

Short summary of the occurrence

On 15 December 2017, after taking off from Jakabszállás Airport, the pilot performed a brief local flight, via Fülöpjakab village, with some passengers on board. Returning to Jakabszállás Airport in weather conditions getting adverse, he attempted to land in tail wind. After touchdown, he judged he could not stop before the end of the runway, so he decided to go around. During the manoeuvre, the main landing gear of the aircraft got caught in the edge (protruding 20 to 25 centimetres) of the adjacent agricultural area, and then the aircraft touched down in the same agricultural area. After a few feet of rolling on the loose, wet ground, the nose landing gear broke and separated from the fuselage and the aircraft finally came to rest on its back after tipping over the nose cone. No personal injuries occurred, but the aircraft was badly damaged. The IC is of the view that the accident was caused by incorrect assessment of the situation by the pilot, and his incomplete pre-flight meteorology preparation also contributed. The Investigating Committee (hereinafter: “the IC”) found no circumstance which would warrant a safety recommendation.



*Figure 1: Earlier photo of the aircraft concerned
(Source: Wikipedia)*

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Factual information

Occurrence class:		Accident			
Date of occurrence:		15 December 2017, 14:30LT ¹			
Location of occurrence:		Jakabszállás Airport (LHJK)			
Type and registration of aircraft:		Cessna 172N, HA-SJY			
Year of manufacture, serial number:		1977, 17268609			
Type and number of engines:		1 piece, Lycoming O-320-H2AD			
Purpose of flight:		Non-commercial (private, local)			
People		Crew	Passenger	Other	
	Number:	1	3	0	
	Injured:	None	None	---	
Damage to property:		Aircraft: Significantly damaged			
Licence and ratings of PIC:		PPL(A) ² , SEP(Land) ³ ,			
Age and citizenship of PIC:		58 years old, Hungarian, male			
Flight experience of PIC:		Total	On the type	Last 90 days	Last 7 days
	Flying hours:	284	more than 61	6	0
Sources of information:		Report, on-site investigation, photographs interviews with the pilot and witnesses, meteorological data			

¹ Local Time

² Private Pilot Licence (Aeroplane)

³ Single Engine Piston (Land)

History of the flight

The pilot and his friends arrived at Jakabszállás Airport on 15 December 2017, about noon. According to the IC's information, the pilot obtained information on the weather conditions from a general (less frequently updated) meteorological website but did not obtain detailed information from aviation meteorological sources. According to the pilot, the weather was cloudy, but it was already favourable around 14 o'clock. He said that at the time of the take-off at 14 o'clock, there was a weak wind of 140°, and "the sun was also seen through the clouds". Thus, judging that the weather was good, the pilot carried out the take-off at 14 o'clock (with three friends on board), under VMC⁴, in the type Cessna 172 aircraft with the registration mark HA-SJY, heading the runway 14, from Jakabszállás Airport. In accordance with his plans, the pilot conducted a brief local flight via Fülöpjakab village. While approaching the airport, he saw a "dark cloud" before the fourth turn of the traffic pattern of runway 14, so he decided to land as soon as possible. He performed the approach at a speed of 70-75 knots in the runway 14. With the usual parameters, using full flaps, the pilot perceived that he was a little faster than usual, so he chose the longer grassy runway instead of the asphalted one. However, after the touchdown, he perceived that the aircraft was not slowing down enough, despite brake use. As approaching the end of the runway, he judged he could not stop by then, so he decided to go around. According to the pilot, he then turned the carburettor heating off, applied full throttle, retracted the flaps, and so the aircraft lifted. However, after some ascent, the main landing gear of the aircraft principal got caught in the edge (protruding 20 to 25 centimetres) of the agricultural land adjacent to the airport and the aircraft touched down again in the same agricultural land. After rolling 33 to 36 feet [10-11 m] on the loose, wet ground, the nose landing gear also touched down and broke. Then, rolling along the two main landing gears and ploughing the soil with the remains of the broken nose gear, the aircraft rolled on for 25 to 30 feet [8 to 10 m], and finally it tipped over the nose cone and got into resting position on its back. The pilot de-energized the aircraft. All people on board released their restraint straps and left the aircraft. According to the pilot, it was then he realized that the wind direction had changed in comparison to the take-off situation, and that he had landed in a strong tail wind. No personal injuries occurred during the accident, but the aircraft was severely damaged.

