

ACCIDENT 2020/1574

State Commission on Aircraft Accidents Investigation (PKBWL) UL. CHAŁUBIŃSKIEGO 4/6, 00-928 WARSZAWA | DUTY PHONE (+48) 500 233 233

# FINAL REPORT

on investigation of an occurrence of an aircraft with MTOW lower than 2250 kg1

# ACCIDENT

OCCURRENCE NO – 2020/1574 AIRCRAFT – Airplane Piper PA-46-500TP, SP-EVA DATE AND PLACE OF OCCURRENCE – 1 July 2020, 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 2022**

<sup>&</sup>lt;sup>1</sup> In accordance with SCAAI procedure, this report format is only applicable to light aircraft and does not fully follow the ICAO template contained in Annex 13 to the Convention on International Civil Aviation.

#### STATE COMMISSION ON AIRCRAFT ACCIDENTS INVESTIGATION (PKBWL) Airplane Piper PA-46-500TP, SP-EVA, EPBC

Occurrence reference number:	2020/1574			
Type of occurrence:	ACCIDENT			
Date of occurrence:	1 July 2020			
Place of occurrence:	EPBC			
Type and model of aircraft:	Airplane Piper PA-46-500TP			
Aircraft registration marks:	SP-EVA			
Aircraft user/operator:	natural person			
Aircraft Commander:	PPL(A)			
Number of victims/injuries:	Fatal	Serious	Minor	None
	-	-	-	1
Domestic and international authorities informed about the occurrence:	Polish Civil Aviation Authority, NTSB (USA), EASA			
Investigator-in-Charge:	Krzysztof Miłkowski (until 28 April 2022) Krzysztof Błasiak (from 29 April 2022)			
Investigating Authority:	State Commission on Aircraft Accidents Investigation (PKBWL)			
Accredited Representatives and their advisers:	Not appointed			
Investigation Team:	Krzysztof Błasiak, Krzysztof Miłkowski			
Document containing results:	Final Report			
Safety recommendations:	NO			
Addressees of the recommendations	Not applicable			
Date of completion of the Investigation:	12.08.2022			

# **1. Type of occurrence**

Accident

# 2. Investigation Authority

State Commission on Aircraft Accidents Investigation (PKBWL)

# 3. Date and time of occurrence

1 July 2020, 19:15 hrs LMT<sup>2</sup>

# 4. Take off and planned landing location

The airplane took off from the Warszawa-Babice aerodrome (EPBC). The planned landing place was Częstochowa-Rudniki aerodrome (EPRU).

<sup>&</sup>lt;sup>2</sup> All times in the Report are given in LMT, on the day of the accident LMT=UTC+2h

ICAO code	EPBC
Status	Aerodrome
Coordinates	N52°16'09.1" E20°54'26.0"
Radio	Babice-Informacja 119.180 MHz,
	Babice-Radio 122.305 MHz
Elevation	348 ft
RWY	<ol> <li>102/282 (10R/28L), 1301 x 90 m (concrete),</li> <li>102/282 (10L/28R), 1000 x 150 m (grass),</li> </ol>
Comments	An airport with heavy traffic. Both runways are in the 1,823 ft AMSL aerodrome traffic circuit (with the limitations described in AIP).

#### Table 1. EPBC aerodrome – basic information [source: https://lotniska.dlapilota.pl]

# 5. Place of occurrence

Grass runway (10L/28R) of EPBC aerodrome

# 6. Operation type

**Recreational flight** 

# 7. Flight phase

Take-off run

# 8. Flight conditions

Daylight, VFR

# 9. Meteorological information

- wind direction: 240°
- wind speed: 4 kt
- ambient temperature: 27° C
- very good visibility
- cloudless
- no precipitation

# **10. Flight organizer**

Private

# **11. Crew information**

Pilot:

- male, aged 58;
- holder of PPL(A) (issued on 16 May 2007) with ratings:
  - 1) SEP(L) (valid until 30 April 2021);

- 2) PA-46 SET/VFR (valid until 30 June 2021)
- 3) night flights (valid for unlimited period);
- 4) IR (valid until 30 June 2021)
- valid class 2 aero-medical certificate and LAPL;
- total flight time: 1655 FH;
- on type flight time: 290 FH.

#### 12. Injuries to persons

The pilot was not injured

# 13. Damage to aircraft

The accident aircraft was substantially damaged. The nose landing gear strut broke off and together with the wheel and the retraction actuator detached from the airplane. The main landing gear struts folded to the right, i.e. in the case of the left strut in the direction of its retraction, and in the case of the right strut, opposite to the direction of its retraction. As a result of the airframe contact with the runway surface, the fivebladed propeller and the lower fairings of the engine and nose landing gear were damaged. The lower fuselage below the cabin was damaged to a lesser extent. Local deformations and cracks in the wings skin were observed, including the upper skin of the left wing being punctured by the broken fitting of the main landing gear left strut.



