The sole objective of safety investigations is the prevention of future aviation accidents and incidents.

The Commission does not apportion blame or liability. The investigation is independent and separate from any judicial and administrative proceedings.

Any use of the Resolution for any purpose other than the prevention of aviation accidents and incidents may lead to wrong conclusions and interpretations.

FINAL REPORT

of the State Commission on Aircraft Accidents Investigation

of 27 January 2026

regarding the **aviation accident**

2025-0108

OCCURRENCE NUMBER

UL aircraft, CH-601 “Zodiak,” OK-LUA60

9 September 2025, Lipowa

The Report presents solely the facts regarding the circumstances in which the aviation occurrence arose and developed, along with, where relevant, ad hoc safety recommendations.

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1. FACTUAL INFORMATION

1.1. Flight History

On 9 September 2025, in the morning, a pilot and a pilot-passenger arrived at the airfield[1] in Lipowa with the intention of going on a flight using a CH-601 “Zodiak” aircraft with the registration marks OK-LUA60. The aircraft was owned by one of the two men. On a day-to-day basis, it was stored in a hangar, on the airfield. The pilots’ objective was to fly to one of the airports in the Czech Republic, located a few dozen kilometres west of Bielsko-Biała.

On the day of the occurrence, there was fog all over the Żywiec Basin, including the Lipowa airfield within it, until the late morning hours.

The circumstances in which the aircraft that crashed at 9.34 a.m. LMT[2] had taken off were established by the Commission on the basis of footage from two CCTV[3] cameras located on the airfield (administrative management building) and on the basis of witness statements.

The layout and fields of view (FOVs) of the cameras are shown in Figure 1.

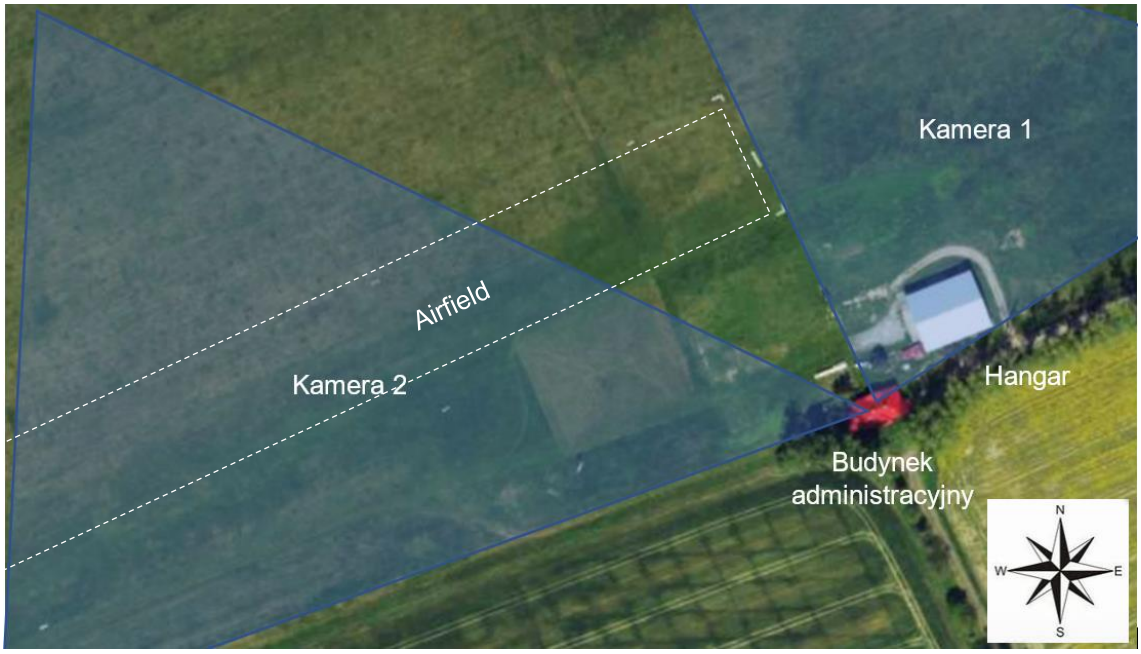

Fig. 1 Approximate FOVs of Cameras 1 and 2 [source: Geoportal/PKBWL]

