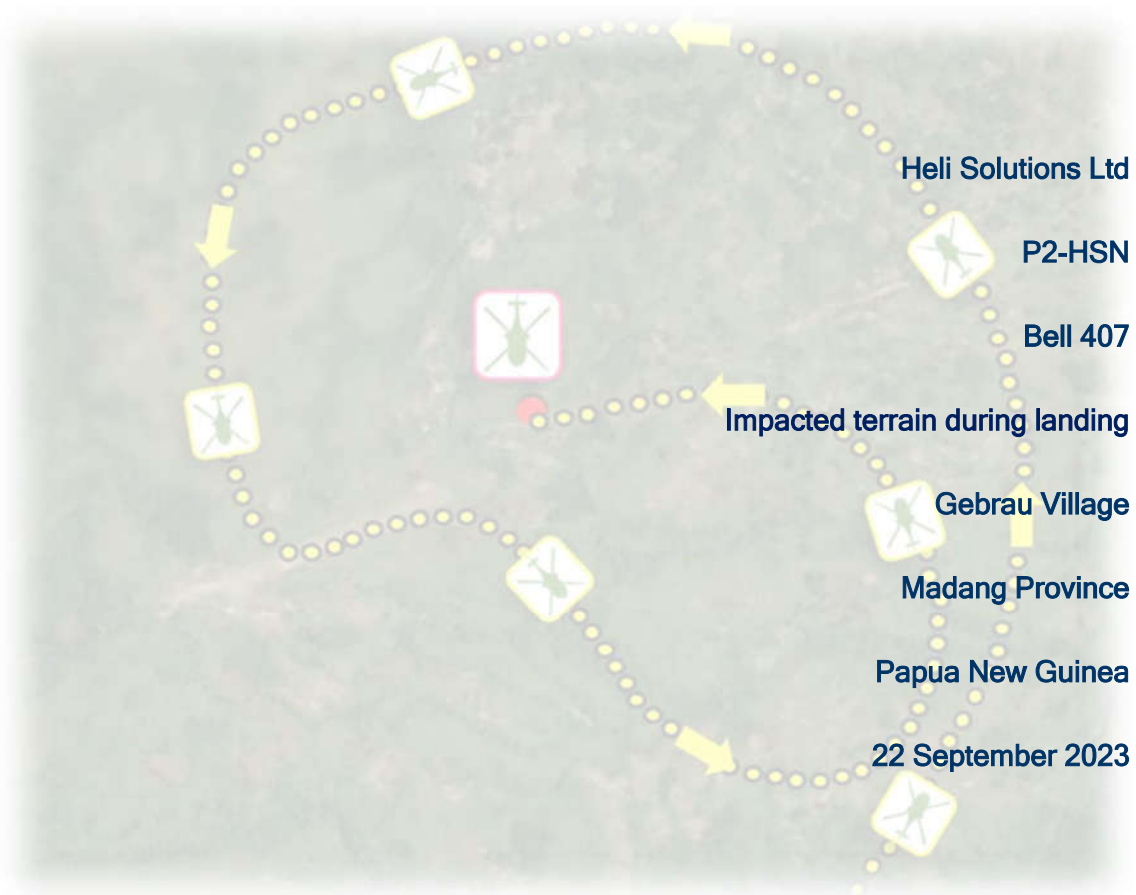




PRELIMINARY REPORT

AIC 23-1006



About the AIC

The Accident Investigation Commission (AIC) is an independent statutory agency within Papua New Guinea (PNG). The AIC is governed by a Commission and is entirely separate from the judiciary, transport regulators, policy makers and service providers. The AIC's function is to improve safety and public confidence in the aviation mode of transport through excellence in: independent investigation of aviation accidents and other safety occurrences within the aviation system; safety data recording and analysis; and fostering safety awareness, knowledge and action.

