Aircraft Accident Investigation Report 1/2026

Final Report

of the accident to

Airbus (AS350B3e) Helicopter, registration 9N-AMS,

operated by Altitude Air Pvt. Ltd.

On 29th October 2025

at Lobuche, Solukhumbu, Nepal

Aviation Safety and Accident Investigation Section
Civil Aviation Division
Ministry of Culture, Tourism and Civil Aviation

This investigation has been carried out in accordance with The Civil Aviation (Investigation of Accident) Regulation 2014, Annex 13 to the Convention on International Civil Aviation and The Procedure Manual of Aircraft Accident/Incident Investigation, 2022.

The sole objective of the investigation of an accident or incident under these Regulations shall be the prevention of accidents and incidents. It shall not be the purpose of such an investigation to apportion blame or liability.

Published on 23 March 2026

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SYNOPSIS

Operator	Altitude Air Pvt. Ltd.
Aircraft Type and Model	AS350B3e
Registration	9N-AMS
Type of Flight	Rescue Charter
Location of Accident	Lobuche Helipad, Solukhumbu
Persons on Board	Flight Crew: 1; Passenger: 0
Date of Accident	29 October 2025
All time in this report is in UTC Local time: UTC+5:45	

On 29 October 2025, a helicopter operating a rescue charter from Lukla to Lobuche experienced a loss of control during landing on a snow-covered, unmarked helipad. The Pilot-In-Command (PIC) performed a standard no-hover landing where it encountered a skid imbalance and the rotor wash lifted loose snow, creating whiteout conditions that eliminated visual references. The main rotor struck the ground, causing the helicopter to topple and sustain substantial structural damage. The PIC exited uninjured, and no other casualties occurred. Investigation determined that the aircraft was airworthy, and the accident was operational in nature, primarily caused by loss of control due to whiteout conditions and skid misalignment, compounded by absence of ground support and limited operational oversight.

The investigation determines that the most probable cause of the accident was an overcorrection by the PIC while attempting to counter the misalignment of the skids during a no-hover landing on a snow-covered helipad, which lacked visual markers or cues.

A total of nine safety recommendations are issued to the Civil Aviation Authority of Nepal and Nepalese helicopter operators.

FACTUAL INFORMATION

1.1 History of Flight

The helicopter was scheduled to operate a series of flights from Lukla before returning to Kathmandu for a night stop. Prior to the accident flight, the helicopter completed five uneventful passenger and cargo flights within the Solukhumbu district. For the next flight, the PIC was assigned a rescue charter to evacuate two individuals from Lobuche. The helicopter departed Lukla at 0157 hrs for Lobuche after obtaining all required operational clearances. The PIC reported normal visual conditions and no abnormalities en-route to Lobuche.

The PIC noticed the intended landing area was covered with loose snow. The helipad, slightly elevated by rocks, was covered with fresh snow, creating the illusion of a smooth, seamless surface. Boundary rocks at the edge of the helipad were visible, as accounted by the PIC. The PIC recalled that no ground personnel or marshaller were present at the designated landing site.

During touchdown at Lobuche, the PIC experienced slight instability on the skids, likely caused by misalignment on an uneven portion of the helipad. In an attempt to stabilize the helicopter, the PIC moved the aircraft slightly forward, which caused rotor wash to lift loose surface snow, producing a whiteout. The PIC subsequently lost all external visual references, and the main rotor struck the ground. This resulted in the tail boom disintegrating and the main body of the helicopter toppling. The aircraft came to rest approximately 11 meters from the intended landing area at 0207hrs.