Budynek administracyjny	Administrative management building

[1] For the purposes of this report, the term ‘airfield’ will be used. Formally speaking, the airfield in Lipowa functions as a take-off- and landing-adapted area and is not on the Civil Aviation Authority's list of registered airfields.
[2] LMT (Local Mean Time) – local time. All times in this report are given in local time.
[3] CCTV (Closed-Circuit Television) – a video surveillance system which records camera footage in a closed-circuit network, without public access.

Kamera 1/2	Camera 1/2

Camera 1, on the north-facing wall of the building next to the airfield, recorded the hangar door being opened, the aircraft being pulled out from the hangar, one person performing the flight inspection, finally the aircraft's engine being started and tested and the aircraft being taxied for take-off:

- 9:08 AM: doors opened, aircraft pulled out of hangar;
- 9:15 AM: the owner of the aircraft (who then took his seat on the left side in the cockpit) walks around the aircraft;
- 9:17 AM: pilot and pilot-passenger take their seats in the cabin;
- 9:18:40÷50 AM: engine start, test commences (Fig. 2);

Fig. 2 View from Camera 1 – aircraft is pulled out, engine is started – test commences (N view) [source: airfield monitoring/PKBWL]

- 9:27:00 AM: aircraft taxied to starting point.

At 9:27:12 AM, Camera 2 on the west-facing wall of the building recorded the aircraft taxiing westbound (Fig. 3):

Fig. 3 View from Camera 2 – aircraft taxiing for take-off [source: airfield monitoring/PKBWL]

The plane took off five minutes later, at 9:32 AM, towards the Żywiec Lake. It flew close to two witnesses and disappeared into the fog, then turned back over the airfield in an attempt to go around. Approximately three minutes after take-off, it crashed into a neighbouring field (Fig. 4) and caught fire. Witnesses who reached the scene of the accident were unable to extinguish the fire. They called the emergency services. Seven fire brigades as well as and ambulances were dispatched to the scene. After extinguishing the remains of the wreckage, firefighters found the bodies of the two victims in the burnt-out cockpit.

Fig. 4 Fading fire in the wreckage (N view). Eastern edge of the Lipowa airfield is behind the trees on the left of the photo (blue arrow). Photo taken ca. 10 AM. Of note is the continued significant fog [source: Internet/www.bielsko.info]

1.2. Injuries to Persons

Table 1. General summary of injuries

Injuries	Crew	Total on board the aircraft	Others
Fatal	2	2	0
Serious	0	0	0
Minor	0	0	0
None	0	0	0
TOTAL	2	2	0

1.3. Damage to the aircraft

The aircraft was destroyed. Ground marks were on a relatively small area and included disturbed humus and a strip of burnt grass (Fig. 5).

