

AIRCRAFT ACCIDENT INVESTIGATION REPORT

January 15, 2026



Adopted by the Japan Transport Safety Board

Chairperson RINOIE Kenichi
 Member TAKANO Shigeru
 Member DOZONO Masato
 Member SODA Hisako
 Member TSUDA Hiroka
 Member MATSUI Yuko

Company	Nagano Gliding Association
Type, Registration Mark	Alexander Schleicher ASK21 (Glider, Two-Seater), JA21YP
Accident Class	Damage to the aircraft during landing
Date and Time of the Occurrence	At About 13:50 Japan Standard Time (JST: UTC+9 hours), October 26, 2024
Site of the Accident	Near Naganoshi Glider Site, Nagano City, Nagano Prefecture (36° 38' 20" N, 138° 15' 34" E)

1. PROCESS AND PROGRESS OF THE ACCIDENT INVESTIGATION

Summary of the Accident	On Saturday, October 26, 2024, the glider sustained damage to the outer skin of the fuselage and others when landing in a grassy area near Naganoshi Glider Site. There were two people on board: an instructor pilot and a trainee. Neither of them sustained injuries.
Outline of the Accident Investigation	On October 26, 2024, the Japan Transport Safety Board (JTSB) designated an investigator-in-charge and an investigator. Comments on the draft final report were invited from the parties relevant to the cause of the accident and Relevant State.

2. FACTUAL INFORMATION

Aircraft Information	
Aircraft type:	Alexander Schleicher ASK21
Serial number: 21887	Date of manufacture: September 22, 2011
Airworthiness certificate: No. 2024-57-06	Validity: July 26, 2025
Personnel Information	
(1) Instructor: Age 50	
Private pilot certificate (High Class Glider)	November 17, 1995
Pilot competence assessment	
Expiration date of piloting capable period: January 30, 2026	

Flight instructor rating (Glider)	March 23, 2020
Class 2 aviation medical certificate	Validity: December 1, 2024
Total flight time	1,209 hours 15 minutes (2,374 launches)
Flight time in the last 30 days	8 hours 12 minutes (47 launches)
Total flight time on the type of glider	198 hours 27 minutes (798 launches)
Flight time in the last 30 days	2 hours 21 minutes (21 launches)
(2) Trainee: Age 29	
Private pilot certificate (High Class Glider)	June 20, 2016
Pilot competence assessment	
	Expiration date of piloting capable period: January 9, 2026
Class 2 aviation medical certificate	Validity: December 20, 2026
Total flight time	111 hours 39 minutes (449 launches)
Flight time in the last 30 days	0 hour 47 minutes (2 launches)
Total flight time on the type of glider	33 hours 33 minutes (147 launches)
Flight time in the last 30 days	0 hour 02 minutes (1 launch)

Meteorological Information

According to statements from the instructor, trainee and association officials, the weather conditions around the glider site were clear at the time of the accident, with good visibility and no turbulence in the airflow. The wind velocity was less than 1 m/s, with wind direction between 050° and 060°.

Event Occurred and Relevant Information

(1) History of the Flight (see Figure 1 and Figure 2)

At 13:50, the glider was launched from Runway 04L at the Glider Site, with the instructor pilot seated in the rear seat and the trainee in the front seat, to conduct emergency operations training in preparation for losing the towing force of the winch (hereinafter refer to as “the winch power off”) at a low altitude (assumed during transition*¹) during winch launches (Figure 1, a.).

Shortly after the glider became airborne and established the climb attitude, the trainee realized that the winch had lost its towing force. The trainee therefore promptly restored the glider to a horizontal position and released the tow line (Figure 1, b.). At this time, the speed indicator showed about 90 km/h, and the altimeter showed about 430 m (about an altitude of 90 m the above ground level (AGL)).

After confirming the position of the runway end, the trainee extended the dive brakes and attempted to land on the runway. However, the instructor judged that using only the dive brakes would not enable the glider to decrease its altitude sufficiently to land within the runway, immediately took over control of the glider (Figure 1, c.).

