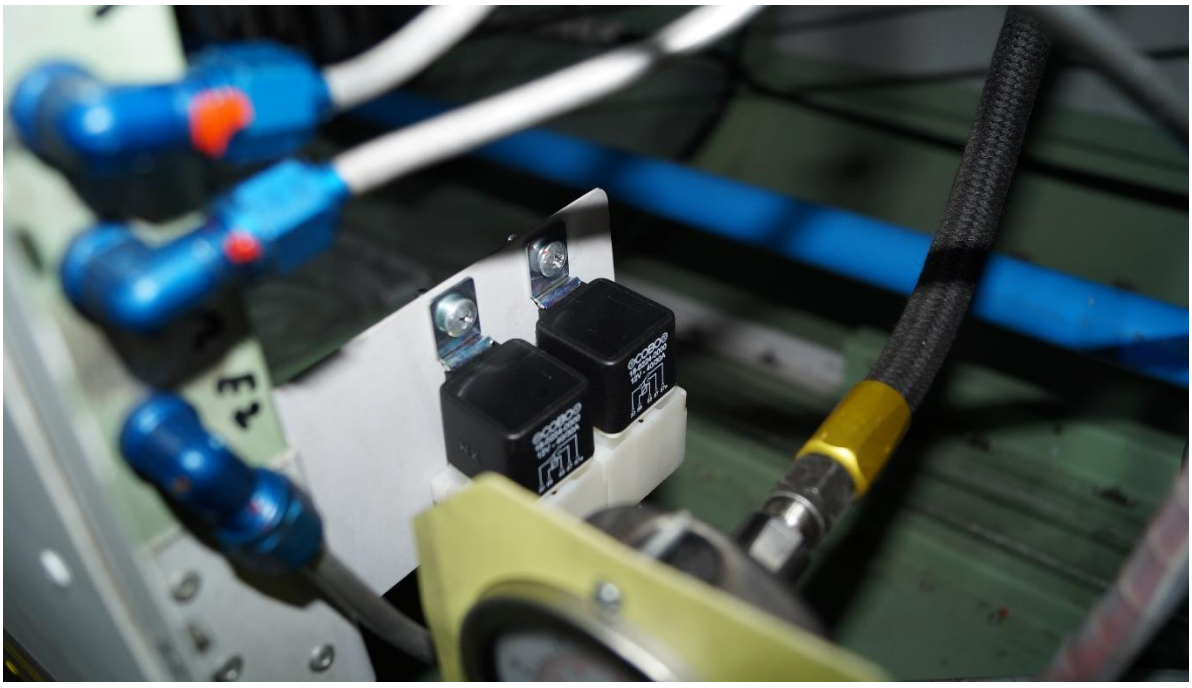

Fig. 3. Landing gear extension and retraction system electrical relays installed on Tecnam P2006T aircraft

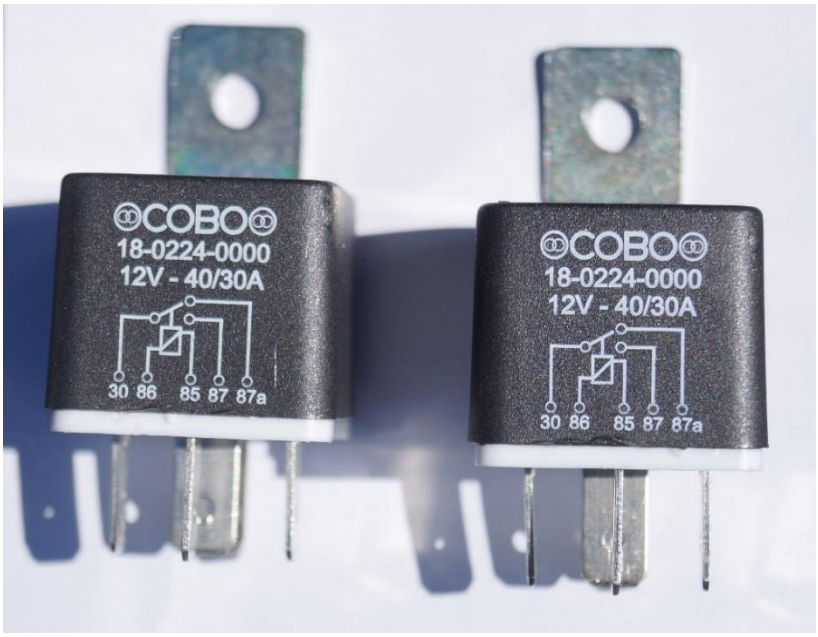

Fig. 4. Landing gear extension and retraction system electrical relays removed from the Tecnam P2006T aircraft

According to the marking on the housing of each relay, the maximum current load of the relays is 40/30A[3].