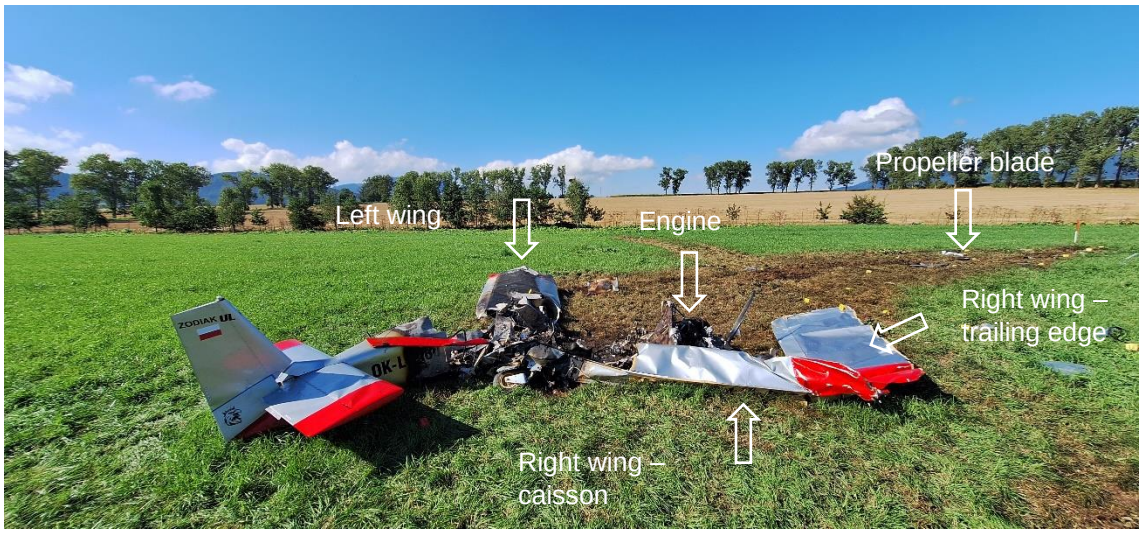

Fig. 5 Wreckage at the site of the accident (N view) [source: PKBWL].

Both wings separated from the fuselage and their internal structure (girders, ribs, riveted reinforcements) was destroyed. The entire trailing edge of the right wing detached from the girder.

The fuel tanks (Fig. 6), upon impact with the ground, tore through the caissons and fell out of the wings. The tanks ruptured and the spilled fuel exacerbated the fire.

Fig. 6 Fuel tank torn from left wing caisson [source: PKBWL].

The power unit, including the mount and firewall, separated from the fuselage (Fig. 7). One of the composite propeller blades broke off upon impact and was found several metres away from the wreckage. The other two blades remained on the hub. Apart from the fractured shaft of one of the blades, none of the blades showed signs of mechanical damage.

Fig. 7 Condition of the power unit – firewall, mount and engine detached, hub with two remaining blades. The white fabric is the remnant of a completely burnt engine cowling [source: PKBWL].

Impact and heat loads caused, i.a., the carburettors to detach, tear and partially melt – they were found separately (Fig. 8).

Fig. 8 Condition of the carburettors found in the wreckage, partially melted by the high temperature [source: PKBWL].

The crew cabin was completely destroyed and burnt out (Fig. 9).

Fig. 9 Remains of the aircraft cabin – among others, visible rudder pedals and a few flight instruments [source: PKBWL].

1.4. Other damage

None.

1.5. Crew information

The crew consisted of two men aged 70 and 50. According to the information obtained, they did not have Polish UACP qualification certificates.[4]

The Commission requested information from the Czech Air Accident Investigation Institute (ÚZPLN) on the victims' flight qualifications and any information on the airworthiness of the OK-LUA60 aircraft. At the time of publication of this report, the Commission had not received any feedback from ÚZPLN.

1.6. Aircraft information

The CH-601 "Zodiak" OK-LUA60 aircraft was a kit plane built in Poland in 2005 by the Polish company ZUT Wrocław in 2005. It was a cantilever metal low-wing aircraft with an empty weight of about 285 kg and a maximum take-off weight of 450 kg.[5] This aircraft had no flaps.

The fuselage controls were doubled, with a single cyclic stick for both pilots who occupied seats next to each other. The stick was in the middle, between the seats.

Powering the OK-LUA60 aircraft was a Rotax 912 ULS dual carburettor engine with a gear-mounted 3-blade constant pitch propeller. The wing caissons contained two fuel tanks, approximately 30 litres each.

There were two occurrences – accidents – involving the aircraft in 2009 and 2011.

1.7. Meteorological information

On the day of the accident, dense fog was forming in the Żywiec Basin area during the night and in the late morning hours. They limited the visibility[6] horizontally and vertically to as little as a few dozen metres. The witness described that the horizontal visibility on the meadow where the plane crashed was about 200 m.

Fog is a frequent phenomenon in the Żywiecczyzna region and is due to the presence of a body of water – the Żywiec Lake on the Soła River. The lake is a few kilometres from Lipowa, to the east. The lack of airflow leads to stagnant and concentrated fog in the depressions.

1.8. Navigation aids

It is likely that there was a navigation tablet and/or a separate GPS system in the aircraft.