To further increase the descent rate, the instructor performed a forward slip*² in addition to using the dive brakes.

Once the glider's descent rate had stabilized after the forward slip had begun, the instructor predicted that the touchdown point would be approximately 100 m short of the runway's end.

*1 “Transition” refers to the phase in which the aircraft gradually moves from the initial climb to the mid-climb phase. During this phase, the AGL altitude is set to be between 60 m and 100 m.

*2 “Forward slip” is the primary method of dissipating altitude without increasing the glider’s speed, which involves descending while sliding sideways to maintain the approach path.

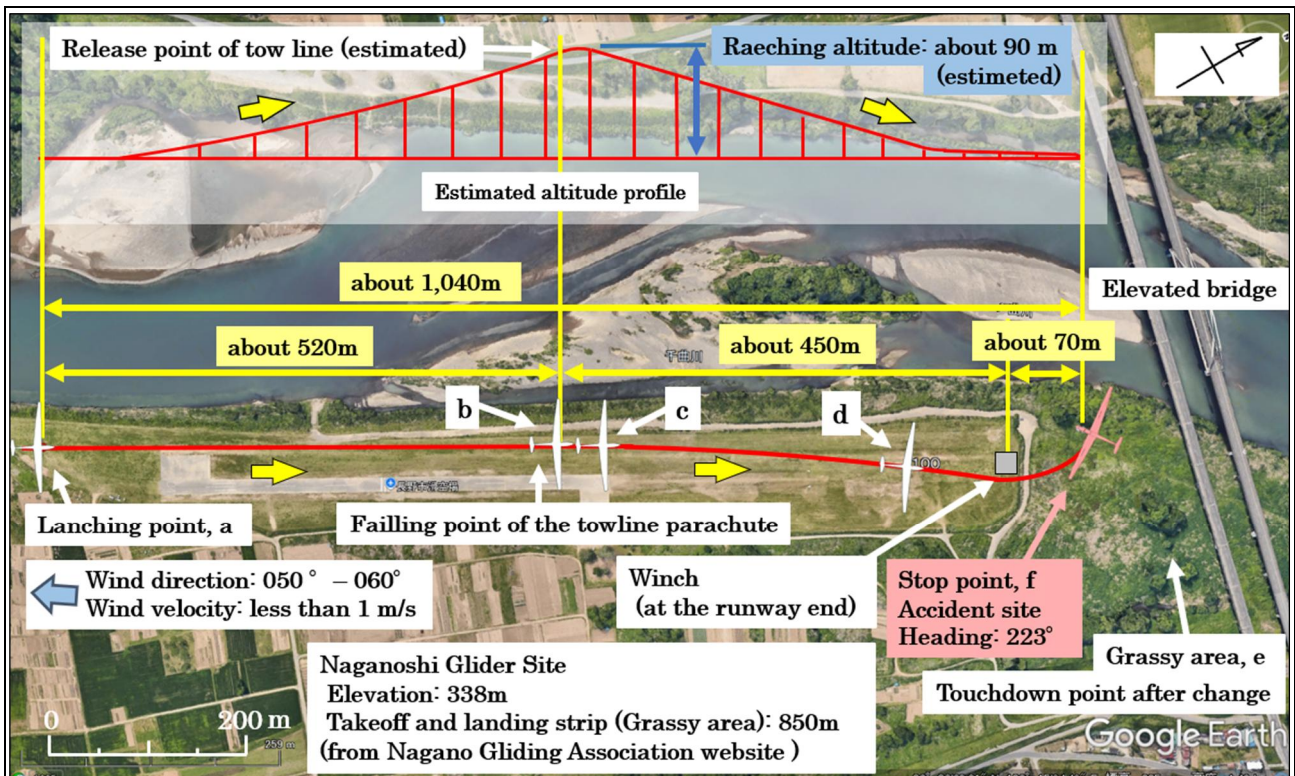


Figure 1: Estimated Flight Route

However, the instructor judged based on his experience that, as a distance of approximately 150 m would be required to come to a stop from touching down, if they continued to land on the runway, the only option would be to deliberately perform a ground loop*³ to forcibly keep the glider on the runway, otherwise, the glider would overrun the runway.

