MINISTRY OF INFRASTRUCTURE

AIR, MARINE AND RAILWAY ACCIDENT AND INCIDENT INVESTIGATION UNIT

Tržaška cesta 19, 1000 Ljubljana

T: 01 478 81 10

E: mzi.airsafety@gov.si

www.mzi.gov.si

OBVESTILO O ZAKLJUČKU PREISKAVE

The accident of a glider DG-100 G Elan, reg. D-2964, June 14, 2024, Moškanjci – Ptuj Airfield (LJPT)

GENERAL:

The pilot took off in an aerotow with the DG-100 G Elan glider at 13:09, heading runway 11 at Ptuj Airfield. After several minutes of soaring within the airport zone, the pilot safely landed at 13:25. The flight was uneventful. After landing, the pilot remained in the cockpit, preparing for another takeoff, which took place at 13:46. The aerotow during the second takeoff proceeded normally and without any irregularities until the moment the pilot, immediately after takeoff, realized that the airbrakes were in the extended position. According to the pilot's statement, the airbrakes unexpectedly deployed at an altitude of approximately 10 to 15 meters above runway. As a result, the aircraft pitched downward, struck the grass runway with the wheel, bounced, and impacted the grass runway multiple times with the lower fuselage. The pilot then released the tow rope and aborted the takeoff. The towplane (Super Cub) continued its climb and landed safely after releasing the tow rope. The incident resulted in material damage to the landing gear and the lower fuselage of the glider. The pilot was not injured**.**

Figure 1: Final Aircraft Position at the Accident Site

Aircraft Information:

- Aircraft Type: DG-100 G ELAN
- Manufacturer: Elan / Slovenia (formerly Yugoslavia)
- Serial Number: E 99 G69
- Year of Manufacture: 1982
- Registration Mark: D-2964 (registered with the German aviation authorities)
- Total Flight Hours: 1.098 hours
- Airworthiness Certificate: ARC – valid from September 10, 2023, to October 12, 2024[1]

Pilot Information:

The pilot, a 59-year-old Slovenian citizen, holds:

- A Sailplane Pilot License (SPL), issued on September 28, 2015,
- A LAPL (Light Aircraft Pilot License) medical certificate, issued on April 19, 2023, valid until April 19, 2025, with restriction VML (Valid only with correction for defective distant, intermediate, and near vision).
- Total flight hours up to the date of the accident: 160 hours
- Flight hours in the past 12 months: 25 hours, 29 takeoffs

ANALYSIS:

The Air, Marine and Railway Accident and Incident investigation Unit was immediately notified of the event by AC Ptuj and the pilot involved in the occurrence. In the initial phase of the investigation, the investigator conducted an on-site inspection of the glider and gathered information from the pilot and relevant members of AC Ptuj. The competent police station of PU Maribor was also informed about the event and conducted an inspection at the accident site.
Subsequently, a review of the aircraft and pilot documentation from the personal file at CAA was carried out, along with an analysis of the manufacturer's operational documents, aircraft maintenance records, flight activities at the airfield, and weather data at the time of the occurrence. The analysis of the obtained data did not reveal any contributing factors, discrepancies, or deficiencies. The weather conditions at the time of the event were favorable for flying, and the radio communication functioned correctly.
The pilot involved in the occurrence had accumulated over 160 hours on gliders and maintained his flying qualifications without significant interruptions.
From the analysis of the pilot's statements, it was determined that during the takeoff phase, the pilot recognized the characteristic sound of air rushing over open airbrakes, leading him to conclude that the airbrakes had deployed. Immediately after, the pilot directed his gaze to the left and right wings, confirming that the airbrakes were in an extended position. While checking the position of the airbrakes, the pilot lost visual contact with the towplane, which consequently resulted in a loss of control over the aircraft's position during takeoff. As the aircraft lost stability at a low altitude, the lower fuselage impacted the grass runway. Upon ground impact, the pilot released the tow rope and immediately retracted the airbrakes, causing the aircraft to lift again due to takeoff speed and impact the runway multiple times before coming to a final stop approximately 600 meters from the initial ground impact. The towplane pilot safely landed after aborting the aerotow.

[1] Issued by the Slovak authorized organization under Part ML – Organization No. SK.CAO.001

During the investigation, the glider was inspected by an authorized maintenance and repair organization, where a functional test of the airbrake system was conducted. Dynamometer measurements were performed in multiple tests to determine the unlocking force on the airbrake control lever in the cockpit, following the DG-100 maintenance manual (issued in December 2009, rev. 2023) and TN No. 301/18, 323/9, 826/34. The measured unlocking force ranged between 158N and 159N, which falls within the acceptable limits of 150N to 200N. It was determined that the airbrake system was operating correctly at the time of the occurrence and in accordance with the manufacturer's specifications.
The occurrence has been categorized as an »Abnormal Runway Contact« (ARC), which refers to any landing or takeoff involving an unusual contact with the runway or landing surface.

FINDINGS:

From the interviews with the pilot and the analysis of collected data, it was determined that after the first flight, which lasted 16 minutes, the pilot remained in the cockpit of the glider with the intention of conducting another flight. While waiting for the second takeoff, the pilot stayed in the cockpit for approximately 21 minutes, which provided sufficient time to check the position of the airbrakes, which were likely not fully retracted and locked before takeoff.
Taking off with open or unlocked airbrakes is a common mistake, often resulting from an incomplete execution of the pre-flight checklist during flight preparation. This procedure is defined in the operational manuals of flight schools as well as in the manufacturer's instructions for gliders. Unsecured airbrakes tend to deploy automatically during acceleration due to aerodynamic forces. Instructions and procedures addressing this issue are specified for both the glider pilot and the towplane pilot. If the airbrakes are open during the takeoff phase, the glider pilot must prioritize maintaining altitude control during the aerotow by monitoring the position of the towplane (as illustrated in the image below).

Figure 2: Visual Contact with the Towplane During Takeoff Phase

To maintain knowledge and experience in glider operations, a best practice is the periodic implementation of refresher seminars for both powered and glider pilots. For this purpose, the use of AC Celje training material, available at the AC Postojna website:
https://www.aeroklub-postojna.si/wp-content/uploads/2020/03/Aerovlek-OP.pdf,
provides an opportunity to refresh theoretical knowledge, enhance awareness of potential critical situations during aerotow operations, and improve decision-making in the event of emergency situations, which in aviation are classified as emergency or abnormal procedures.

SAFETY RECOMMENDATION:

During the investigation, safety concerns were identified regarding the practical adherence to pre-flight checklists and familiarity with emergency procedures. In aviation practice, such instructions are well-documented and addressed in operational documents issued by aircraft manufacturers, flight schools, aviation organizations, aeroclubs, aviation associations, glider owners, and operators. The investigation authority does not issue specific safety recommendations in this case; however, it expects operators, owners, users, training organizations, and glider pilot license holders to implement safety measures within their internal oversight framework to mitigate operational risks.
The aviation Safety Investigation Authority will report the occurrence to the relevant aviation oversight authority – CAA, in accordance with civil aviation safety regulations.

Ljubljana, February 3, 2025

Toni STOJČEVSKI
Chief Investigatior