[4] Ultralight Aircraft Pilot qualification certificate
[5] Determined from archival photographs of the instrument panel – the conditions-of-use plate.
[6] Visibility is the weather-dependent range at which objects can be seen.

1.9. Connectivity

The crew did not use radio communication with any of the ground stations.

1.10. Information about the starting point and the place of the occurrence

The Lipowa airfield is located on a plateau above the village of Lipowa (Fig. 10). The take-off and landing directions are located on the west-east axis (exactly 243°/63°) and the length of the approximately 50-metre-wide runway exceeds 500 m. The airfield area is not fenced.

A hangar and an administrative management building (house) are situated on the eastern side of the take-off field.

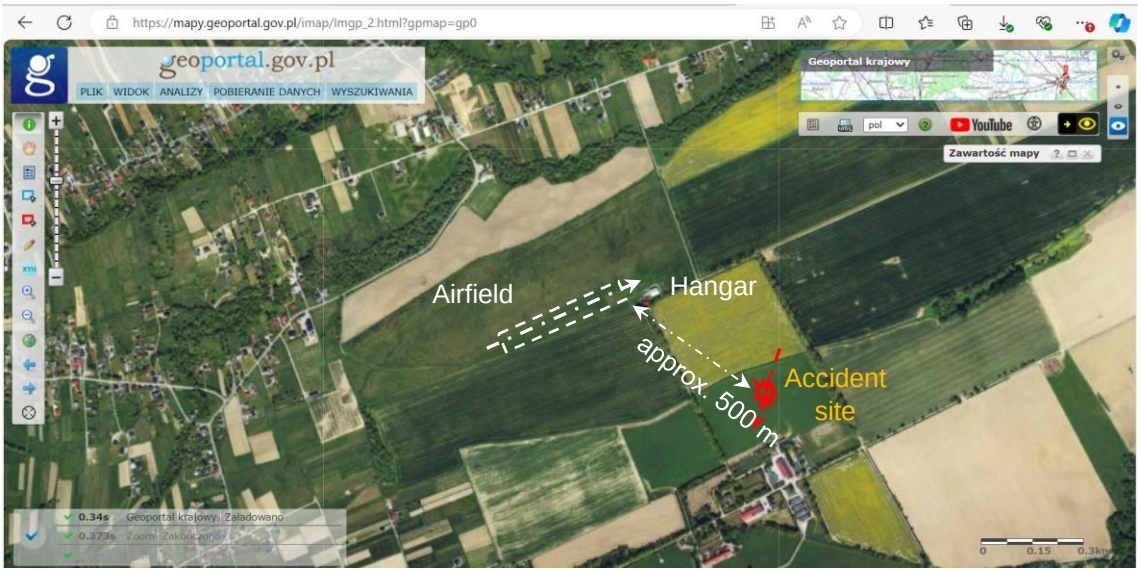

Fig. 10 The airfield in Lipowa (the white dotted line schematically shows the take-off runway - note the off-scale drawing!) together with the adjacent area and the accident site. The red arrow indicates the direction of impact [source: Geoportal/PKBWL]

On the day of the accident, a strip of approximately 350 x 40m was mowed on the airfield. Due to the extremely high relative humidity (dense fog), the grass was wet. The accident occurred at a (straight-line) distance of 500 m from the eastern edge of the airfield, south-east to it.

The aircraft crashed on a vast and grassy meadow.

The following are coordinates of the accident site according to WGS-84[7]: 49°41′43.182” N, 19°6′25.553” E.

[7] WGS-84 – World Geodetic System (1984), a geodetic reference system.

1.11. Flight data recorders

With the wreckage burnt out, it was impossible to identify any device potentially recording flight information or power unit performance.

1.12. Information on the wreckage and the occurrence

No evidence was found of any aircraft component being separated from the plane during the flight. By the time the aircraft hit the ground, its structural integrity had not been compromised.

1.13. Medical and pathological information

The Prosecution Service provided the Commission with copies of forensic medical opinions from the examination and autopsy of the victims. The cause of death for both people was ‘severe bodily injuries involving multiple organs’ sustained as a result of the plane’s collision with the ground.