1.7. Meteorological information

The weather was appropriate to perform the flight and had no impact on the occurrence.

1.8. Aids to navigation

No concerns regarding aids to navigation were raised.

1.9. Communications

During flight, the crew maintained radio contact with "kwadrat - Babice Radio", from which the flights were coordinated at EPBC that day. After a failed attempt to extend the landing gear, the crew reported this fact and then flew over the “kwadrat – Babice Radio" position to check the landing gear. The “kwadrat” personnel confirmed that the the landing gear was not extended, and also declared an alert for airport services. The crew did not raise any concerns to the quality of communication.

1.10. Aerodrome information

Warszawa-Babice aerodrome (EPBC) was the departure and planned destination aerodrome.

EPBC is located in Warsaw, in the Bemowo district on the border with the Bielany district.

The airport is managed by the Logistic Services Center (Centrum Usług Logistycznych) - an institution subordinated to the Ministry of the Interior and Administration. Airport users include: Warsaw Aeroclub (Aeroklub Warszawski), Polish HEMS and several pilot training organizations.

EPBC has two runways:

– Main Runway (GDS) - 1,301 m long and 90 m wide, made of 25 cm thick concrete;
– Runway strip - 1000 x 150 m in size, located along the Main Runway (GDS) on its northern side at a distance of 30 m, grassy, used mainly by sport aviation and as a spare runway for the Main Runway.

[3] Designation of relays with two output contacts with different current ratings. In this case: NC(30A) NO(40A). NC – normally closed contact. This contact is closed when the relay coil is de-energized and opens when the relay coil is energized. NO – normally open contact. This contact is open when the relay coil is de-energized and closed when the relay coil is energized.

Table 2. EPBC runway geographic data [source: Logistic Services Centre]

RWY designation	Geographic and magnetic direction	Coordinates of the thresholds	The level of the thresholds and the highest point of the touchdown zone on the precision approach runway
Main Runway			
10R	102° GEO 098° MAG	52° 16 13,63 N 020° 53 52,49 E	104,6 m AMSL
28L	282° GEO 278° MAG	52°16 04, 48 N 020°54 59,47 E	107,2 m AMSL
Runway strip			
10L	102° GEO 098° MAG	52°16 16,4 N 020°54 08,5 E	104,3 m AMSL
28R	282° GEO 278° MAG	52°16 09,4 N 020°55 00,0 E	106,4 m AMSL

1.11. Flight recorders

The occurrence aircraft was not equipped with flight recorders. No type of recorder was required under the applicable regulations.

1.12. Wreckage and impact information

The plane, despite gear up landing, was only slightly damaged as a result of the airframe construction, which is a high-wing with engines placed significantly above the lower fuselage line and the flat shape of the fuselage lower part. The large experience and high skills of the instructor pilot also had a positive impact on the landing process.

1.13. Medical and pathological information

No medical aspects were found that could have affected the course of the occurrence.

1.14. Fire

Fire did not occur.

1.15. Survival aspects

The crew did not suffer any injuries.

1.16. Tests and research

The aircraft was inspected after the incident. In particular, the standard and alternate landing gear extension system, and the „EMERGENCY CHECKLIST LDG GEAR" procedure issued by the aircraft manufacturer were checked.

In cooperation with the maintenance organization, landing gear retraction and extension tests were carried out when the aircraft was lifted. Simultaneously the electric current consumed by the hydraulic pump of the landing gear retraction and

extension system was measured. Electrical relays in the circuit supplying power to the electric motor of the landing gear hydraulic pump were examined using computer tomography.

