

Operator: Aeroklub Kralupy nad Vltavou, z. s.

Manufacturer: PZL Bielsko

Type: SZD-48-3

Registration: OK-6200

Location: road No. II/232 between the municipalities Rokycany and Osek, cca 585 m NE ARP LKRY

Date and time: 2. 8. 2022, 14:31 UTC

Synopsis

On 2 August 2022, the AAI was notified of an air accident of the glider SZD-48-3. Glider entered a spin during the right turn and fell at a sharp angle on road No. II/232 between the municipalities Rokycany and Osek. During the fall, the glider hit the rear part of a vehicle driving on the said road with the left half of its wing. The vehicle passengers did not suffer any injuries, but the glider pilot died. The glider was destroyed.

Factual Information

Pilot participated in the training camp of Aeroclub Kralupy nad Vltavou, which took place at LKPS (Plasy). On the critical day, he carried out a brief flight as an instructor with a student on the L-23 glider.

Less than 30 minutes later, he decided to perform a flight with SZD-48-3 OK-6200 glider along the route Plasy – Tachov – Příbram – Plasy.

He took off from LKPS at 11:02 for a flight along the route. Approximately from ARP LKPM, he started losing altitude and cca 24 km south-east from Plasy airport he changed the flight direction to Rokycany airport.

Near the village of Volduchy, pilot made two right-hand turns during which he was probably looking for an upstream. He failed to tie into any upward airstream. He continued towards LKRY with an average loss of altitude of approximately $1 \text{ m}\cdot\text{s}^{-1}$.

Above the crossing of D5 highway in the direction from Volduchy to Rokycany, the vertical speed was between 0 and $+1 \text{ m}\cdot\text{s}^{-1}$. That is why pilot might have decided to make two right-hand turns in order to find an upstream.

According to the experience of glider pilots flying in the vicinity of LKRY, if the temperature reaches $28 \text{ }^\circ\text{C}$ and more, there are very narrow, highly turbulent thermal currents above D5 highway. Sometimes it is possible to reach up to $3 \text{ m}\cdot\text{s}^{-1}$.

During the second turn, approximately in the direction of D5 highway to Prague, the glider entered a right-hand spin at a sharp angle.

The right half of the wing hit the asphalt surface of the road No. II/232 at a sharp angle, then the front upper part of the glider and cockpit followed, which made the glider turn upside down. During the fall, glider's left half of the wing hit the rear part of a car driving on the same road towards Rokycany.

Car crew noticed an impact onto the rear part of the vehicle. However, driver thought it was a matter of a flat tyre and continued to drive for another 65 m. She stopped the car only when advised by another passenger.

Having crashed onto the vehicle, glider continued in its movement forward during which the tail and the cockpit cover frame detached.

The torso of the glider fuselage stopped cca 12 m after the crash onto the car, still being in the upside-down position. Glider's nose was pointing to the south in the direction of Rokycany.

Pilot

He had a valid SPL Flight Crew Licence and a valid class 1 medical certificate.

He had experience with flying on airliners, MEP, SEP, ULA and gliders.

In 1998–2022, he flew 428 hrs 29 min on gliders out of which 91 hrs 10 min as an instructor.

In 2004–2022, he flew 33 hrs 52 min on type (excluding the event flight).

In the critical phase of flight, pilot made two turns at low altitude approximately 100–500 m from THR RWY 27 LKRY. During the second turn, he probably realised that the upstream was insufficient for overflight to LKPS and thus decided to land at LKRY. That is why he was probably reducing the radius in the second turn.

According to the Flight Manual, paragraph 4.5.3, the circling radius reduction may cause the loss of wing lift and a stall-spin.

Aircraft

Glider underwent regular annual maintenance on 25 June 2022 with no findings. Airworthiness inspection was performed on 16 July 2022.

There had been no defects during the flights preceding the critical event flight.

Weather

Weather conditions had no impact on the accident origin and course.

During the first flyover above D5 highway, the upstream was narrow and the climb speed was 0.5–1 m·s⁻¹, lasting 15 seconds.

During the second flyover, in the first turn, the climb speed in the upstream was only 0.1–0.2 m·s⁻¹, lasting 5 seconds.

According to the pilots who have experience with flying in the vicinity of LKRY, these are very narrow and highly turbulent thermal currents.

Analysis

Pilot

- He had a valid Flight Crew Licence.
- He held a valid medical certificate.

- He had experience with flying on airliners, MEP, SEP and ULA.
- In 1998–2022, he flew 428 hrs 29 min on gliders out of which 91 hrs 10 min as an instructor.
- In 2004–2022, he flew 33 hrs 52 min on the type (excluding the event flight). In 2008–2022, he flew only 32 min (excluding the event flight).
- He took off from LKPS for a flight along the route in the direction of Tachov – Příbram – Plasy.
- Approximately from ARP LKPM, he started losing altitude.
- Cca 24 km south-east from LKPS he changed the flight direction to LKRY.
- Near the village of Volduchy, he made two right-hand turns in a weak upstream.
- He continued towards LKRY with an average loss of altitude of approximately $1 \text{ m}\cdot\text{s}^{-1}$.
- During flyover above D5 highway, he entered a narrow upstream.
- He did not decide to land at LKRY, but made two right-hand turns at a low altitude above the crossing of D5 highway and road No. II/232.
- In previous flight phases, he did not reduce the speed below the stall speed as defined in the Flight Manual.
- He made the second turn with a big roll and decreasing circling radius, which may be the potential cause of glider's fall as per Flight Manual, paragraph 4.5.3.
- The glider entered a right-hand spin at a sharp angle.
- In a right roll of more than 90° , the right half of the wing first hit road No. II/232, then the front upper part of the glider fuselage and the cockpit followed, which made the glider turn upside down.
- During the twist, the glider's left half of the wing hit the rear part of a passenger car driving on the said road towards Rokycany.
- The complex forensic medical analysis stated that the air accident was not caused by any health condition.

Aircraft

- Technical condition of the glider had no impact on emergence of the air accident.
- The Flight Manual, paragraph 4.5.3, reads that with a decreasing circling radius, the glider has a tendency to wing stall resulting in glider's buffeting and subsequent fall.

Weather

- Meteorological conditions were suitable for performance of the planned flight.
- In the area of the final flight phase, there were weak narrow turbulent upstreams.

Aircraft Accident Cause

The cause of the air accident was the sequence of the following events:

- Insufficient hours flown on type;
- Decision to make turns (continuation of flight) at a low altitude instead of landing at LKRY;
- Failure to master the piloting technique when manoeuvring at a low altitude with a subsequent spin-stall.

Safety Recommendations

The AAI issues no safety recommendation.