Forensic toxicology reports ruled out the pilots being under the influence of alcohol, narcotics, psychotropic and psychoactive substances or drugs.

1.14. Fire

The fire, which started immediately after the plane hit the ground, spread rapidly throughout the wreckage. The energy of the collision led to the structure of the plane, including the fuel tanks, being ruptured. Hot engine components ignited the fuel vapour and a significant amount of fuel (approximately 60 litres of automotive petrol) fuelled the flames.

1.15. Survival factors

The cabin of the Zodiak aircraft was located above the wing root. The pilots were sitting side by side. Both seats were equipped with seat belts: abdominal and shoulder belts. The aircraft was not equipped with a BRS/GRS-type rescue safety system.

1.16. Tests and studies

No tests or studies were performed by the Commission itself. At the request of the prosecution service, fuel samples secured from the hangar, where the plane is stored, were handed over to law enforcement.

1.17. Information on organisations and management

The flight was not agreed with the site (airfield) administrator. Two bystanders (tourists) were on the airfield at the time of the occurrence. The administrator was not present and had no knowledge of either pilot's intention to fly.

Conventionally, the intention to carry out flights was always agreed with the administrator. The pilot-owner of the Zodiak aircraft would communicate his intention to fly each time, which he did not do on the day of the accident.

The airfield administrator testified that the owner of the Zodiak aircraft had a signed agreement to store his aircraft at the airfield hangar.

1.18. Supplementary information

As at the date of publication of the final report, the site in Lipowa was not included in the ULC's airfield register.

1.19. Useful or effective investigation methods

Standard investigation methods were used.

2. ANALYSIS

The analysis was based on footage from CCTV cameras installed on the airfield building, on visual inspection of the wreckage and the accident site, taking into account witness testimony.

2.1. Air operations

2.1.1. Likely history of the flight

The entire flight, up to the impact with the ground, lasted about three minutes. The take-off roll and lift-off was recorded by CCTV cameras.

The take-off started from the western edge of the grass runway, heading 063°. At 9:32:00 AM, Camera 2 (facing west) recorded the aircraft lifting off, accelerating and starting to climb (Fig. 11).

Fig. 11 Aircraft lifting off the airfield – distance from camera is approximately 250m [source: airfield monitoring/PKBWL]

At 9:32:08 AM, Camera 1 (facing north) captured the aircraft flying over the eastern airfield boundary (Fig. 12). It was at an altitude of about 15÷20 m above the airfield, on a clear climb, tilted a few degrees to the left wing, with a course deviating to the left of the take-off axis (to the NE).

Fig. 12 Last frame of the recording showing the OK-LUA60 aircraft taking off [source: airfield monitoring/PKBWL]

Approximately 2 min 50 s after 9:32:08 AM, the aircraft crashed into a field adjacent to the airfield. The impact was in the direction of approximately 190°, and the wreckage immediately caught fire.

The roll, lift-off and initial climb phase were normal: the take-off profile was typical. The sounds of the engine did not indicate a disturbance in the power unit. A

witness testified that after take-off, the aircraft made went around the airfield and then disappeared from view due to the fog. Both witnesses continued to hear the plane's engine running and then heard a bang – the plane hitting the ground. Such a description may indicate that the aircraft's engine was running at high speed, and it did not shut down on its own in flight. However, since there is no damage to the propeller blades in the wreckage, the engine was not running at the time of impact. The most likely explanation for this is that the pilot(s) switched off the engine knowing that they would hit the ground. The Rotax 912 engine stops the propeller instantaneously, without it windmilling in flight.

The aircraft was not equipped with any devices to control the flight in conditions of "no external visibility." There was no way for the pilots to control the position of the aircraft. Lateral and longitudinal stability could only be enjoyed once straight-and-level flight had been achieved without hover and with trim control. There were no conditions for that, so in returning to the airfield, the aircraft had to make turn, like in going around.