PKBWL, in cooperation with the Tecnam P2006T aircraft maintenance organization, measured the current flowing through the relay in the course of retraction and extension of the landing gear. The results of the measurements show that the value of the current depends on several factors. During multiple landing gear extension and retraction in hangar conditions, the values of the maximum current fluctuated in the range of 20-30 A, however, several times reached the value of 38-39 A, and exceeded the value of 40 A twice. The highest current in the circuit was noticed during the first retraction of the landing gear, after a few days' break in the operation of the aircraft. In subsequent cycles, the “warmed up” system presented lower values of the current of the hydraulic pump motor.

Fig. 5. Measurement of the current flowing through the landing gear extension and retraction system electric relays, photographed during the test

The relays that failed on 23 May 2022 were tested using computer tomography. The tests revealed deep burns and deformation of the relay contacts. The images obtained during the tests are shown in Fig. 6 and Fig. 7.

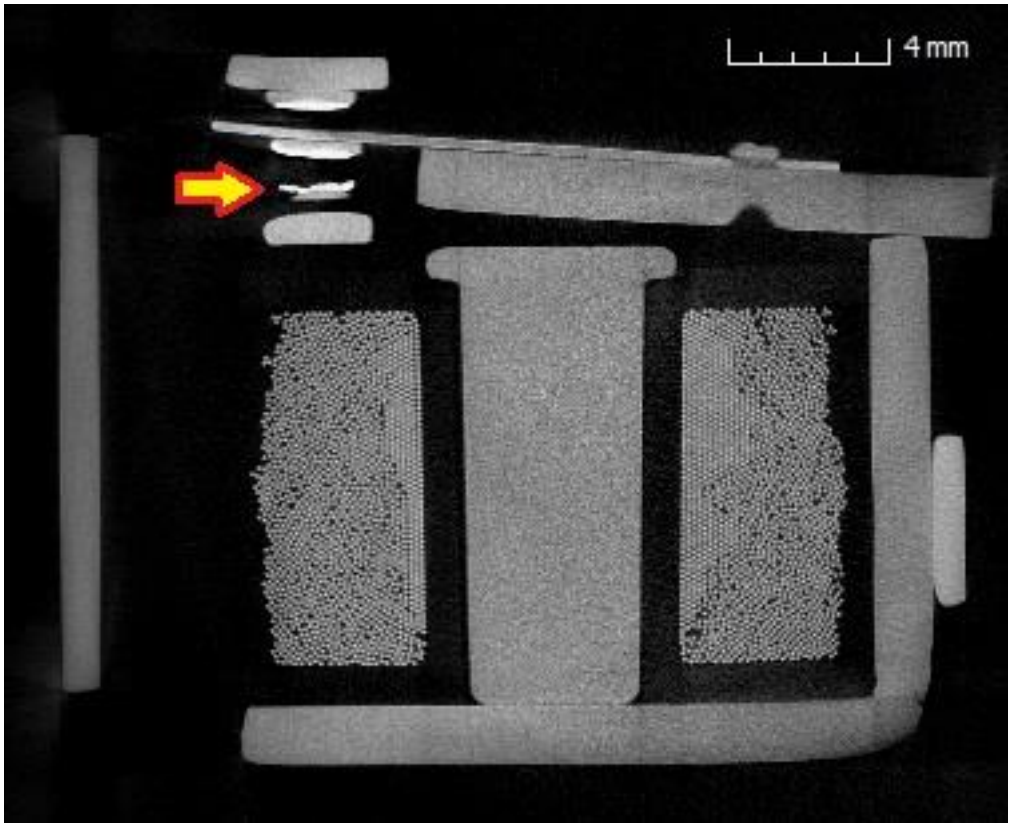

Fig. 6. Internal structure of one of the relays used in the electric circuit of the landing gear hydraulic pump motor. Visible deep burn is seen on the lower contact (marked with an arrow) [source: Warsaw University of Technology]