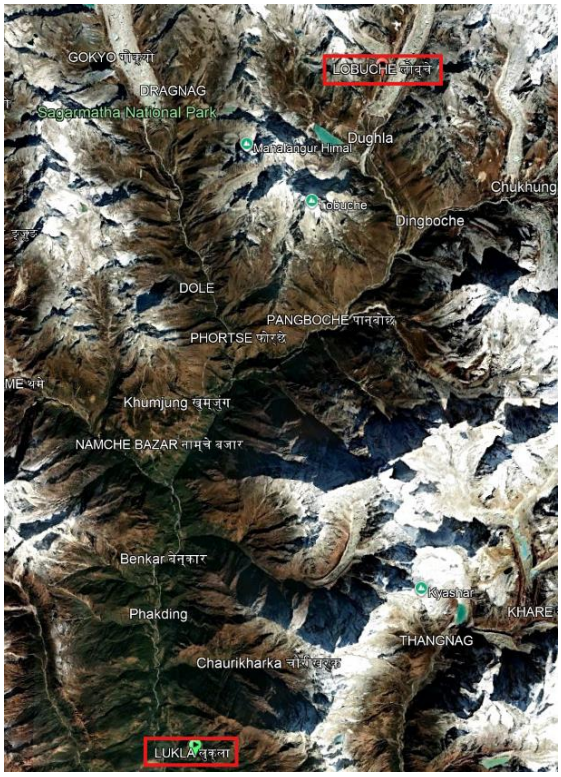

Figure 1 Location map of the takeoff and destination helipads

Following the accident, the PIC contacted Lukla Tower and the company's designated CAAN Principal Operations Inspector (POI) using a local telephone to report the accident. Another company's helicopter that was positioned in Lukla was dispatched to conduct the rescue, and the PIC was transported to Lukla and eventually to HAMS Hospital, Kathmandu, for medical assessment.

1.2 Injuries to persons

The PIC was uninjured and there were no other casualties.

1.3 Damage to Aircraft

The helicopter sustained substantial structural damage.

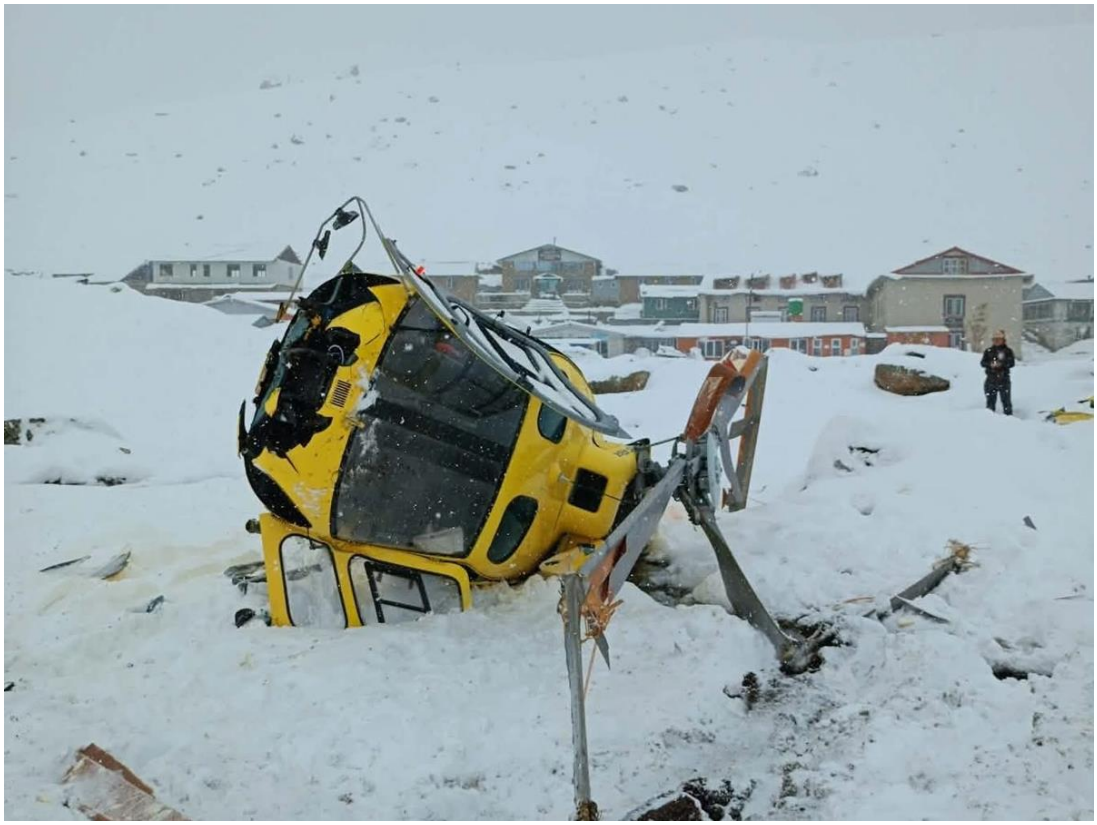

Figure 2 Helicopter wreckage

1.4 Other damages

None

1.5 Personnel Information

The details of PIC are depicted below.