After take-off, the aircraft climbed in the direction of the airfield, with a course towards the Żywiec Lake. The crew's intention was to climb above the fog. After take-off, the aircraft returned and went around the airfield. Returning to the airfield was a tactical error. The only way to have the aircraft in control was to climb above the fog as quickly as possible, into an area where the weather allowed the flight to continue with visibility.

With the pilots losing spatial orientation and, possibly, the power in the power unit (see 2.1.3.), they were unable to rise above the fog. The reason for the loss of engine power, in all likelihood, could have been ice built up in the carburettor air intake system.

2.1.2. Pilot qualifications

According to information from the prosecution service, both pilots were likely to have been formally qualified to fly UL planes/aircraft, holding Czech qualification certificates (Pilotni Prukaz).

The owner of the aircraft had little flying experience; unconfirmed information suggests that he had about 100 h of flying experience on UL planes. He had taken possession of the Zodiak OK-LUA60 aircraft about two years before the accident. He would occasionally fly this aircraft from the airfield in Lipowa.

The owner had made his last flight before the accident two days earlier, i.e., on 7 September 2025. The pilot was familiar with the Lipowa area: he lived nearby and often appeared at the airfield.

The pilot-passenger was more experienced. He owned an aircraft which he operated and which he had modified. As part of his business, he performed UL aircraft and tandem paragliding flights.

2.1.3. Weather

On the morning of 9 September 2025, there were no conditions for flights to take place from the Lipowa airfield. A dense fog lingered over the entire Żywiec basin. The weather is shown in images from the CCTV cameras installed on the airfield.

The horizontal visibility at the time of take-off was, in the direction of take-off about 200 m, while the vertical visibility was at most a few dozen metres.

In the morning, the air temperature in Lipowa was 8°C, with relative humidity close to 100%. The fog was the result of the air being saturated with water vapour and cooled to dew point. At 100% relative humidity (RH), the dew point[8] was equal to the ambient temperature:

$$T_{dew} \approx T - ((100 - RH)/5)$$

In these conditions, high-intensity icing occurred in every phase of the flight (Fig. 13). As the aircraft was in no way designed to fly in icy conditions, icing built up in the carburettor air intake system was almost certain to occur. This translated into a drop in engine power and may have forced the crew to turn towards the airfield (immediately after take-off) and attempt to find it in low visibility conditions. Perhaps the aircraft going around the airfield, as observed by the witness, was due to the foregoing.

The fact that the witness saw the aircraft flying above her did not mean that the pilots were able to see the ground. Forward visibility from the aircraft was probably zero, so it was impossible to find any reference points. The crew may have been able to see some ground beneath the aircraft, but the field of view was very limited, not least because of the wings over which the pilots were sitting.

The fact that the pilots found themselves over a field adjacent to the airfield, a few dozen metres below the airfield elevation, was probably accidental, and the pilots were unable to determine either their direction from the airfield or their position in space. This is evidenced by the nature of their impact with the field, indicating that the aircraft was on an uncontrolled trajectory.

[8] The air temperature at which the water vapour in the air condenses and forms mist.