The AIC is responsible for investigating accidents and other transport safety matters involving civil aviation in PNG, as well as participating in overseas investigations involving PNG registered aircraft. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The AIC performs its functions in accordance with the provisions of the *PNG Civil Aviation Act 2000 (as amended)*, and the *Commissions of Inquiry Act 1951* and *Annex 13* to the *Convention on International Civil Aviation*.

The object of a safety investigation is to identify and reduce safety-related risk. AIC investigations determine and communicate the safety factors related to the transport safety matter being investigated.

On 22 September 2023 at 16:50 local time (06:50 UTC), the AIC was notified by Niusky Pacific via a phone call of an accident involving a Bell 407 helicopter, registered P2-HSN owned and operated by Heli Solutions Limited at Gebrau Village, Madang Province. The AIC immediately commenced an investigation, and a team was deployed to the accident site on 23 September 2023.

This Preliminary Aircraft Accident Investigation Report was produced by the AIC, and contains facts known to the AIC before the official release date. It is developed by the Commission in accordance with Para 7.1 of *ICAO Annex 13*. The report is also published on the AIC website: www.aic.gov.pg.

The report is based on the initial investigation activities carried out by the AIC in accordance with *Papua New Guinea Civil Aviation Act 2000 (as amended)*, *Chapter 31* of the *Commissions of Inquiry Act, Annex 13* to the *Convention on International Civil Aviation*, and the *PNG AIC Investigation Policy and Procedures Manual*. It contains factual information. Analysis of that information, findings and contributing (causal) factors, other factors, safety actions, and safety recommendations are reserved for the *Final Report*.

The sole objective of the investigation and the Preliminary Report is the AIC's obligation to the *Convention on International Civil Aviation* and in accordance with *ICAO Annex 13*, and thereby promote aviation safety. (Reference: *ICAO Annex 13, Chapter 7*). Readers are advised that in accordance with *Section 219* of the *Civil Aviation Act 2000 (as amended)* and *Annex 13*, it is not the purpose of the Commission's aircraft accident investigation to apportion blame or liability. Fact based statements in the report should not be interpreted as apportioning blame. Consequently, AIC reports are confined to matters of safety significance and may be misleading if used for any other purpose.



Capt. Aria Bouraga, MBE

Acting Chief Commissioner

20 October 2023

Helicopter Controlled Flight into Terrain

Occurrence Details

On 22 September 2023, at 15:15 local time (05:15 UTC¹), a Bell 407 helicopter, registered P2-HSN, owned and operated by Heli Solutions Limited, was conducting a VFR² Chartered passenger flight from Ward 2 to Ward 1 of Gebrau Village, Madang Province, when during its approach to land on a field at Gebrau, the helicopter impacted terrain.



Figure 1: Overview of the P2-HSN accident site

There were six persons on board the aircraft: the pilot, a loadmaster and four adult passengers.

The helicopter was chartered to conduct passenger flights to Gebrau villages, east of the Simbai area.

The pilot stated during an interview with the AIC that it was his first time operating into the area and to the villages. He, therefore, asked one of the passengers, who was from the Gebrau area and was seated on the left seat in the cockpit for the flight to help identify the different destination villages enroute. The pilot also stated that because the helicopter's GPS did not have any coordinates for the planned destination villages, he entered nearby known coordinates to get to the area and depend on the passenger to identify and point out the village and common helicopter landing areas.

The pilot conducted preflight actions, selected Simbai on the GPS, and departed Mt. Hagen at about 13:40 with three passengers and the loadmaster. As they arrived in the Simbai area, the passenger pointed out directions toward the northwest to reach Gebrau village, Ward 2, their first destination. The pilot subsequently tracked northwest, and the passenger identified and pointed out a soccer field where the helicopter could be landed. The pilot approached and landed at the soccer field where he waited as the passengers went into the village for their business.

When the passengers returned, there was an additional person from Ward 2 to board the helicopter. The next destination was Gebrau Village, Ward 1, approximately 15 NM³ northwest of Ward 2 and about 6 NM east of Sengapi Airstrip (see Figure 2).