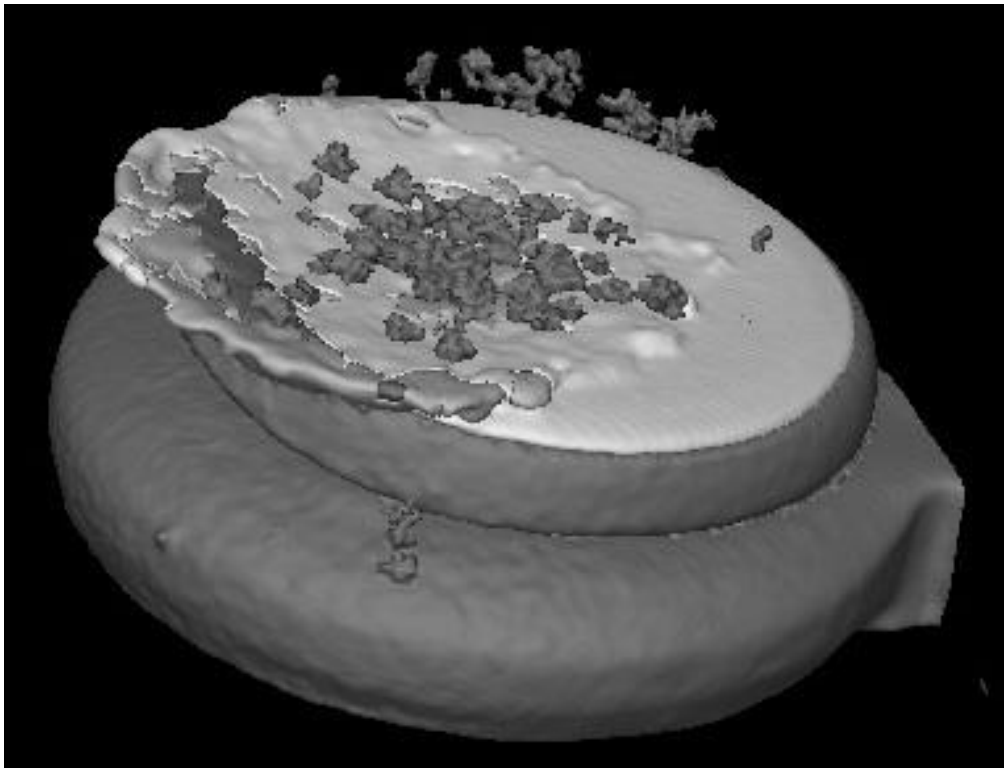

Fig. 7. Degraded contact surface of one of the relays used in the electric circuit of the landing gear hydraulic pump motor [source: Warsaw University of Technology]

During the inspection some other elements of the electric system of the landing gear control circuit, such as wires and electrical connectors also raised concerns. The used components are not appropriate to the current load in this circuit. An example can be the electrical connector shown in Fig. 7 used on the electric motor of the landing gear hydraulic pump. The information obtained from the Tecnam P2006T aircraft maintenance organization shows that there have been cases of overheating and burning of this connector.

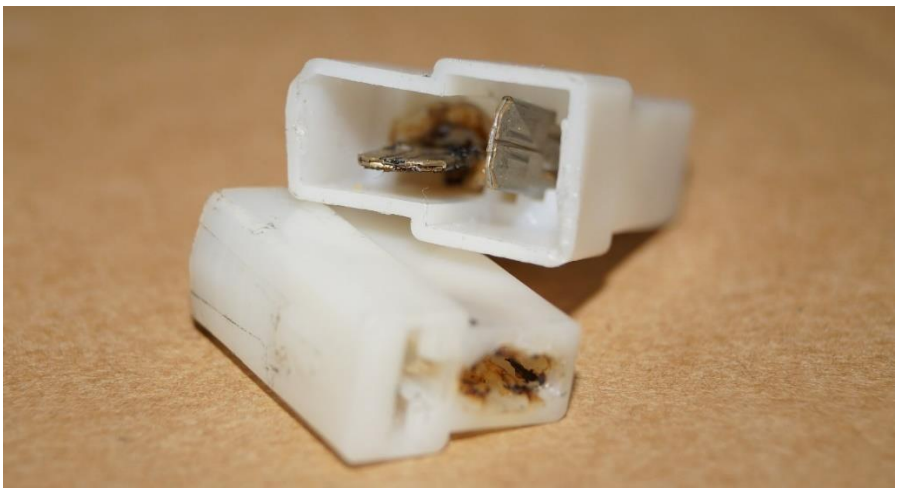

Fig. 8. Damaged electrical connector of the Tecnam P2006T airplane on the electric motor of the landing gear hydraulic pump

During the inspection of the alternate landing gear extension system of the aircraft, the design of mounting the right valve lever of this system (marked "FIRST DISCHARGE") also raised PKBWL concerns.

