



PRELIMINARY REPORT

AIC 20-1006



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*.

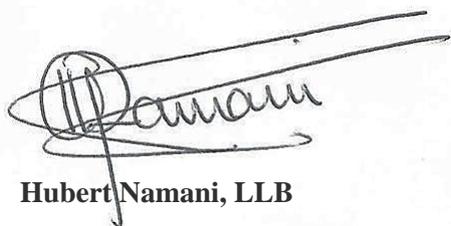
The object of a safety investigation is to identify and reduce safety-related risk. AIC investigations determine and communicate the safety factors related to the transport safety matter being investigated.

On 1 December 2020 at 14:37 local time (04:37 UTC), the AIC was notified by the Civil Aviation Safety Authority of Papua New Guinea (CASA PNG) via email, of an accident involving a Viking DHC-6-300 aircraft, registered P2-ASM and operated by Air Sanga Limited at Wobagen Airstrip, Sandaun Province. The AIC immediately commenced an investigation.

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.

A handwritten signature in black ink, appearing to read 'Hubert Namani', is written over a horizontal line. The signature is stylized and somewhat cursive.

Hubert Namani, LLB

Chief Commissioner

30 December 2020

Runway excursion during takeoff roll

Occurrence Details

On 1 December 2020, at 09:13 local (23:13 UTC¹), a Viking DHC-6-300 aircraft, registered P2-ASM, operated by Air Sanga Limited, experienced an airstrip excursion accident during the take-off roll at Wobagen Airstrip, Sandaun Province.



Figure 1: Overview of the accident site

That morning, the crew had flown to Wobagen on a passenger and cargo charter flight, landing at 08:47. Once on ground, the crew took passengers on board the aircraft and loaded cargo, to conduct a VFR² charter flight to Bak Airstrip, located 3.8 nm north-east of Wobagen, also in Sandaun Province. There were 9 persons on board the aircraft; 2 pilots and 7 passengers. The pilot in command (PIC) was pilot flying and the co-pilot (CP) was pilot monitoring.

Data obtained from the aircraft recording systems showed that the crew completed the ‘*Before Take-off*’ checklist at the parking area and then began taxiing west towards the threshold of strip 12.

At about 09:13, upon reaching the threshold of strip 12, the PIC conducted a 180° turn and applied maximum power, transitioning from taxi into take-off roll.

During an interview with the AIC, the crew stated that after applying maximum power, the aircraft had a tendency to veer to the right. The PIC tried to maintain the aircraft on centreline by using asymmetric thrust, however, as the aircraft accelerated down the strip, the tendency to veer right increased. About 154m down the strip, the aircraft began veering towards the right and tracked away from the centreline (see Figure 2). As the aircraft passed the strip boundary (cone markers), with a recorded groundspeed of 40kt the crew aborted the take-off; power to idle and applied full brakes. The aircraft continued forward and veering right. Four seconds later, the aircraft impacted a drain.

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 serious incident, 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*)

The nosewheel subsequently separated from the fork causing the nose to drop and the nose gear subsequently collapsed. The momentum of the aircraft caused it to continue another 8m with the nose dragging across the ground before it impacted the right edge drain (see Figure 2).