The pilot departed Ward 2 at 14:57, with the GPS set to Sengapi Airstrip and climbed to 7,500 ft AMSL⁴.

About 6 NM from Sengapi, the passenger pointed out the Gebrau, Ward 1 airstrip, right of their position. The pilot turned and began tracking toward the airstrip.

¹ The 24-hour clock, in Coordinated Universal Time (UTC), is used in this report to describe the local time as specific events occurred. Local time in the area of the accident, Papua New Guinea Time (Pacific/Port Moresby) is UTC + 10 hours.

² Visual Flight Rules: Those rules as prescribed by national authority for visual flight, with corresponding relaxed requirements for flight instruments (Source: The Cambridge Aerospace Dictionary)

³ Nautical Miles

⁴ Above Mean Sea Level

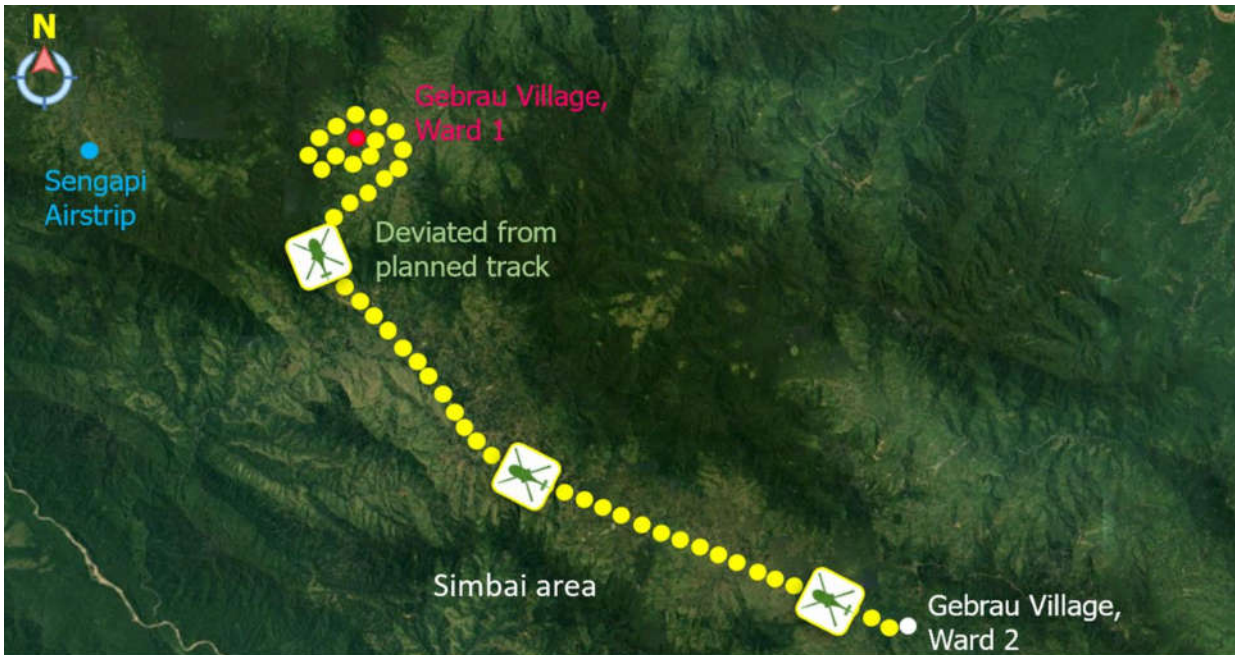


Figure 2: P2-HSN track to the destination, Ward 1 of Gebrau Village

The recorded data showed that at about 15:10, the helicopter arrived in the Gebrau Ward 1 Airstrip circuit area. The pilot stated that as they flew over the airstrip, the passenger showed him a soccer field where villagers were waiting.