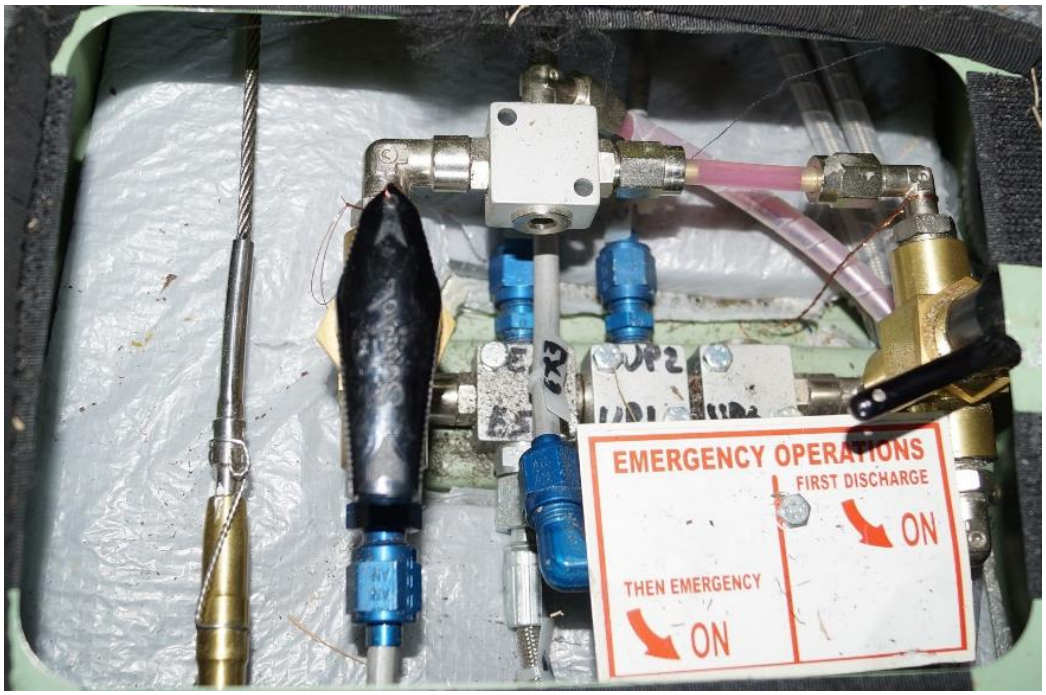

Fig. 9. Valves of the emergency landing gear extension system in the Tecnam P2006T airplane

The lever mounted on the valve shaft has been secured by a single grub screw. If this screw is loosened by just a half of turn, the valve remains closed despite the lever rotation to the ON position, which prevents the landing gear from being extended in an emergency

1.17. Organizational and management information

The flight was performed as part of the training conducted by the Ventum Air – aircraft user. This company is based at the EPBC aerodrome and organizes theoretical and practical training for airplane pilot license.

1.18. Additional information

1.18.1. The incident aircraft repeatedly experienced problems with retracting and extending the landing gear, following the standard procedure. Each time, the cause of the irregularity was electrical relay in the power circuit of the hydraulic pump motor of the landing gear retraction and extension system. The relays installed in this type of aircraft exhibited failures consisting in fusing of their contacts, which means that even after retracting the landing gear, the hydraulic pump motor was still powered, the pump worked and produced pressure, which in turn caused problems with the landing gear extension. The previous incident of this type occurred on the same aircraft on 27 February 2022 (PKBWL reference No: 2022/810), but at that time the landing gear was extended by the alternate system. Following that occurrence, the relays in the system were replaced with new ones. Similar malfunctions also occurred on other aircraft of the same type, such as on 2 October 2021, on SP-ZNA (PKBWL reference No: 2021/3930).

1.18.2. On June 22, 2022, PKBWL sent the Preliminary Report on Serious Incident No. 2022/2456, containing ad hoc safety recommendations, to the following addresses:

- ACCREP of the Agenzia Nazionale per la Sicurezza del Volo (ANSV);

- ACCREP technical advisor.

As of the date of publication of the Final Report, PKBWL has not received a response to the ad hoc recommendations sent.

1.18.3. Before the publication of the Final Report, PKBWL conducted consultations on its draft, asking the Agenzia Nazionale per la Sicurezza del Volo (ANSV) and EASA to submit comments.