Table 2: PIC Information

License Issuing Authority	CAAN
License Validity	30 June 2028
Aircraft Ratings	AS350 Series
Instructor Ratings	AS350B3e
Total hours flown	8095 hrs
Total hours on type	6070 hrs
Flight hours in last 12 months	350 hrs
Flight hours in last 3 months	140:33 hrs
Flight hours in last 30 days	62 hrs
Flight hours in last 7 days	13:45 hrs
Previous rest period	27 October 2025/28 October 2025 KTM-LUA (N/S)
Medical Certificate Type	Class I
Medical Validity	31 December 2025
Aviation Language Proficiency	Level 5
Language Proficiency validity	7 April 2031
Limitation/Restriction	None
Previous Accident/Incident	None
Enforcement	None
Emergency Evacuation Training	9 January 2025
Simulator Training	8 July 2025
Dangerous Goods Regulation	22 January 2025
Route Check	4 January 2025
PPC with instrument, IP/DCP	4 January 2025
Ground Refresher	5 January 2025 and 10 January 2025
Crew Resource Management	30 July 2025

1.6 Aircraft Information

The details of the aircraft are depicted below.

Table 3: Helicopter Information

Operator	Altitude Air Pvt. Ltd.
Owner	Altitude Air Pvt. Ltd.
Model/Type	AS350B3e
Type of flight	Rescue Charter
A/C MSN	8413
Year of manufacture	June 2017
Registration	9N-AMS
Total Time since New	6252:00 hrs
Validity of Certificate of Airworthiness	19 August 2027
Validity of Radio Mobile License	19 August 2027

Validity of Certificate of Release to Service	6 October 2026/ 6337:54 AFHrs
Engine	Turboshaft Engine
Manufacturer	Safran Helicopter Engine, France
Model/Type	Arriell 2D
Serial Number	50593
Total Time Since New	1548:21 hrs
Total Cycle Since New	N1: 2487 N2:1127
Last Overhaul date	N/A

1.7 Aircraft Maintenance History

The aircraft was maintained as per the approved maintenance requirements. All scheduled inspections and maintenance tasks were found to be carried out within the specified time limits. The last Certificate of Release to Service (CRS) was issued on 6 October 2025.

1.8 Meteorological Information

There is no MET information station at Lobuche. As accounted by the PIC, the meteorological conditions at the accident site at the time of the accident were as follows:

Table 4: Weather information of the accident site

Meteorological Parameters	Condition
Wind	Light, variable (as commonly reported in valley area)
Visibility	Reduced, deteriorating
Precipitation	Fresh snow on the ground
Clouds	Not significant
Surface Conditions	Covered with fresh snow

1.9 Navigation Aid

Navigation based on visual reference.

1.10 Communication Aid

No VHF communication coverage with Lukla ATS unit (nearest aerodrome).

1.11 Helipad Information

The elevation of Lobuche is approximately 4940m.

As per Civil Aviation Authority of Nepal's (CAAN) published AIP, 8th EDITION Ref: AD 3.1-1 dated 01 JULY 2022 CAAN does not operate any heliports. CAAN therefore, does not maintain the landing areas or provide security. Operators are therefore, required to obtain necessary information before conducting flight on locations like Lobuche Helipad.

Unless permission has been granted otherwise by the CAAN, flight operations to these locations may only be conducted in accordance with Visual Flight Rules (VFR).

1.12 Flight recorders

The helicopter was equipped with Appareo Vision 1000 lightweight flight data and cockpit video recording device. There is no regulatory requirement for installation of FDR and CVR.

1.13 Wreckage and Impact Information

Due to deteriorating weather conditions following the accident, the site could not be accessed immediately. A technical team was dispatched to the accident location on 4 November 2025. The team reported that the high-altitude location, approximately 4,940 meters above mean sea level, combined with rapidly changing weather conditions, limited their ability to collect evidence. As a result, only partial photographic documentation and perishable evidence could be retrieved, while some information could not be identified or confirmed.

Main rotor blades, tail rotor blades were damaged due to impact. The tail boom was detached and aircrafts rest position was approximately 11 meters from the touchdown point. There was no post-crash fire.

The Appareo Vision 1000 SD card and the Vehicle and Engine Multifunction Display were successfully recovered from the accident site for further analysis.

1.14 Medical and pathological information

No evidence of medical or pathological impairments was identified with the PIC.

1.15 Survival Aspect

Following the impact, the PIC applied standard emergency procedures effectively. The collective was lowered to prevent further lift or rollover, the fuel shut-off lever was engaged, and the rotor brake was applied prior to exiting the helicopter. These actions prevented secondary hazards, including post-impact fire, and demonstrated that the pilot remained alert and capable throughout the event. The PIC exited the helicopter without sustaining major injuries.

ANALYSIS

Following the analysis of data provided by the technical team and immediate interviews with the PIC, the Civil Aviation Division of the Ministry determined the accident to be operational in nature. The investigation scope was assigned to the designated investigation team, in accordance with the matrix outlined in Section 4.1.6 of the *Procedure Manual of Aircraft Accident/Incident Investigation, 2022*.