The pilot conducted a long shallow approach around the field and eventually positioned over the field. The pilot positioned the helicopter in a hover at about 3 to 5 ft above the ground, facing South toward the soccer field stage.

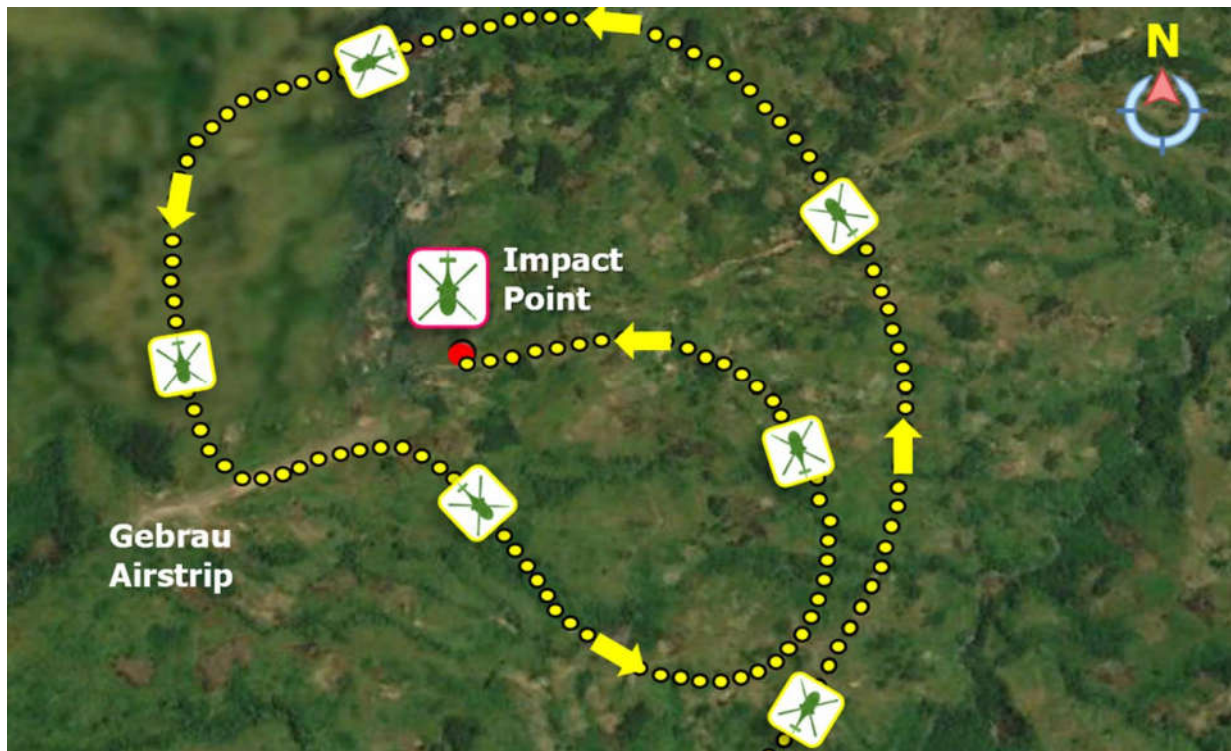


Figure 3: P2-HSN at Gebrau Ward 1 Airstrip circuit area.

The pilot stated that as he entered the hover, there was dust from the ground blown into the air by the helicopter's rotor downwash. As he maintained a hover awaiting the dust to clear, the helicopter drifted towards the edge of the field where it collided with a tree.

The pilot recalled that the dust entering the cabin was dense and he was not able to maintain visual reference with the outside. He stated that he did not know that the helicopter had drifted backwards off the field and into the tree (see Figure 4).