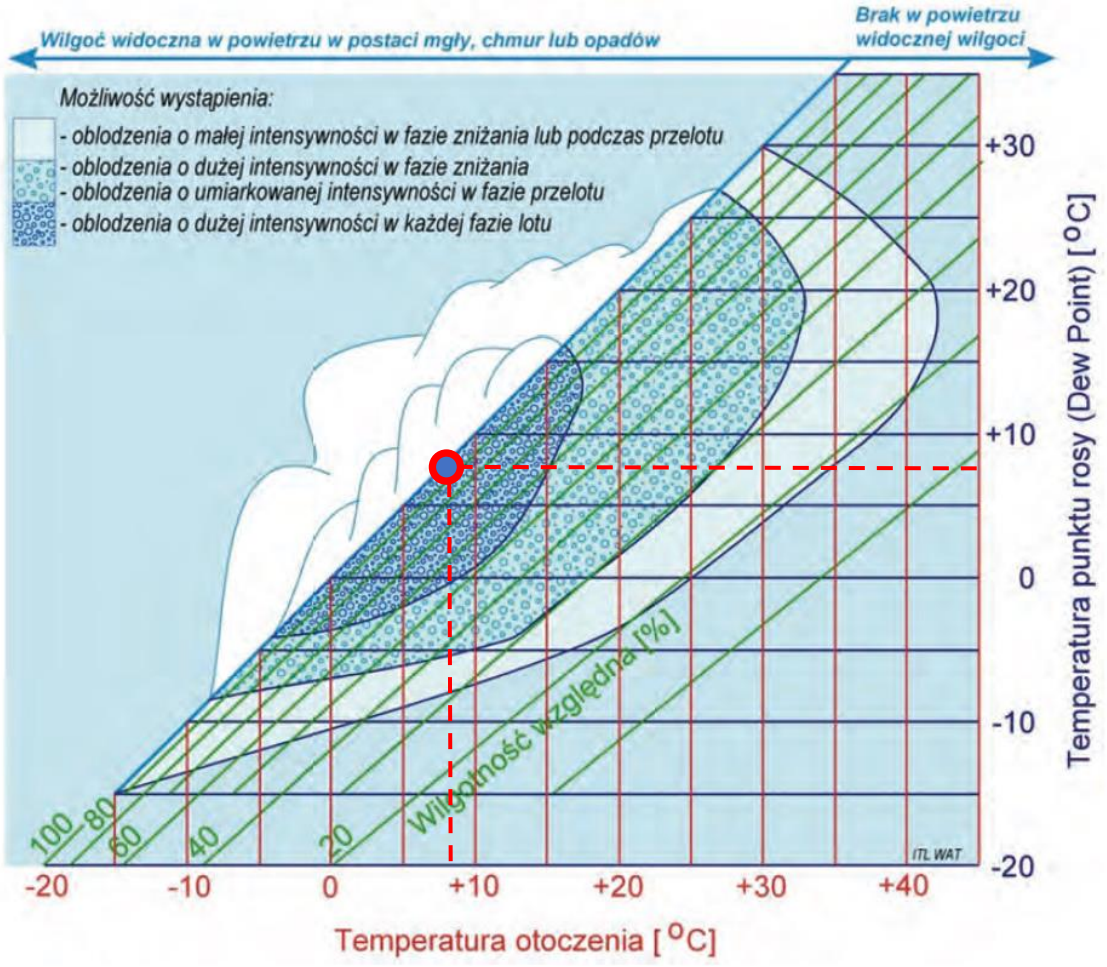

Fig. 13 Conditions for icing to occur in carburettor air intake systems in piston engines [source: Ryszard Chachurski, Military University of Technology]

Wilgoć widoczna w powietrzu w postaci mgły, chmur lub opadów	Humidity visible in air as fog, clouds or precipitation
Brak w powietrzu widocznej wilgoci	No visible humidity
Temperatura otoczenia	Ambient temperature
Temperatura punktu rosy	Dew Point
Wilgotność względna	Relative humidity
Możliwość wystąpienia	Chance of:
Oblodzenia o małej intensywności w fazie zniżania lub podczas przelotu	Low-intensity icing in descent and flight
Oblodzenia o dużej intensywności w fazie zniżania	High-intensity icing in descent
Oblodzenia o umiarkowanej intensywności w fazie przelotu	Medium-intensity icing in flight
Oblodzenia o dużej intensywności w każdej fazie lotu	High-intensity icing in all flight stages

2.2. Aircraft

2.2.1. Aircraft maintenance

No materials documenting the maintenance of the Zodiak aircraft have been obtained.

According to the people frequenting the airfield, the owner took good care of the aircraft, performing maintenance work personally or contracting it. At the end of 2024, he commissioned a major engine repair from one of the maintenance organisations. In August 2025, he consulted on selected operational issues with the maintenance organisation. The manager of this organisation said that the owner had made numerous independent modifications to the aircraft's systems. It is possible that these modifications did not comply with the manufacturer's engine installation conditions and compromised operational safety. The owner knew this. Details of the modifications are not known.

It is possible that the plane documents were in the cabin during the flight and were burnt.

