AIRCRAFT ACCIDENT INVESTIGATION REPORT

Jan 10, 2025

Adopted by the Japan Transport Safety Board

Chairperson TAKEDA Nobuo
Member SHIMAMURA Atsushi
Member MARUI Yuichi
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Member NAKANISHI Miwa
Member TSUDA Hiroka

Company	Corporation
Type, Registration Mark	Alexander Schleicher ASK13 (Glider, Two-Seater), JA2469
Accident Class	Trainee pilot injury due to hard landing
Date and Time of the Occurrence	At About 11:31 Japan Standard Time (JST:UTC+9hours), July 14, 2024
Site of the Accident	On the Runway Strip at Kitami District Temporary Operation Site, Kitami City, Hokkaido Prefecture (43° 46' 48" N, 143° 43' 51" E)

1. PROCESS AND PROGRESS OF THE ACCIDENT INVESTIGATION

Summary of the Accident	On Sunday, July 14, 2024, the glider took off from Kitami District Temporary Operation Site in Kitami City, Hokkaido Prefecture by aero tow for solo flight training, with only a trainee pilot on board, and when landing on the Runway Strip at the Operation Site, it made a hard landing, and the trainee pilot sustained a serious injury.
Outline of the Accident Investigation	On July 14, 2024, the Japan Transport Safety Board (JTSB) designated an investigator-in-charge and an investigator to investigate this accident. Comments on the draft Final Report were invited from the parties relevant to the cause of the accident. Comments on the draft Final Report were invited from the Relevant State.

2. FACTUAL INFORMATION

Aircraft Information

Aircraft type:	Alexander Schleicher ASK13
Serial number: 13513	Date of manufacture: August 22, 1975
Airworthiness certificate: No. 2024-65-06	Validity: July 7, 2025

Personnel Information

Trainee pilot	Age 21
Flight training certificate	Validity: October 2, 2024
Total flight time	31 hours 51 minutes (83 launches)
Flight time on the type of the aircraft	20 hours 48 minutes (66 launches)
Flight time in the last 30 days	2 hours 13 minutes (8 launches)
Flight instructor	Age 32
Private pilot certificate (Glider)	January 23, 2012

Pilot competence assessment/confirmation	
	Expiration date of piloting capable period: April 30, 2026
Flight instructor rating	March 10, 2015
Class 2 aviation medical certificate	Validity: February 6, 2028
Total flight time	388 hours 41 minutes (1,579 launches)
Flight time on the type of the aircraft	17 hours 0 minute (59 launches)
Flight time in the last 30 days	10 hours 11 minutes (29 launches)

Meteorological Information

According to the statements of the trainee pilot, the wind speed at the time of landing was 1 to 2 m/s, and the wind direction was almost head wind to the landing direction.

Event Occurred and Relevant Information

(1) History of the Flight

On July 14, 2024, at 11:14 a.m., the glider took off from the 800 m x 25 m paved runway strip (hereinafter referred to as "Runway") 10 at Kitami District Temporary Operation Site by aero tow with one trainee pilot on board for solo flight training, which is required to obtain a private pilot license.

After releasing the tow rope at an altitude of approximately 2,100 ft, the glider passed a checkpoint*1 set on the south traffic pattern of the Operation Site at an altitude of approximately 1,400 ft and began its approach to Runway 10.

At approximately 11:31, when the glider flew at an airspeed of approximately 100 km/h and touched down at the touchdown target point, which was located approximately 150 m from the threshold of Runway 10, it bounced, floated approximately 1 m, then made a hard landing, landing roll to a position approximately 310 m from the threshold of Runway 10, and came to a stop.

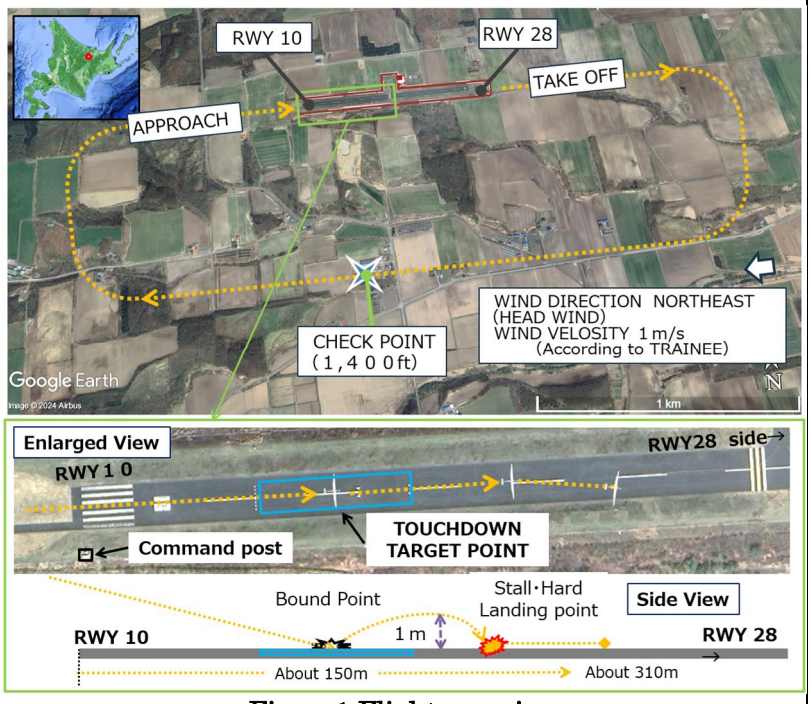

Figure1 Flight overview

The trainee pilot was then unable to get out of the glider on their own due to pain in the lower back but was able to get out with the help of the flight instructor and other trainee pilots who had gathered around the glider to move it. The trainee pilot was then taken to the hospital by ambulance where the trainee pilot was diagnosed with a fractured spine.