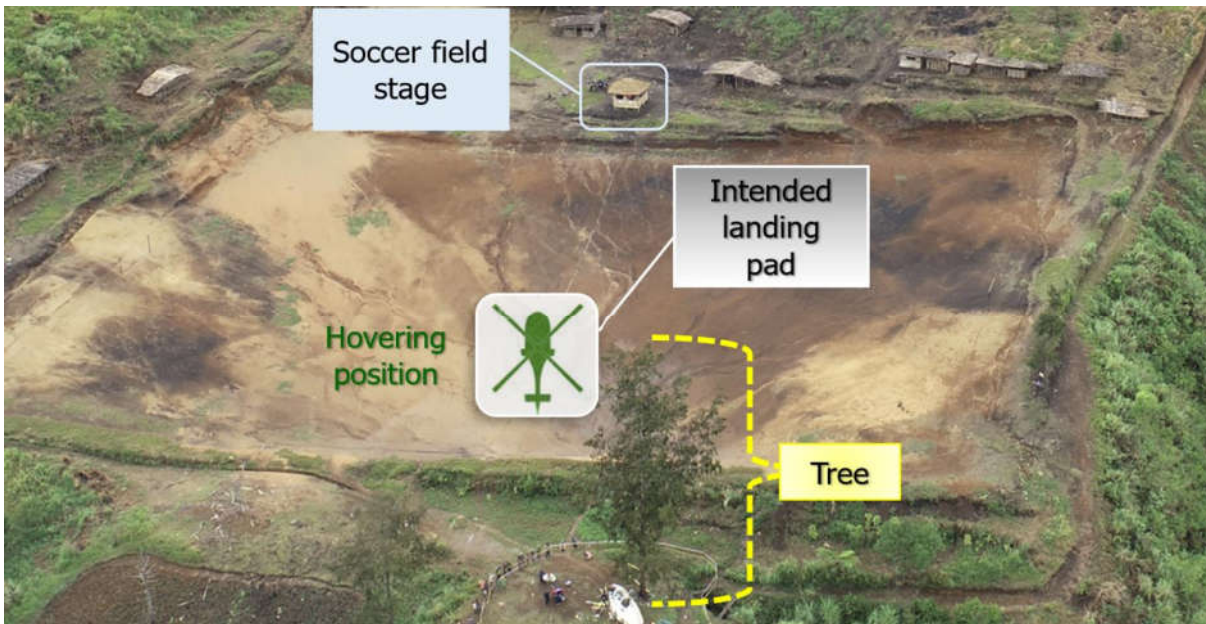


Figure 4: Intended landing pad and main wreckage.

After the helicopter came to rest on the ground, the pilot tried to shut down the engine, however, it would not shut down. The engine continued running with all rotor blades detached.

It was reported that the loadmaster along with three of the passengers were the first to exit the helicopter. They subsequently assisted the other passengers out of the helicopter. All occupants moved away from the helicopter. The engine ran for another 15-20 minutes before it shut down on its own.

The pilot sustained minor injuries. The passengers and load master were reported to have sustained severe injuries. The AIC later learned that several villagers, watching the helicopter from the ground, also sustained injuries from detached helicopter parts and debris hurled into the air during the accident.

It was reported that after the accident, all injured persons were assisted to the village and nursed by the villagers. One of the injured local that was standing on the ground, succumbed to his injuries later that evening.