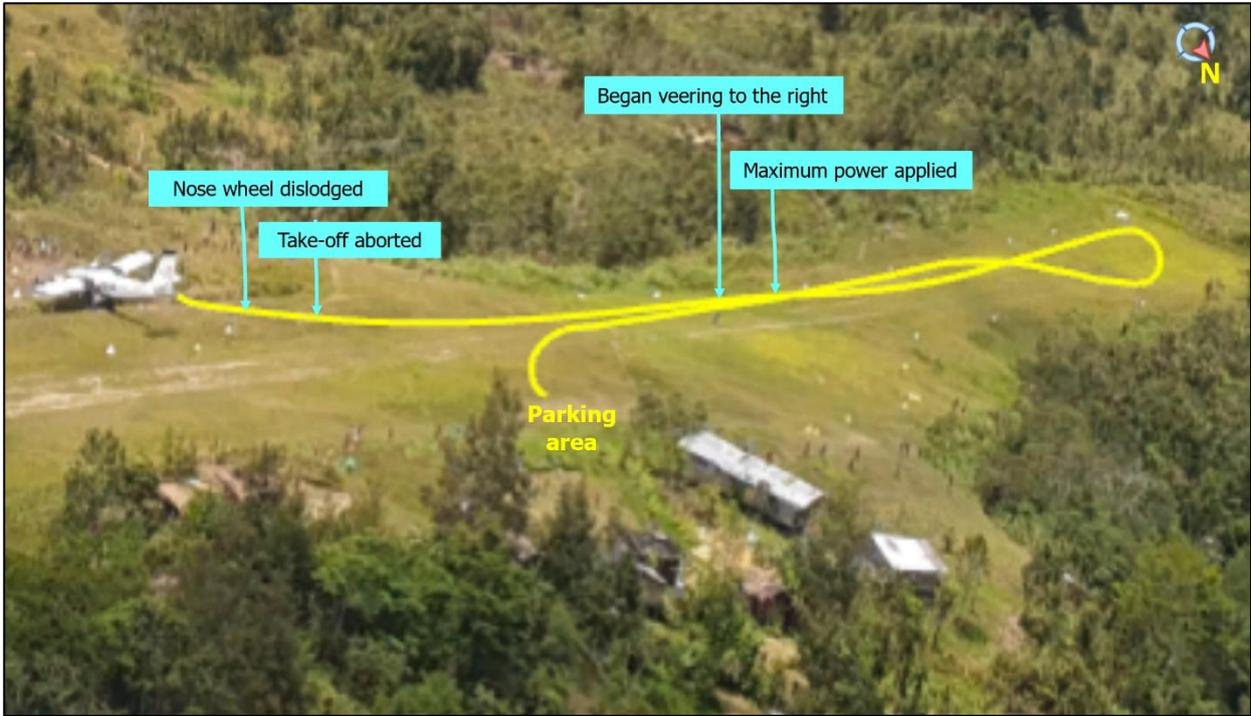


Figure 2: Aircraft recorded ground track overlaid on an aerial view image with the significant events

The crew stated during interview that after the aircraft came to rest, the flight crew carried out the procedure for shutting the engines down. In the meantime, the passengers opened the door of the cabin and exited the aircraft. Both pilots exited through their respective doors. One passenger reported to have suffered minor injuries.

Damage

The aircraft sustained significant damage to the cockpit forward bulkhead, nose landing gear (NLG) and the left propeller and wing. The nose wheel assembly was also dislodged from the fork and sustained damage.



Figure 3: Damage sustained at the Nose section



Figure 4: Damage sustained at the left-hand side of the aircraft

AIC comment

The investigation is continuing, and will include but not limited to flight operations, aircraft airworthiness and serviceability, weather related aspects, airstrip conditions and human 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	1 December 2020, 23:13 UTC	
Occurrence category	Accident	
Primary occurrence type	Runway Excursion-(RE)	
Location	Wobagen Airstrip, Sandaun Province	
	Latitude: 5°16'24.01"S	Longitude: 142° 1'56.55"E
Elevation	5,800 ft	
Strip Orientation	120° takeoff direction (12/300; one-way landing strip)	
Length	2,067 ft (630 m)	
Width	98 ft (30 m)	
Slope	8% up to south east	

Type of Operation, Injury and damage details

Type of Operation	VFR, Charter flight	
Persons on board	Crew: 2	Passengers: 7
Injuries	Crew: Nil	Passengers: 1 (minor)
Damage	Cockpit forward bulkhead, nose landing gear (NLG), nose wheel assembly, left wing and propeller	

Crew details

Pilot in Command

Gender	Male
Age	48
Nationality	Papua New Guinean
Licence type	ATPL
Total hours	6,748
Total hours in Command	2,696.4
Total hours on type	1,450

First Officer

Gender	Male
Age	51
Nationality	Papua New Guinean
Licence type	ATPL
Total hours	14,865.6
Total hours in Command	5,130.2
Total hours on type	9550.1

Aircraft Details

Aircraft

Aircraft manufacturer	Viking Aircraft Limited
Aircraft Model	DHC-6-300
Registration	P2-ASM
Serial number	389
Year of manufacture	1973
Total hours since new	48,082
Total cycles since new	83,877

Engine 1

Engine manufacturer and model	Pratt & Whitney, PT6A
Engine type	PT6A-27
Serial number	PCE-50926
Total cycles since new	36,328
Total time since new	23,591.6
Total time since overhaul	1,996.3

Engine 2

Engine manufacturer and model	Pratt & Whitney, PT6A
Engine type	PT6A-27
Serial number	PCE-52251
Total cycles since new	19,276
Total Time since new	15,412
Total time since overhaul	2,280.1

Propeller 1

Manufacturer	Hartzell Propeller Inc
Model	Hartzell
Serial Number	BUA25583
Hours since Overhaul	1,081

Propeller 2

Manufacturer	Hartzell Propeller Inc
Model	Hartzell
Serial Number	BUA31127
Hours since Overhaul	361.2