Fig. 1. PA-46, SP-EVA, at the accident site [Source: PKBWL]



Fig. 2. PA-46, SP-EVA, at the accident site [Source: PKBWL]



Fig. 3. PA-46, SP-EVA, at the accident site [Source: PKBWL]



Fig. 4. PA-46, SP-EVA, at the accident site [Source: PKBWL]



Fig. 5. SP-EVA broken nose landing gear strut [Source: PKBWL]



Fig. 6. Damage in the area of the propeller, lower fairing of the engine and nose landing gear of SP-EVA [Source: PKBWL]



Fig. 7. PA-46, SP-EVA, at the accident site [Source: PKBWL]

# 14. Course and analysis of occurrence

# 14.1. Occurrence course

On 1 July 2020, a holder of PPL (A) completed a flight from EPRU to EPBC aerodrome. The airplane uneventfully landed on a concrete runway at around 14:30 hrs. The plane was parked on the apron and the pilot left the aerodrome. Around 18:30 hrs the pilot returned to the airplane with the intention of performing a return flight to EPRU. The pilot inspected the aircraft, checked the weather conditions, and completed the predeparture checklist and started taxiing to concrete runway 28. During the taxiing at the EPBC another event occurred, resulting in blockage of the concrete runway in use. When SP-EVA pilot was informed about that fact, he decided to take off from the grass runway. After receiving take-off clearance, SP-EVA entered the grass runway 28. The pilot positioned the plane closer to the right edge of the runway, as he considered that side of the runway to have better surface, and then he began the take-off run. In the pilot's opinion, the plane accelerated correctly, but after reaching the speed of 55 kt, it suddenly lost direction deviating to the right. The pilot reacted dynamically to the loss of direction by pressing the left pedal. As a result, the airplane turned left and then its nose part pitched down to the surface of the runway. The blades of the rotating propeller collided with the ground and were immediately destroyed. The plane moving sideway broke the main landing gear legs, which folded to the right and the aircraft, moving on the grass, rotated, and then came to rest. The pilot turned off the power and fuel supply and left the plane unaided without injuries. The emergency services (that were present at the aerodrome) provided first aid to the SP-EVA pilot. A test confirmed that pilot was not under the influence of alcohol.



Fig. 8. The occurrence site – grass runway 28 of EPBC. The red arrow indicates the marker of the right edge of the runway, the yellow arrow indicates the take-off run direction, the yellow line indicates the path of the plane moving on the grass after the collapse of the landing gear. [Source: PKBWL]



Fig. 9. The surface of the grass runway at the accident site. Visible marks left by main landing gear struts that folded under the weight of the aircraft [Source: PKBWL]

#### 14.2. Findings

#### 14.2.1. Pilot

- 1) The pilot had proper license to fly the accident aircraft;
- 2) The pilot had a valid aero-medical certificate;
- 3) The pilot had extensive flight experience, including the accident aircraft;
- 4) The pilot was rested and was not under the influence of alcohol or drugs.

#### 14.2.2. Operations

- 1) The weather at EPBC, at the time of the accident was very good and had no influence on the occurrence and its course;
- 2) The pilot properly maintained communication with the EPBC ATC;
- 3) At the time of the accident, as a result of another occurrence on EPBC, the concrete runway was out of service;
- 4) At the time of the accident a grass runway was used on EPBC;
- 5) At the time of the accident, the surface of the right side of the RWY 28 was better than that on the left side;
- 6) The pilot initiated the take-off run not along the runway axis, but closer to its right edge;
- 7) When the plane started to turn right, the pilot dynamically reacted to the loss direction by pressing the left pedal.

14.2.3. Aircraft

- 1) The airplane was operated and maintained properly, its condition did not raise any concerns prior to the occurrence;
- 2) The weight and balance of the aircraft were within the prescribed limits (1 person + 372 kg of fuel);
- 3) The engine parameters were correct prior to the accident.

14.2.4. Survival aspects

- 1) At the time of the accident, emergency services were present on EPBC, handling the site of a previous occurrence on the concrete runway;
- 2) The emergency services immediately provided assistance to the SP-EVA pilot;
- 3) The pilot left the airplane unaided without any injuries;
- 4) During the accident no fuel spill or fire occurred.

# **15. Cause of the accident**

Loss of direction during take-off run.

# **16. Contributing factors**

- 1) Take-off operation performed from the grass runway;
- 2) Different quality of the grass runway surface;
- 3) Take-off run performed close to the right edge of the runway;
- 4) Too dynamic pilot's reaction to counteract the loss of direction during take-off run, which at the speed of 55 kt resulted in creating a great force acting on the deflected wheel of the nose landing gear. As a result, the nose landing gear strut was detached from the aircraft.

# 17. Safety recommendations

PKBWL has not proposed any safety recommendation after completion of the Investigation.

# 18. System changes proposals

None

#### 19. Other comments

None

#### 20. Annexes

None

#### THE END

Investigator-in-Charge Signature on original

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