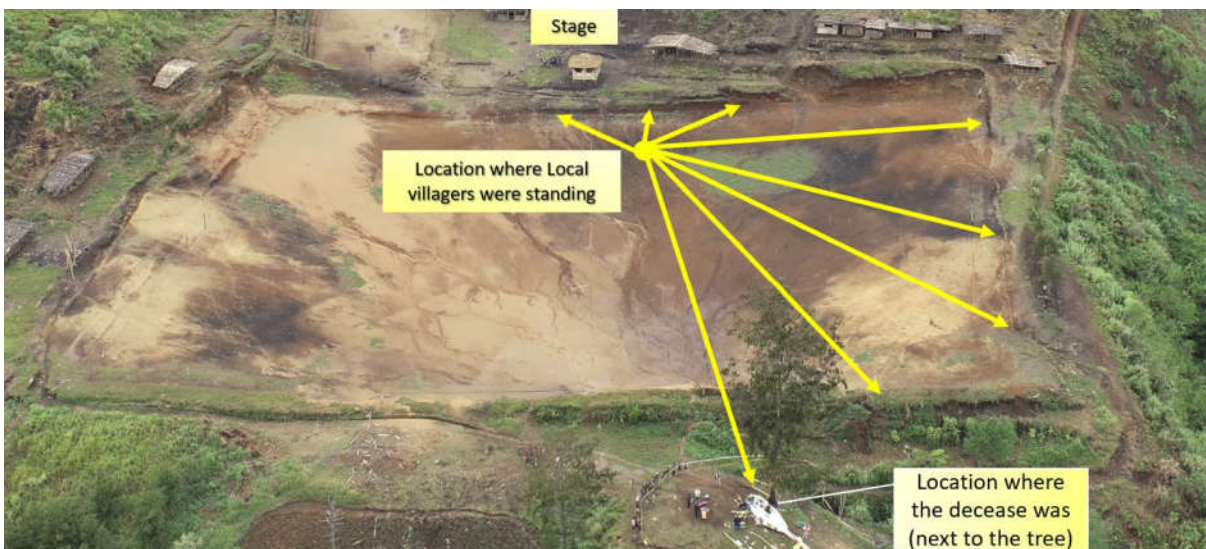


Figure 5: Locations where the local villages were standing

The Operator attempted a rescue mission in coordination with the Air Traffic Services that afternoon by deploying a helicopter to the area, however, the helicopter was unable to access the accident site and returned to base due to deteriorating weather.

The rescue exercise recommenced early the next morning initially transporting the injured survivors to the Kudjip Hospital in Jiwaka Province. The rescue operations continued on to 24 September when the last of the injured persons were transported to the hospital.

Wreckage Distribution and Damages

The wreckage distribution of P2-HSN.