(2) About the Glider

There was no damage to the glider as a result of the accident.

At the time of this accident, the weight and center of gravity of the glider were both within the allowable range.

(3) Flight Operations at the Time of Landing

*1 A "checkpoint" is a point set on the traffic pattern directly beside the touchdown target, and is the point at which the landing approach begins. When passing through a checkpoint, the pilot communicates his intention to approach the landing via radio and confirms the altitude.

According to the trainee pilot's statement, the trainee pilot felt that the approach angle for landing was appropriate, but the glider gained speed and approached while the trainee pilot was unable to control the speed. And when the trainee pilot performed a flare maneuver[*2] to touch down, the glider bounced. The trainee pilot had never experienced a bounce so severe as to require recovery (attitude recovery) maneuvers, so the trainee pilot became upset when the glider bounced and floated, and the glider slowed down with the nose up, while the trainee pilot did not perform recovery maneuvers, resulting in a hard landing from a height of about 1 m, during which the trainee pilot sustained an injury to the lower back. The trainee pilot also stated that as the wind at the time of landing was weak at about 1 m/s, the trainee pilot should have controlled the landing speed of the glider at about 95 km/h.

(4) Training Status of Trainee Pilot

On the day of the accident, the trainee pilot had completed two flight training sessions with the Corporation's flight instructor on board (hereinafter referred to as "the On-board Training ") and had received a proficiency certificate for solo flight based on the "Safety Criteria for Solo Flight (Gliders) (dated December 18, 1997, Ku Jo No. 2103)" (hereinafter referred to as the "Safety Criteria") issued by the Civil Aviation Bureau of the Ministry of Land, Infrastructure, Transport and Tourism from the Instructor. The flight at the time of the accident was the fourth solo flight training session for the trainee pilot.

According to the statement of the instructor, during the first On-board Training session on the day of the accident, the instructor instructed the trainee pilot by pointing out that the approach angle was a little large and that the flare operation upon landing was within the allowable range but insufficient.

During the second On-board Training session on that day, the trainee pilot's control of the approach speed during landing was not sufficient, but the skills that had been instructed were generally improved, therefore the instructor determined that there would be no problem with the trainee pilot flying solo.

According to the statements of other flight instructors who witnessed the accident at the PISTE (command post), the glider touched down at the touchdown target point while keeping on the centerline of the runway. In the On-board Training with the trainee plot before the accident, the glider's approach speed during landing was sometimes 95 to 100 km/h when it should have been controlled at 90 to 95 km/h, thus the instructor had ever instructed the trainee pilot on the speed control.

From the PISTE, the glider's approach angle appeared to be large, but its speed did not appear to be extremely high, however, the flare operation appeared to be insufficient.

3. ANALYSIS

The JTSB concludes that if the glider was bouncing and floating at the time of the touchdown, the recovery maneuver to regain its attitude should have been to close the dive brakes and hold the stick until the glider started to sink again, then flare it again as it descended, however, it is most likely that as the trainee pilot kept the nose of the glider up, the angle of attack gradually increased and the glider made a hard landing from a height of about 1 meter, injuring the trainee pilot.

It is highly probable that the reason for the bounce of the glider was that the glider was

*2 A "flare maneuver" is a series of operations in which the nose of an aircraft is pulled up just before touchdown on the runway to reduce the sink rate and the impact of landing.

approaching without being able to control its speed, in addition, the flare was insufficient, and the sink rate of the glider was not sufficiently controlled.

Regarding the failure to control the speed of the glider, the insufficient flare operation, and the failure to perform recovery maneuver, it is probable that the trainee pilot was inexperienced and was unable to acquire stable skills due to the training conditions during the On-board Training.

Flight instructors who certify solo flying skills are responsible for confirming that flight trainees have the necessary knowledge and skills in accordance with the Safety Criteria. It is more likely that a lack of stability in the trainee pilot's skills was a contributing factor to the occurrence of this accident, therefore, when certifying inexperienced trainee for solo flying, it must ensure to confirm that the skills and knowledge they have taught are consistently improved.

4. PROBABLE CAUSES

The JTSB concludes that the probable cause of this accident was that when the glider bounced and floated at the time of the touchdown, the trainee pilot most likely kept the nose of the glider up without performing the recovery maneuver, causing the angle of attack to gradually increase and the glider to make a hard landing from a height of about 1 meter, resulting in the injury to the trainee pilot.

5. SAFETY ACTIONS

Flight instructors who certify solo flying skills must ensure that the skills and knowledge they have taught are steadily improved.