The scene and the wrecks

When the IC arrived at the scene, the aircraft was approximately 116 metres downstream of the 32L (grassy) runway threshold, about 30 m from the edge of the airport, lying on its back in the ploughland, de-energized, but with no sign of disassembly. As a result of the slip on the loose, wet ground and the tipping over, the aircraft was badly damaged. The damages to the propeller showed that the engine had been running and the propeller rotating in the course of the accident. The propeller, the nose, and the vertical stabilizer were also damaged. The tail section bent, the left wing took the form of a wave, and its support fractured. The IC found that the flap control lever was open to 10°, and the flaps were open to a greater extent than that.



Figure 2: The aircraft at the scene following the accident (Source: TSB)

⁴ VMC – Visual Meteorological Conditions

The pilot

At the time of the occurrence, the pilot had valid license and rating for the given flight. His licence was issued in 1999. He had flown regularly with the aircraft involved, and he had known the airport. He performed most of his take-offs and landings at Jakabszállás Airport.

The aircraft

According to information available to the IC, the aircraft was properly maintained and capable of flying before the occurrence.

Malfunctioned equipment

No information emerged during the investigation on malfunction of the structure or any system of the aircraft prior to the occurrence, thus contributing to the occurrence or influencing the course of events.

Weather and visibility

The accident took place late in the afternoon, but still in daytime visibility conditions. The sunset in Jakabszállás was at 15:54 on that day. According to the Hungarian Meteorological Service, on the day of the incident, the weather of most of the continent was determined by a large cyclone swirling in the centre of North-Western Europe, in which a waving frontal zone formed the weather of our country. The sky was mostly cloudy or overcast, with rains and showers in many places, and with scattered thunderstorms (at about 11:15-11:30LT around Kecskemét city) in the morning. In the late afternoon, intensive rainfall reached our country from the south. The front was preceded by a lively, sometimes strong south-southeast wind, and followed by a moderate northwest wind. On the basis of data from the military meteorology station in Kecskemét, visibility improved temporarily to 10 km at 14 o'clock (LT) and the rain stopped, but intense showers arrived at the region by 15 o'clock (LT) again, impairing visibility to 5 km, and making the winds blow from the northwest, also causing intense wind gusts.

Aerodrome

Jakabszállás Airport is a Class IV aerodrome (LHJK) located at a distance of 2 km of Jakabszállás village. Its altitude above sea level is 111 m. The orientation of its grassy runway is 14R/32L, its size is 935m x 30m; the orientation of the asphalted runway is 14L/32R (dimensions: 600m x 18m).

Additional information

On the basis of the unanimous reports of those on board, each occupant harnessed themselves and fastened their restraint straps before take-off, in compliance with the pilot's instructions.

Analysis

On the basis of the data obtained, the aviation meteorological information available on the day of the occurrence provided information on the expected predominantly cloudy weather, and embedded showers/thunderstorms, including wind-related changes. However, according to information of the IC, the pilot did not obtain detailed information from aviation meteorological sources about the meteorological conditions influencing his flight prior to take-off. He performed his take-off and flight on the basis of the momentary weather he had observed. Returning to the airport, he perceived a deterioration of the weather and a "dark cloud" before the fourth turn of the traffic pattern of runway 14. However, he did not anticipate any possible changes in the direction or strength of the wind from any of the above signs. He performed landing according to the supposed unaltered wind direction and wind speed. However, the direction and strength of the wind had changed in the meantime, due to the prevailing weather front and the embedded thunderstorm. As a result, the pilot carried out the landing in a strong, slightly pushy tail wind. According to the IC, the unexpectedly worsening weather conditions and then the higher-than-normal speed over the runway and the excessively approached end of the runway increased the Pilot's mental loads. In this precarious situation, given the circumstances, the Pilot chose the solution that seemed appropriate for him: the go-around. However, the intensity of ascent from the ground was no longer sufficient, so the main landing gears of the aircraft get caught in at the edge of the adjacent agricultural land which was 20 to 25 cm higher than the runway. As a result, the aircraft descended back to the loose, wet soil. Despite the running engine, the sunken main landing gears further decelerated the aircraft until the nose landing gear touched down. The force of the remaining speed of the aircraft caused the nose landing gear

sinking into the soil to break. After all, its remaining kinetic energy proved to be enough for it to tip over the nose and come to rest on its back.