As the airspeed exceeded 110 km/h upon completion of the forward slip, the instructor judged that if a ground loop were to be performed, the glider would lose control and possibly crash into a vehicle with a winch or other structures installed on the ground. The instructor also determined that, if the glider overran the runway, it might fall off a pavement step-down beyond the end of the runway.

Concluding that neither scenario would ensure the safety of the occupants, the instructor aborted the landing on the runway (Figure 1, d.) and changed the landing point to the grassy area (Figure 1, e.) located about 70 m northeast ahead of the runway.

When the glider glided over the runway and passed the runway end, the instructor made it turn left to avoid colliding with trees and plants in the grassy area (Figure 1, e.) and the elevated bridge ahead. However, as the left main wing was lowered during the left turn, it touched the trees and plants, causing the glider to touch down while rotating to the left. After skidding to the right, the right side of the nose collided with the trees and plants and the glider came to a stop (Figure 1, f.). Neither of the instructor nor the trainee sustained injuries.

*³ A “ground loop” is a phenomenon whereby the wingtip of an aircraft touches the ground during a ground roll, causing the aircraft to suddenly rotate sideways and make a large turn, which is considered a phenomenon to be avoided as it can potentially cause aircraft accidents due to inertia causing the aircraft to lose control.

(2) Glider Damage and Others (see Figure 2)

Substantial

- Cracks in the outer skin of the left fuselage (required major repair)
- Cracks in the leading edge of the left wing
- The rear seat canopy was broken.



Figure 2: Main Damage to the Glider(left fuselage)

(3) Information on the Accident Site

The winch towline parachute, which had separated from the glider, was found on the runway about 520 m from the launch point.

(4) Training

The training in which the accident occurred, was planned by the association to help its members maintain and improve their skills. The training simulated operations in abnormal and emergency conditions during tows, as stipulated in the Detailed Regulations of Evaluation for Pilot Competence Assessment*⁴ (revised on September 20, 2023, KOKU-KUU-AN-SEI No. 1055) established by the Civil Aviation Bureau (CAB) of Ministry of Land, Infrastructure, Transport and Tourism (MLIT).

The association had conducted this training twice before, but did not specify the scope of the conditions under which this training could be conducted safely, thus each instructor determined and conducted the training methods at their discretion.

During the pre-flight briefing before the training, the instructor instructed the trainee to fly straight and land on the runway, as winch winding would be stopped at a low altitude during the tow.

Additionally, this was the first time that both the instructor and the trainee had conducted the training.

(5) Status of the Winch

Before conducting this training, the instructor instructed the winch operator to stop winding the winch after the glider had moved to a climb attitude and its climb speed had stabilized.

As having measured the glider's approximate speed and altitude based on the way of the glider's climbing and the winch instruments, the winch operator considered the glider's stall and the altitude required for a recovery operation in the event of the glider stalling and stopped winding the winch.

The winch operator was qualified to operate the winch as managed by the association and had practical experience at the site. However, this was the first time the winch operator had stopped winding the winch when an aircraft was flying at such a low altitude.

(6) Required Runway Length from Launch Point to the Glider Stop

*4 According to the Detailed Regulations of Evaluation for Pilot Competence Assessment, items related to operations in abnormal and emergency conditions during tows are primarily assessed by means of an oral examination, although practical examinations may also be used.

After the accident, the association calculated the required runway length from the launch point to the glider's stop position in this training, according to each condition of “headwind speed” and “reaching altitude”.

The result of the calculation revealed that the required runway length tends to be longer when the headwind is weaker and when the reaching altitude is higher. Given the conditions in which the accident occurred (headwind speed 0 m/s, reaching altitude: 90 m), the required runway length (976 m) exceeded the distance from the launch point to the runway end (valid runway length: 969 m).

3. ANALYSIS

(1) Damage to the Glider

The JTSB concludes that the glider most likely began to skid to the right after turning left and touching down, which resulted in damage to the glider due to the compression load applied to the outer skin of the left fuselage when the right side of the nose collided with trees and plants.