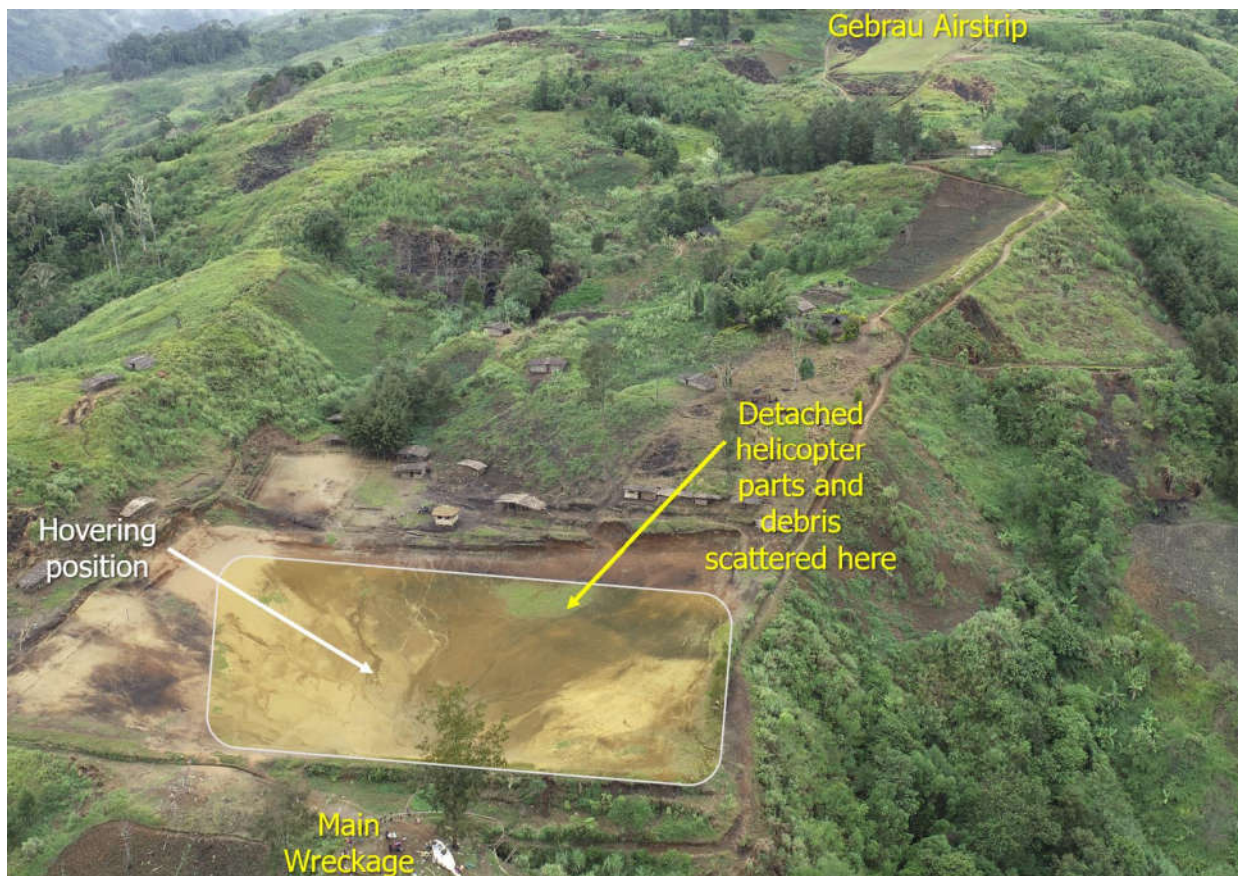


Figure 6: P2-HSN wreckage distribution

The main rotor blades, the skids and the tail rotor assembly were detached and separated from the main. The helicopter also sustained significant damages to its cockpit and the cabin.



Figure 7: Overview of the damages sustained by P2-HSN

AIC comment

The investigation is continuing and will include but not be limited to flight operations, training, systems, performance, terrain and area operations, weather and human factors, SMS and organisational aspects, to the appropriate extent.

The investigation analysis and findings will be included in the Final Report.

Safety Actions

At the time of the issue of this Preliminary report, no safety actions had been taken.

Recommendations

At the time of the issue of this Preliminary Report, no Recommendation had been made by the PNG AIC.

General Details

Date and time	22 September 2023, 15:15 (05:15 UTC)		
Occurrence category	Accident		
Primary occurrence type	Controlled Flight into Terrain during landing – CFIT		
Location	Ward 1 of Gebrau Village, Madang Province		
	Latitude: S 5° 7'39.20"	Longitude: E 1144°25'35.70"	

Type of Operation, Injury, and damage details

Type of Operation	VFR Charter			
Persons on board	6	1 pilot	1 loadmaster	4 passengers
Injuries POB		Minor	Severe	Severe
Injuries local Villagers	Several injuries and 1 fatality			
Damage	The helicopter was destroyed			

Pilot Details

Gender	Male
Age	55
Nationality	Papua New Guinea
Licence type	CPL (H)
Total hours	11,600.0
Total hours in Command	9,093.2
Total hours on type	800.0

Aircraft Details

Airframe				
Aircraft manufacturer	Bell Helicopter			
Aircraft Model	Bell 407			
Registration	P2-HSN			
Serial number	53822			
Year of manufacture	2008			
TTSN	11,065.3			
Landing	6,283.0			
Engine				
Engine manufacturer	Roll Royce			
Engine Type	250-C47B			
Serial number	CAE-848098			
TTSN	2,597.2			
TSO	0.0			
Main Rotor Blades (MRB)				
Manufacturer	Bell Helicopters			
Part Number	407-015-001-137			
Color Coding	Blue	Red	Green	Orange
Serial Number	A-3407	A-3628	A-4067	A-4076