Technical malfunction was ruled out based on on-site inspections, document reviews, interviews with relevant personnel, and analysis of flight parameters recorded by the Appareo Vision 1000. Consequently, Vehicle and Engine Multifunction Display (VEMD) analysis was deemed unnecessary. The helicopter had been maintained in accordance with the approved maintenance schedule, and no technical issues were reported.

Given these findings, the investigation team prioritized the examination of operational aspects, including flight decision-making and potential shortcomings in regulatory oversight. Primary sources of information included the Appareo Vision 1000 flight data, V2 tracker data, pilot interviews, and the operator's documentation.

2.1 Sequence of Events and Accident Dynamics

The accident occurred during the helicopter's sixth mission in the area, intended to rescue two individuals from Lobuche. The PIC was operating in a high-altitude environment with deteriorating visual conditions and no ground support at the landing site. During the approach, the PIC scanned the vicinity, noting that fresh snow increased the risk of whiteout. The intended landing was a standard no-hover maneuver. However, the approach was continued without adequate visual references or ground support.

The operation required heightened caution due to the increased risk of whiteout. Once whiteout conditions developed, the PIC relied solely on physical sensations, as helicopter control became extremely difficult without external visual references. This loss of visual reference coincided with skid instability, resulting in an unexpected rollover tendency. As the helicopter rolled, the main rotor blades struck the ground.

The rotor-ground impact caused the helicopter to topple. Examination confirms that the rotor strike was not a result of mechanical failure but was due to the helicopter's unstable attitude combined with the loss of external visual reference.

2.2 Technical Aspect

The aircraft was airworthy and maintained in accordance with regulatory and operator requirements. Examination of the wreckage and recorded flight data from the Appareo Vision 1000 confirmed the absence of abnormal aircraft performance prior to impact. There was no evidence of pre-existing mechanical defects, nor any malfunction of the engine, flight controls, or systems. Recorded flight parameters indicate normal aircraft performance up to ground contact.

2.3 Meteorological Aspect

During the sequence of the flight, weather conditions contributed significantly to the accident. Meteorological conditions were conducive to rotor-wash-induced whiteout due to prevailing loose surface snow, light winds, and flat lighting. Such prevailing meteorological conditions provided minimal visual contrast, reducing depth and attitude perception.

The absence of significant wind prevented the dispersal of snow lifted by rotor wash which exacerbated whiteout conditions and led to a loss of control during touchdown.

2.4 Organizational Aspect

Operational control at the operator's base in Lukla did not have key post holders present despite the peak activity season, resulting in inadequate oversight and limited support to the PIC. Pre-flight and pre-landing risk assessment processes were unstructured, and timely hazard information, including recent snowfall and reduced visibility forecasts, was not provided to the PIC.

Ground personnel play a critical role in indicating safe landing zones, identifying snow depth or uneven terrain, and guiding skid alignment during approach. There was no ground support at Lobuche. The absence of such support increased operational risk.

Procedural guidance and training related to whiteout, brownout, and no-hover landings were found to be inadequate and limited. These factors could combinedly contribute to the likelihood of operational hazards during high-risk conditions.

2.5 Human Factors Analysis

The PIC had no prior confirmation of the condition of the helipad, as no ground support was available at Lobuche. Due to familiarity with the helipad and the nature of the charter flight, the PIC elected to continue the approach and attempt the landing. Although the PIC noted the lack of visual cues and chose a no-hover landing, the success of such landings depends heavily on stable surface contact, continuous visual references, and accurate assessment of the helicopter's position in space.

Upon initial touchdown, the PIC perceived instability on the skids, likely caused by misalignment due to snow concealing ground irregularities. The absence of visible helipad references during snow reduced depth perception and obscured surface contours. As the PIC attempted corrective actions to stabilize the helicopter, the developing whiteout eliminated all external visual cues. Corrective input, which would have been appropriate under normal circumstances, may have inadvertently exacerbated the imbalance once visual references were lost.

Potential human factors influencing the event include operational pressure related to the urgency of the rescue mission, high workload associated with low-visibility landing, visual illusions caused by snow-covered terrain, and possible complacency due to the PIC's familiarity with the terrain and helipad.

2.6 Hazards and risk assessment

The investigation identified the following hazards and the risk related to those hazards.