(2) Runway Remaining Distance

The JTSB concludes that the glider was more likely to have released the tow line approximately over the parachute's falling point because the trainee let the glider release the tow line promptly after the winch winding was stopped and there was a calm wind at the time of the accident. Therefore, the runway remaining distance at the time the glider released the tow line was probably about 450 m, which is the distance from the parachute's falling point to the runway end (see Figure 1).

According to the statement of the instructor, the glider returned to a horizontal position immediately after the winch winding was stopped and performed a forward slip with the dive brakes extended. Therefore, the glider probably began to descend promptly after the winch winding was stopped. However, even though the glider required approximately 150 m to touch down and come to a stop, it was approximately 100 m short of the runway end that the glider became able to touch down, therefore, the valid runway length was probably insufficient.

(3) Winch Operations

The JTSB concludes as follows:

According to the statement of the winch operator, before the training began, the winch operator was instructed by the instructor to stop winding the winch once the glider's climb speed had stabilized. However, as it was impossible to determine when to stop the winch winding based on the glider's climbing and other factors, the winch operator waited until the climb speed had increased sufficiently to enable the glider to continue flying because to prevent the glider from stalling. It is possible that the delayed stopping of the winch caused the glider's reaching altitude to become high contributing to the increase in required runway length.

The winch operator was impossible to grasp the glider's climb speed and the AGL altitude accurately with only the information available at the time of the accident. Therefore, although the winch operator was qualified to operate the winch as managed by the association, it is more likely that it was difficult to determine when to stop winding the winch so that the glider could land safely on the runway, and the training content was not developed sufficiently.

(4) Safety Management

The JTSB concludes that, at the time of the accident, it was probable that the training glider was supposed to land on the runway after the tow line was released. However, due to the condition

of weak headwinds and a high reaching altitude, it was more likely probably impossible for the glider to land within the runway.

The winch power off training is a training item related to emergency operations in simulated emergency conditions, which inevitably involve risk. Therefore, when conducting this training, the instructor, trainee, and winch operator should have confirmed and shared the training content and implementation conditions sufficiently.

As the association did not specify the conditions under which the glider could land safely within the runway in advance, it is probable that the training was more likely conducted under conditions that made an accident unavoidable, resulting in the glider failing to land safely within the runway.

When conducting training related to emergency operations, the association must specify the conditions under which the training can be conducted safely in advance, and inform their instructors about these conditions through regular education and training.

4. PROBABLE CAUSES

The JTSA concludes that the probable cause of the accident was that, during the winch power off training exercise, the glider most likely failed to land within the runway and touched down in the grass area ahead of the runway while turning left, which resulted in the glider colliding with trees and plants, causing damage to the outer skin of the left fuselage.

The glider probably failed to land within the runway because the training content on stopping the winch winding was not developed sufficiently, as a results, it took time to stop the winch winding. In addition, the required runway length was increased due to weak headwinds and the glider's high reaching altitude.

5. SAFETY ACTIONS

(1) Safety Actions Required

This training related to emergency operations and involved simulating situations in which the winch loses its towing force. Therefore, the training provider must specify the scope of the conditions under which aircraft can safely land on the runway at the Glider Site. In addition to this, the training provider should provide regular education and training to their instructors, enabling them to deliver training within the scope of the specified conditions.

Furthermore, it is impossible for winch operators to accurately grasp the glider's climb speed and AGL altitude. Therefore, when simulating emergency situations at low altitudes such as during the winch power off training and other emergency trainings, the training provider must specify the training content and implementation conditions in advance, including the timing of releasing from the winch as determined by that instructor pilots (or trainees).

(2) Safety Actions Taken after the Accident

- The association has decided to define the scope of the conditions under which aircraft can safely run straight and land within the current effective valid runway length, and to inform their instructors about these conditions through regular training.
- To standardize the content of the instructions, the association's instructors confirmed the training content with one another.
- The association stipulated that during training exercises simulating emergency situations at low altitudes, the instructors should determine the timing of releasing from the winch.