



**FINAL REPORT**

**AIC 12-1005**

**PAPUA NEW GUINEA  
ACCIDENT INVESTIGATION COMMISSION  
SHORT SUMMARY REPORT**

**Airlines PNG**

**P2-MCZ**

**De Havilland DHC 6 - 300**

**Runway excursion**

**Sasereme, Western Province**

**PAPUA NEW GUINEA**

**15 May 2012**

## **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), Civil Aviation Rules 2004 (as amended), and the Commissions of Inquiry Act 1951 (as amended), and in accordance with 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.

Readers are advised that in accordance with Annex 13 to the Convention on International Civil Aviation, it is not the purpose of an AIC aircraft accident investigation to apportion blame or liability. The sole objective of the investigation and the Final Report is the prevention of accidents and incidents. (Reference: ICAO Annex 13, Chapter 3, paragraph 3.1.)

However, it is recognised that an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the AIC endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why it happened, in a fair and unbiased manner.

## **About this report**

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.

## Runway excursion involving a de Havilland DHC 6-300 Twin Otter, P2-MCZ

### Occurrence details

On Tuesday 15 May 2012 a de Havilland DHC-6 Twin Otter aircraft, registered P2-MCZ, owned and operated by Airlines PNG, departed Jackson's Airport Port Moresby at 01:40 UTC<sup>1</sup> for Sasereme in the Western Province. It was a regular public transport (RPT) flight that had been planned to refuel at Saserema and continue to Balimo and on to Daru. For the flight to Sasereme, the pilot in command (PIC) was the support/monitoring pilot, and the copilot was the handling pilot. The aircraft arrived over the Saserema airstrip at 02:40. While en-route, the crew was informed by the company flight operations staff that it had been raining at Sasereme throughout the previous night until morning, but the prevailing weather was fine.

The flight was being conducted under the visual flight rules (VFR) procedures. The copilot had not flown into Sasereme before, so this was a training flight for her. During the cruise before top of descent, the crew discussed the approach and landing requirements. Because of the wet, slippery and rough airstrip surface conditions and a landing weight of 5,300 kg, they agreed on a 30 degrees flap settings and a approach speed of 73 knots.

The weather, as observed by the crew, was sunny and fine with few clouds around and the wind was estimated to be light and variable (2 to 3 kt) even though there was no wind sock available to indicate the actual wind velocity. The crew opted to land on strip 14 and joined the circuit on left downwind.



**Figure 1: P2-MCZ at the crash site**

Passing through 50 ft the copilot flared the aircraft and it floated in ground effect. As the main landing gear touched down on the centreline of the strip it skipped, became airborne and stayed in ground effect for at least another 20 m. On the second touchdown the aircraft yawed to the left and at that point the PIC took over the controls and applied full reverse thrust. He applied right rudder to regain the centreline, but at the same time the left main landing gear started impacting the ruts in the surface of the strip, severely degrading directional control.

The PIC subsequently reported that at that point he felt it was not safe to apply power for an aborted landing. He moved the left power lever out of reverse while keeping full reverse and right rudder input on the right engine and began pulsing the brakes. The left main wheel continued impacting more ruts as the aircraft decelerated. Eventually the left main wheel hit a deep rut pulling the aircraft sharply to the left off the runway.

That partially dislodged the landing gear from the airframe causing the left wing to impact the ground. The aircraft came to rest about 5 m from the edge of the airstrip (Figure 1). The PIC shut down the engines while the copilot assisted the passengers from aircraft through the right rear cabin door.

### Sasereme Airstrip

The Sasareme airstrip (Fig. 1) was a privately owned airstrip. The published strip details stated that it was oriented 14/32 (140° M / 320° M), was 900 metres long, 45 metres wide and had a slope of 1% down to the southeast. It was made of clay and gravel and the left side of strip 14 had been substantially eroded, due to the continuous rain, leaving deep ruts. The investigation found that some of the very narrow ruts were almost knee deep. The pilots were not aware of the strip surface condition before the accident.