EASA made the following comment:

The report states: "1.18. Additional information

The incident aircraft repeatedly had problems with retracting and extending the landing gear according to the standard procedure. Each time, the cause of the irregularity was electrical relay in the power circuit of the hydraulic pump motor of the landing gear retraction and extension system."

In response to EASA's comments, the organisation that performed maintenance on the aircraft that was involved in the incident has provided the following information:

"All Tecnam P-2006T aircraft maintained by the organisation experience problems with the landing gear control transmitters.

The problem occurs more frequently in some models of the aircraft and less frequently in others. When the first Tecnam P-2006T appeared in Poland, this problem occurred very often. At that time, Tecnam introduced a modification by installation diodes (SERVICE BULLETIN N° SB 313) in the electric system of the landing gear pump. After the bulletin was implemented, the problem occurred less frequently, but was not completely eliminated. The organization reported the problem to the aircraft manufacturer; however, no response was received. The Aircraft Maintenance Manual (AMM) does not contain any specific service requirements for addressing this issue.

We are aware that other services and other users also encountering this problem. In collaboration with CAMO, we have implemented an additional restriction by including the landing gear control transmitters in the list of life-limited components. Their overhaul life has been limited to 1,000 hours. Unfortunately, this is not always sufficient, as the wear on the transmitters results from the frequency of opening and closing of the landing gear rather than the hours of operation. Since the opening and closing cycles of the landing gear are not recorded during operation, we cannot impose such a limitation. We have suggested to the manufacturer that they consider using transmitters with a higher power rating, but have not yet received a response.

A fault related to the high frequency of transmitters contact burnout in the SP-MMB aircraft, which was higher than in other aircraft, has been addressed. A comprehensive inspection of the entire electrical system for power and landing gear control revealed overheated and corroded wires in several electrical connectors. This was only detected when the insulation was removed from the cable ends. The SP-MMB aircraft has been repaired and the problem of burning relay contacts no longer occurs as frequently, but it does not provide a definitive solution to the problem.

It would be interesting to learn about the maintenance history with respect to the recurrent problems and the related maintenance manual (troubleshooting manual) content.

Did the maintenance organisation / mechanic follow the Tecnam maintenance procedures when addressing the problems? Did the maintenance organisation report the recurrent problems to Tecnam or the local authority?"

1.19. Useful or effective investigation techniques

Standard investigation techniques were applied. In addition, the faulty relays were subjected to non-invasive tests using computer tomography.

2. ANALYSIS

When the landing gear was tested in hangar conditions, it was not subjected to aerodynamic and inertial forces acting in real flight conditions. It can be assumed that these forces counteracting the retraction of the landing gear inflight cause increase in the current consumed by the motor of the hydraulic pump of the landing gear extension and retraction system to a value exceeding the rated current of the relays shown in Fig. 4. In such situations, the contacts of the electrical relays are systematically loaded above their rated operating parameters, which results in their frequent failures.

A faulty relay (with fused contacts) causes the hydraulic pump motor to operate even when the landing gear extension lever is moved to the “down” position. The procedure of the alternate landing gear extension in the Tecnam P2006T aircraft involves the use of two valves located near legs of a pilot sitting on the left side. When the first (right) valve (marked "FIRST DISCHARGE") is opened, the pressure in the hydraulic system responsible for keeping the landing gear in the retracted position drops, and the landing gear may extend by gravity (under its own weight). Opening the second (left) valve (marked "THEN EMERGENCY") increases the pressure in the hydraulic system responsible for keeping the landing gear in the extended position.

If the relay contacts described above are fused, the hydraulic pump is still operating and keeps the landing gear in the retracted position, even if the first valve is opened. A similar situation may occur in the case of blocking (or breaking) the landing gear lever in the “up” position.

A solution to this problem would be breaking the circuit of the hydraulic pump motor by pulling the circuit breaker labelled "LANDING GEAR". Unfortunately, such an action has not been included in the procedure „EMERGENCY CHECKLIST LDG GEAR”.

Fig. 10. The circuit breakers panel of the Tecnam P2006T aircraft with the marked “LANDING GEAR” circuit breaker

The circuit breaker “LANDING GEAR” should also be marked with a bright colour to avoid an error in a stressful emergency situation when pulling it out.

