

FINAL REPORT



ACCIDENT 2022/2231

State Commission on Aircraft Accidents Investigation (PKBWL)

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FINAL REPORT

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

ACCIDENT

OCCURRENCE NO – 2022/2231

AIRCRAFT – Gyroplane AutoGyro Cavalon, OK-AWC98

DATE AND PLACE OF OCCURRENCE – 13 May 2022, Brzeziny



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

Occurrence reference number:	2022/2231			
Type of occurrence:	ACCIDENT			
Date of occurrence:	13 May 2022			
Place of occurrence:	Brzeziny airfield			
Type and model of aircraft:	Gyroplane AutoGyro Cavalon			
Aircraft registration marks:	OK-AWC98			
Aircraft user/operator:	natural person			
Aircraft commander:	Pilotni prukaz – Gyrocopter (Czech Republic)			
Number of victims/injuries:	Fatal	Serious	Minor	None
	-	-	-	1
Domestic and international authorities informed about the occurrence:	Polish Civil Aviation Authority, Air Accidents Investigation Institute (Czech Republic), Federal Bureau of Aircraft Accidents Investigation (Germany), EASA			
Investigator-in-Charge:	Krzysztof Błasiak			
Investigating Authority:	State Commission on Aircraft Accidents Investigation (PKBWL)			
Accredited Representatives and their advisers:	Not appointed			
Investigation Team:	Not appointed			
Document containing results:	Final Report			
Safety recommendations:	NONE			
Addressees of the recommendations:	Not applicable			
Date of completion of the investigation:	06.09.2022			

1. Occurrence type

Accident

2. Investigation authority

State Commission on Aircraft Accidents Investigation (PKBWL)

3. Date and time of occurrence

13 May 2022, 10:30 hrs LMT¹.

4. Take off and planned landing location

The aircraft took off and was planned to land near Brzeziny airfield.

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

Table 1. Brzeziny airfield – basic information [source: <https://lotniska.dlapilota.pl>]

Status	Unregistered airfield
Coordinates	N51°48'30.8" E19°44'18.2"
Elevation	640 ft
RWY	172/352 (17/35), 650 x 17 m,
Comments	Grass runway, parallel to a road. A slight rise in the center of about 20 ft relative to both thresholds.

In the town of Brzeziny, approximately 300 meters from the runway, a hangar is located, belonging to the owner of the airfield. PKBWL found that in the past, users of the airfield had repeatedly taxied between the hangar and the runway using a public road with car traffic. To avoid such taxiing, the users of the airfield also take off from the meadow adjacent to the hangar. The investigated accident was preceded by a take-off performed from that meadow.



Fig.1. Satellite image of the area of the airfield in Brzeziny. Yellow line - approximate boundaries of the landing strip. Red rectangle - hangar located near the airfield. Orange line - taxi route between the hangar and the runway with the use of the public road [source: google.pl/maps]

5. Place of occurrence

The meadow adjacent to the hangar located near the Brzeziny airfield

6. Operation type

Recreational flight

7. Flight phase

Take-off

8. Flight conditions

Daylight, VMC

9. Meteorological information

At the time of the accident, the following weather conditions at EPLL aerodrome (approximately 30 km in straight line from the accident site) were recorded:

- 1) No cloud cover;
- 2) Ambient temperature 19°C;
- 3) Visibility over 10 km;
- 4) Wind direction 240° at the speed of 9 kt.

10. Flight organizer

Private

11. Crew information

Male (Czech nationality), aged 55, holder of *Pilotni prukaz* – license for ultralight gyroplanes issued on 14 February 2022 by Letecká Amaterská Asociace ČR, valid until 13 February 2024.

At the time of the occurrence, the pilot had a valid aero-medical certificate.

Until the time of the accident, the pilot had about 93 FH experience in gyroplane flying.

12. Injuries to persons

The pilot suffered minor injuries and did not require hospitalization.

13. Damage to aircraft

The accident aircraft was substantially damaged. The main landing gear detached from the fuselage, causing that the gyroplane turned over on its side and the operating main rotor collided with the ground, which resulted in its destruction. The rotor mast and the polycarbonate glazing of the fuselage were also damaged.



Fig. 2. OK-AWC98 gyroplane at the accident site [Source: PKBWL]



Fig. 3. OK-AWC98 gyroplane at the accident site [Source: PKBWL]

14. Course of the occurrence and findings

14.1. Occurrence course

On the day of the accident, the pilot prepared the gyroplane for flight and checked the weather conditions at the airfield (CAVOK). Then he refueled gyroplane (about 100 liters) and made a pre-flight check, started the engine, and after warm up, started taxiing to the take-off point.

At 10:30 hrs LMT, the pilot initiated the take-off procedure by starting the pre-rotation of the main rotor. After reaching the pre-rotation speed of 200 rpm, the pilot moved the control stick backward and the engine power control lever to the "full throttle" position to start the take-off run. The gyroplane started to move, but then the pilot noticed that he had not unlocked the main landing gear wheel brake, so he tried to unlock the brake. After finding that the brake could not be unlocked, the pilot decided to abort the take-off. He reduced the engine power and moved the control stick forward. The gyroplane slowed down and at the same time tilted to the right. In that position, the rotating main rotor touched the ground, which caused the gyrocopter to suddenly rotate and turn over on its right side. When the gyroplane came to rest, the pilot left the cockpit via the broken front glazing of the fuselage without suffering any injuries. After the accident the pilot went to the local Police Headquarters in Brzeziny, where he was tested for alcohol with a negative result.