Figure 2: Damage to left wing outboard section and aileron

### Weight and balance

The investigation determined that the aircraft was within the prescribed weight and balance limits.

### The Crew

The copilot had very little aeronautical experience and was undergoing training. It was her first flight to Sasareme and she was the pilot flying the approach and landing under the supervision of the PIC. She stated that she was being guided through the approach and landing by the PIC. They had not received a report on the condition of the strip prior to the flight.

### Aircraft damage

The aircraft was substantially damaged. The left main wheel was torn from the left main landing gear assembly which also separated from the airframe. Damage to the fuselage, left wing and control surfaces was substantial (See Figure 3).



**Figure 3: View of damaged aircraft from the left wing.**

### **AIC comment**

The PIC chose to let the copilot land the aircraft on a strip into which she had not previously operated. The PIC had not obtained a strip report to give a clear understanding of the surface conditions of the strip. The airstrip had no windsock or visual cues which normally play an important part to assist a pilot in determining the optimum procedures and technique for an approach and landing.

Furthermore, the pilots could not see the strip surface clearly from the air, and with no reports about the condition of the strip to confirm its status and suitability, it may have been advisable to have done a low visual reconnaissance along the strip to ascertain if it was safe to land.

The aircraft was in ground effect during the flare for a longer period than usual because the power was increased to maintain 75kts. During this phase the aircraft was using up 'valuable' strip length while drifting to the left of the centreline. Despite this the PIC elected not to abort the landing. Once the aircraft was established on the ground, directional control had been lost and it was too late to abort the landing.

The investigation determined that the decision to operate into Saserame on a scheduled air service, without knowing the serviceability of the strip, was a safety deficiency in the operation of the aircraft and contributory factor in the accident.

The PIC did not provide the copilot with the opportunity to observe an approach and landing at Sasereme before allowing her to handle a landing there as pilot flying.

The PIC's late decision to take control of the aircraft from the copilot and execute a go-around was also a contributory factor.

## General details

Date and time	15 May 2012 0440 UTC	
Occurrence category	Accident	
Primary occurrence type	Runway excursion on landing roll	
Occurrence type	Accident	
Location:	Sasereme	
	Latitude: 07°37.00'S	Longitude: 142°52.00'E

## Crew details

### Pilot in command

Nationality	New Zealand
Licence type	Commercial (PNG)
Licence number	P20561
Total hours	2,496 hours
Total in Command	507 hours
Total on type	1,176 hours

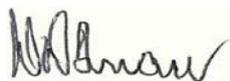
### Copilot

Nationality	New Zealand
Licence type	Commercial (PNG)
Licence number	P21580
Total hours	259.4 hours
Total hours on type	~30 hours

## Aircraft details

Aircraft manufacturer and model	de Havilland Canada DHC-6-300 1971 Twin Otter	
Registration:	P2-MCZ	
Serial number:	330	
Total Airframe Hours	50,168 hours	
<b>Engine number one (left)</b>	Minor damage to compressor stages 1 - 3	
Manufacturer and model	Pratt and Whitney Canada PT6A-27	
Serial number	51396	
<b>Engine number two (right)</b>	Not damaged – Not relevant to this occurrence	
Manufacturer and model	Pratt and Whitney Canada PT6A-27	
Serial number	51693	
<b>Left propeller</b>	Not damaged – Not relevant to this occurrence	
Manufacturer and model	Hartzell HCB3TM	
Serial number	BUA20928	
<b>Right propeller</b>	Not damaged – Not relevant to this occurrence	
Manufacturer and model	Hartzell HCB3TM	
Serial number	BUA20932	
<b>Flight Details</b>		
Catagory	VFR RPT	
Persons on board:	Crew: 2	Passengers: 14
Injuries:	Crew: nil	Passengers: nil
Damage	Substantial to left landing gear, left wing and fuselage.	

## Approved



**David Inau**  
**CEO**

**Accident Investigation Commission**