2.2.2. Aircraft operation

Based on the footage documenting the engine start-up, taxiing and take-off, and bearing in mind that the crew did make the decision to take off, it can be assumed that the aircraft was technically sound.

2.2.3. Mass and balance

The load in the cabin was no less than:

55 kg + 66 kg (pilot weights[9])

+ approximately 60 l of automotive petrol: 60 l x 0.75 kg/l = 45 kg

Total: 166 kg

Maximum permissible crew weight, incl. fuel:

450 kg (maximum permissible weight of aircraft in flight)

- 285 kg (likely empty weight)

The difference: 165 kg

Conclusion: for take-off, the aircraft reached the maximum permissible in-flight weight and exceeded it.

With no weighing and balancing data available, it was not possible to determine the in-flight position of the centre of gravity and relate it to the value in the Flight Manual assigned to OK-LUA60. Given that the pilots were seated side by side, it

[9] According to the forensic report. It must be assumed that the actual weight of the pilots was greater.

is likely that the centre of gravity remained within the range required for this type of aircraft, and that its position did not affect the flight characteristics in a way that required special control skills.

2.2.4. Aircraft instruments

How the instrument panel was equipped was identified mainly on the basis of cockpit recordings obtained from witnesses. They were made many weeks before the accident and do not necessarily reflect the actual condition on the day of the occurrence. The cockpit burnout did not allow the exact identification of the aircraft equipment, but it did allow the conclusion that the aircraft lacked instruments for the effective piloting in IMC.

Opposite the pilot, in front of the left seat, was a compass; and in the centre of the instrument panel was a navigation tablet.

Fig. 14 Probable pilot instrument configuration in the Zodiak OK-LUA60 aircraft [source: PKBWL].

These instruments did not in any way enable the aircraft to maintain balance in flight conditions without external visibility.

Fig. 15 Probable configuration of engine instruments [source: PKBWL].

2.2.5. Aircraft systems

Nothing was found to indicate that there was a fault in the aircraft control system during the flight.

2.3. Survival aspects

Due to the nature of the collision with the ground, there was no possibility for the crew to survive. The tremendous acceleration on impact to which the pilots were subjected resulted in severe internal and external injuries, involving multiple organs, leading to immediate death.

2.4. Human factors

A flight in bad weather which does not satisfy minimum regulatory requirements is a high-risk flight.

Once the aircraft took off, conditions did not allow the crew to abort the take-off and make a precautionary landing. With immediate return to Lipowa required (probably due to icing), there was no way for the crew to build an approach and land.

The intention to fly the aircraft, while the pilots lacked the license and skills to fly in IMC, was in itself a serious reason for the occurrence. Witness testimony (as provided by the police) shows that the purpose of the flight to an airport in the Czech Republic was for the pilot-passenger to have an aeromedical examination.

3. CONCLUSIONS

3.1. Findings

3.1.1. The weather conditions at take-off were in no way conducive to a safe flight. The conditions were well below the minimum requirements per VFR.

3.1.2. Weather conditions did not allow the aircraft to return to the airfield after take-off.

3.1.3. Loss of aircraft control occurred near the airfield when the pilots lost spatial orientation due to the fog.

3.1.4. Effective aircraft control could not be regained once spatial orientation was lost.

3.1.5. With the weather conditions at the time of the accident, high-intensity icing was present in every phase of the flight.

3.1.6. The lack of damage to the propeller indicated that the engine was not working at the time of impact with the ground, and was probably switched off by the pilots just before impact.

3.1.7. The aircraft hit the ground at a high angle and immediately caught fire.

3.1.8. Due to the nature of the crash and the extensive fire, there was no way for the crew to survive.

3.2. Causes and contributing factors

3.2.1. Decision to take off in very poor weather conditions, not satisfying VFR requirements.

3.2.2. Loss of spatial orientation in flight without external visibility.

3.2.3. Likely icing of the carburettor air intake system, resulting in reduced power in the power unit, and thus the aircraft being unable to climb above the fog, where the weather was good.

3.2.4. Lack of aircraft equipment allowing flight in deteriorating weather.

4. SAFETY RECOMMENDATIONS

None.

5. ADDENDA

None.

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