According to the Pilot, he had closed the flaps when starting the go-around. At the scene of the occurrence, the flap control lever was at 10° and the flaps of the aircraft were extended to a larger extent than that. The IC's position is that the Pilot, in line with his account, probably started to retract the flaps, but they were not fully retracted because of the shortage of time. The IC is of the opinion that the flaps left extended contributed to the lower-intensity ascent of the aircraft, and thus potentially to the final outcome of the accident as well.

No personal injury occurred during the incident, which, according to IC, was to a significant extent due to the properly used restraint straps.

Conclusions

The IC is of the view that if the pilot had obtained information on the meteorological conditions of the region prior to take-off and the relevant forecasts, he could have anticipated possible embedded showers/thunderstorm and the change to wind direction and wind speed. In possession of such information, he could probably have been able to assess the situation correctly and make an earlier decision relating to go-around or would even have refrained from landing in tail wind beforehand.

In the light of the foregoing, the IC is of the view that the accident was caused by an incorrect assessment of the situation by the Pilot, and his incomplete pre-flight meteorology preparation also contributed.


Zsuzsanna Nacsa JD
Investigator-in-charge


Gábor Torvaji
IC Member

The sole objective of the safety investigation is to reveal the causes and circumstances of aviation accidents or incidents and to initiate the necessary technical measures and make recommendations in order to prevent similar cases in the future. It is not the purpose of this activity to investigate or apportion blame or liability.

General information

This investigation is being carried out by Transportation Safety Bureau on the basis of

- Regulation (EU) No 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation and repealing Directive 94/56/EC,
- Act XCVII of 1995 on aviation,
- Annex 13 identified in the Appendix of Act XLVI. of 2007 on the declaration of the annexes to the Convention on International Civil Aviation signed in Chicago on 7th December 1944,
- Act CLXXXIV of 2005 on the safety investigation of aviation, railway and marine accidents and incidents (hereinafter referred to as Kbv.),
- NFM⁵ Regulation 70/2015 (XII.1) on safety investigation of aviation accidents and incidents, as well as on detailed investigation for operators,
- In absence of other relevant regulation in the Kbv., in accordance with Act CL of 2016 on General Public Administration Procedures.

The competence of the Transportation Safety Bureau of Hungary is based on Government Regulation № 230/2016. (VII.29.) on the assignment of a transportation safety body and on the dissolution of Transportation Safety Bureau with legal succession.

Pursuant to the aforesaid laws,

- Transportation Safety Bureau Hungary shall investigate aviation accidents and serious incidents.
- Transportation Safety Bureau Hungary may investigate aviation and incidents which – in its judgement – could have led to an accident with more serious consequences in other circumstances.
- Transportation Safety Bureau Hungary is independent of any person or entity which may have interests conflicting with the tasks of the investigating body.
- In addition to the aforementioned laws, the ICAO Doc 9756 and the ICAO DOC 6920 Manual of Aircraft Accident Investigation are also applicable.
- This Report shall not be binding, nor shall an appeal be lodged against it.
- The original of this report was written in the Hungarian language.

Incompatibility did not stand against the members of the IC. The persons participating in the safety investigation did not act as experts in other procedures concerning the same case and shall not do so in the future.

The IC shall retain the data having come to their knowledge in the course of the safety investigation. Furthermore, the IC shall not be obliged to make the data – regarding which the owner of the data could have refused its disclosure pursuant to the relevant act – available for other authorities.

This Final Report

was based on the draft report prepared by the IC and sent to all affected parties (as specified by the relevant regulation) for comments.

The Pilot made comments to the Draft Report, as a result of which the IC clarified the text of the Draft Report, but did not adopt the comments.

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Translation

The present document is a translation from Hungarian. Although efforts have been made to provide a translation as accurate as possible, discrepancies may occur. In such eventuality, the Hungarian version is considered overriding.

⁵ Ministry of National Development