In the opinion of the PKBWL, the connection of the lever with the valve shaft (Fig. 11) should be changed so that they cannot be accidentally disconnected during operation of the aircraft.

Fig. 11. Connection of the lever with the right-hand valve of the alternate landing gear extension system. The arrow marks the grub screw that prevents the free rotation of the lever on the valve shaft

3. CONCLUSIONS

3.1. Findings

3.1.1. Aircraft

a) The aircraft was certified, equipped and maintained in accordance with applicable procedures.
b) The aircraft was airworthy at the time of take-off.
c) The mass and center of gravity were within permissible limits.

3.1.2. Crew

a) The crew had valid licenses and qualifications to perform the flight in accordance with applicable regulations.
b) The crew had valid aero-medical certificates and was rested.
c) The pilot's actions and statement indicated that his knowledge and understanding of the aircraft systems was sufficient.

3.1.3. Flight operations

a) The flight was performed in accordance with the procedures contained in the Operator Operations Manual.
b) The crew maintained routine radio communication with the appropriate ATC units.
c) Emergency landing with retracted landing gear was performed correctly.

3.1.4. Medical information

a) Physiological factors did not influence the course of the occurrence.

3.2. Causes of the accident

Inappropriate components used by the manufacturer of the Tecnam P2006T aircraft in the landing gear extension and retraction system.

3.3. Contributing factors

1) Errors in the alternate landing gear extension procedure.
2) Insufficient securing of the lever mounted on the shaft of the FIRST DISCHARGE valve against spontaneous loosening

4. SAFETY RECOMMENDATIONS

During the investigation of the occurrence, the PKBWL determined that the technical solutions applied in the landing gear extension and retraction system of Tecnam P2006T aircraft create hazards to the flight safety and, therefore, should be immediately modified as described below in the detailed recommendations.

1) **Recommendation 2022/2456/1**

The value of the current of the hydraulic pump motor of the landing gear in some situations exceeds the value of the rated current of the components used in this circuit, which causes fusing of the relay contacts and overheating of the connector on the hydraulic pump motor.

Therefore, PKBWL recommends that the manufacturer of the Tecnam P2006T airplanes analyses the parameters of the components used in the landing gear retraction and extension system, and then replaces all system components whose load is higher than their rated currents values.

2) **Recommendation 2022/2456/2**

During the investigation the PKBWL determined that if during aircraft operation, the relay contacts in the circuit of the landing gear hydraulic pump motor are fused, or the landing gear lever is blocked in the upper position, the hydraulic pump works and maintains the pressure in the system (despite opening the FIRST DISCHARGE valve), which prevents the landing gear from being extended by the alternate system. In such case, the pressure can be reduced only by pulling out the "LANDING GEAR" circuit breaker.

For the above reasons PKBWL proposes that the manufacturer of Tecnam P2006T airplanes considers a modification of the alternate landing gear extension procedure by adding a provision that in such a need the LANDING GEAR circuit breaker must be pulled out and that the abovementioned circuit breaker must be appropriately marked.

3) **Recommendation 2022/2456/3**

During the investigation PKBWL determined that the lever mounted on the shaft of the FIRST DISCHARGE valve is insufficiently secured against spontaneous loosening. This fact was revealed on the serious incident aircraft. Loosening of the lever allows for its free rotation around the valve shaft, which prevents the valve opening and reduction of the pressure in the system prior to opening THEN EMERGENCY valve.

Therefore, PKBWL recommends that the manufacturer of the Tecnam P2006T aircraft modifies the connection of the FIRST DISCHARGE valve lever with the valve shaft to prevent its spontaneous loosening during operation of the aircraft (e.g. use a splined joint).

4) **Recommendation 2022/2456/4**

Implementation of recommendations **2022/2456/1, 2022/2456/2 and 2022/2456/3** requires time, but irregularities found during the investigation may result in the inability to extend the landing gear via alternate system, which poses a real hazard to flight safety.

Therefore, PKBWL recommends that the manufacturer of the Tecnam P2006T aircraft, issues a service letter/bulletin informing aircraft users about the above problems and defining a temporary solutions, until the above recommendations will have been implemented.

THE END

Investigator-in-Charge

Signature on original

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