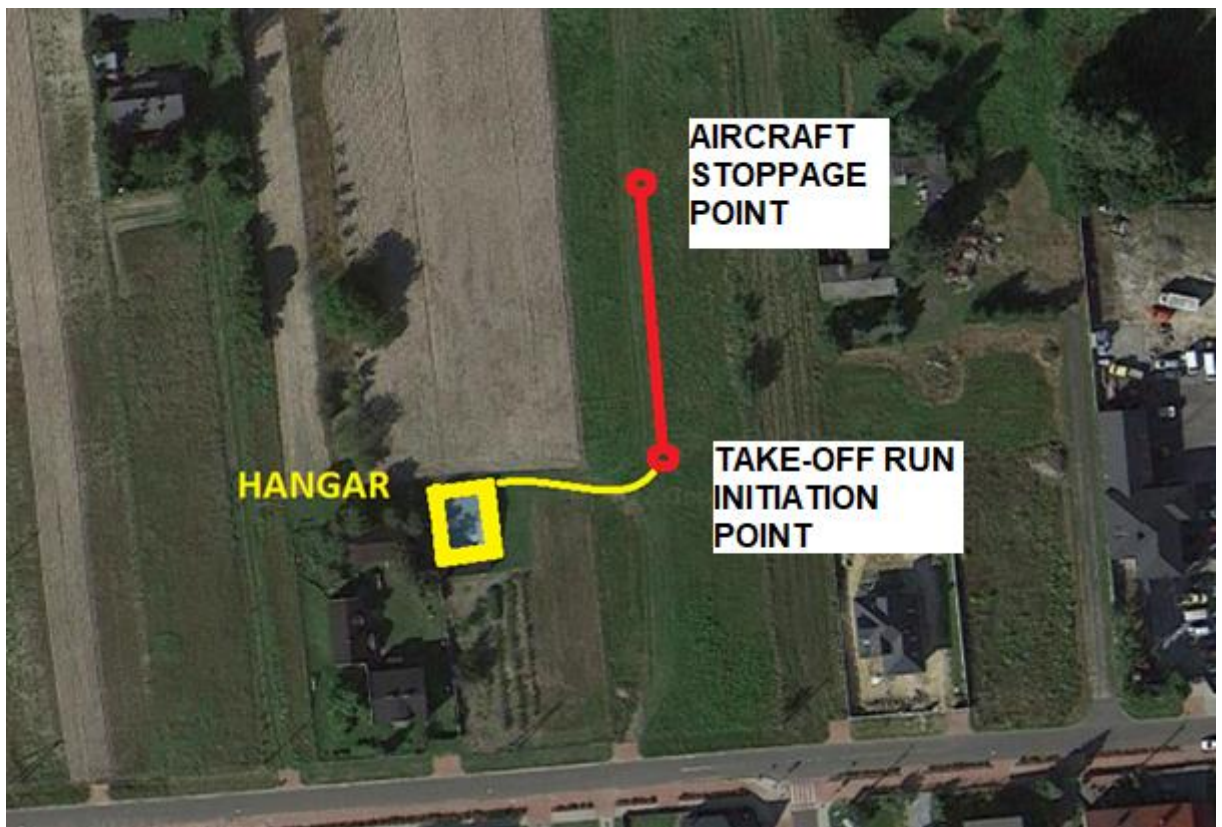


Fig. 4. Satellite view of the accident site. Yellow line - the taxi route of the gyroplane from the hangar to the take-off point. Red line - the take-off run of the gyroplane that ended in the accident [Source: google.pl/maps]

14.2. Findings

14.2.1. Pilot

- 1) The pilot had a valid permit to fly the accident aircraft and a valid aero-medical certificate.
- 2) The pilot had little flight experience, he was licensed less than 3 months prior to the accident.
- 3) The pilot was rested and was not under the influence of alcohol or drugs.

14.2.2. Weather conditions

- 1) At the time of the accident, the weather conditions at the airfield were very favorable and had no influence on the occurrence and its course.

14.2.3. Aircraft

- 1) The gyroplane 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 + 100 l of fuel);
- 3) The engine parameters were correct prior to the accident.

14.2.4. Survival aspects

- 1) The pilot left the gyroplane unaided without any injuries;
- 2) No fire occurred during the accident.

15. Cause of the accident

Pilot's error consisting in starting the take-off run with braked wheels of the main landing gear, which resulted in the creation of destructive forces at the landing gear attachment points resulting in the landing gear damage during take-off run.

16. Contributing factors

Little experience of the pilot.

17. Safety recommendations

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

18. System changes proposals

None

19. Other comments

PKBWL found that the AutoGyro Cavalon gyroplanes manufactured until 2015 (the accident gyroplane was produced in 2012) had landing gear mounted to a threaded aluminum profile placed inside the cabin near the floor. That solution was changed in 2015 by using a through-bolt with nut, that provides greater strength of the landing gear mounting.

20. Attachments

None

THE END

Investigator-in-Charge

Signature on original

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