Table 5: Contributing Factors Analysis

Hazard / Observation	Related Issue / Risk
Lack of visual ground references or markers	Increased risk of misaligned or unsafe landings
Slightly elevated helipad causing uneven landing terrain	Potential for helicopter instability on landing
Absence of ground support staff at Lobuche	Reduced operational safety and landing assistance
Deteriorating weather conditions conducive to possible white-out	Higher risk during flight and landing operations
Ineffective operational control due to absence of key post-holders / airline personnel at Lukla	Compromised decision-making and oversight
Attempt to land without clear ground markers or guidance	Unsafe landing approach; increased accident potential

CONCLUSION

3.1 Findings

1. The flight was a rescue charter mission from Lukla to Lobuche.
2. The helicopter was airworthy and maintained in accordance with regulatory and operator requirements.
3. The PIC was licensed, medically fit, experienced on type, and familiar with the operating area.
4. No structured pre-flight or pre-landing risk assessment was documented.
5. Prior to departure from Lukla, the PIC was not adequately briefed on weather and helipad conditions.
6. Operational control did not provide real-time support or hazard advisories during the flight.
7. No ground personnel were present at the destination landing site to provide marshalling or surface condition reports.
8. Key operational post holders like dispatcher/Operations Manager, were not present at Lukla despite the high-activity period.
9. Weather-related warnings and hazard circulars regarding recent snowfall and poor visibility were not issued to the flight crew.
10. The destination helipad at Lobuche was fully covered with fresh snow.
11. The terrain surface provided minimal visual contrast, reducing depth and attitude perception.
12. Meteorological conditions were conducive to rotor-wash-induced whiteout due to prevailing loose surface snow, light winds, and flat lighting.
13. The PIC conducted a standard no-hover landing.
14. Upon touchdown, the helicopter experienced instability on the skids, likely due to uneven, snow-covered ground.
15. As the PIC attempted to stabilize the helicopter, whiteout conditions developed, resulting in the loss of external visual references.
16. Without visual cues, the helicopter entered a destabilized attitude, causing the main rotor blades to strike the ground.
17. The helicopter subsequently toppled and sustained substantial structural damage.
18. The PIC performed emergency shutdown procedures and exited the helicopter without major injuries.
19. There was no post-crash fire.
20. Examination of wreckage and recorded flight data from the Appareo Vision 1000 confirms the absence of abnormal aircraft performance prior to impact.
21. No evidence of medical or pathological impairments was identified with the PIC.

3.2 Probable Cause

The most probable cause of the accident was an overcorrection input while attempting to counter the misalignment of the skids during a no-hover landing on a snow-covered helipad, which lacked visual markers or cues.

3.3 Contributing Factors

1. Lack of visual ground references/markers or guidance.
2. Uneven landing terrain caused by slightly elevated stone paved helipad.
3. Absence of ground support staff at Lobuche.
4. Rotor-wash-induced whiteout due to prevailing loose surface snow, light winds, and flat lighting.
5. Ineffective operational control at sub-base (Lukla) due to absence of key post-holders/airline personnel.
6. Ineffective risk analysis and decision-making.

SAFETY RECOMMENDATIONS

1. All helicopter operators should ensure that a licensed dispatcher is physically present at sub-bases to provide effective operational control and safety oversight during peak operational periods and for special operations.
2. Flight crews should receive comprehensive briefings covering landing site coordinates and elevation, surface conditions, prevailing and forecast weather conditions, availability of ground support at landing sites, and applicable aircraft performance criteria.
3. All helicopter operators should prepare documented pre-flight risk assessments for operations at remote helipads, rescue or time-critical missions, and flights where visual references are limited. These assessments should include clearly defined criteria for aborted landings when visual references are degraded.
4. All operators should ensure that the size and surface conditions of the touchdown and lift-off area are adequately allocated and maintained at helipads used for routine passenger/cargo operations.
5. All helicopter operators should establish and implement coordination procedures with local personnel to ensure the availability of a marshaller or landing assistant as far as possible. Such hired assistance should be engaged to prepare landing zones in advance, ensure that helipads are adequately cleared, and provide clear visual markings prior to landing operations.
6. All helicopter operators should conduct an internal Safety Management System review to assess compliance with standard operating procedures, the effectiveness of operational control measures, and the adequacy of safety circulars and hazard communications.
7. CAAN should promptly conduct an assessment of all designated helipads and heliports to evaluate risks arising from uneven or elevated landing surfaces, as well as the adequacy of visual references. Any identified hazards should be mitigated without delay.
8. CAAN should ensure the installation of clearly visible and standardized markers at helipads such as Lobuche and other high-altitude locations with high helicopter movement.
9. CAAN should develop and publish guidance material addressing hazards and standardized operating practices applicable to operations in snowy and high-altitude terrain.