



PRELIMINARY REPORT

AIC 17-1002

SHORT SUMMARY REPORT

Link PNG

P2-ANK

de Havilland Dash 8-202

Burst tyre at 20,000 feet during climb

39 nm west-northwest of Port Moresby

PAPUA NEW GUINEA

4 August 2017

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 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.

It is not a function of the AIC to apportion blame or determine liability. At the same time, 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, were based on many factors, including the level of safety benefit likely to be obtained from the investigation. For this occurrence, a full on-site, fact-gathering investigation was commenced. The aircraft sustained a burst tyre in flight at 20,000 feet, causing substantial damage to the left nacelle main structure with panels aft of the exhaust missing. Under the PNG *Civil Aviation Act 2000 (as amended)*, *Section 247, Advisory Circular AC 12-1 Appendix A, Section 3, Defect Incidents*, and *ICAO Annex 13, Chapter 1*, the occurrence was classified as an accident.

This Preliminary Summary Report has been produced in accordance with the PNG Civil Aviation Act 2000 (as amended), ICAO Annex 13 to the Chicago Convention on International Civil Aviation, and the PNG Accident Investigation Commission's Policy and Procedures.

Burst tyre in flight at 20,000 feet

Occurrence details

On 4 August local date (3 August UTC¹), a de Havilland Dash 8-202 aircraft, registration P2-ANK (ANK), owned by Air Niugini Ltd and operated by Link-PNG Limited, completed a scheduled Commercial air transport operation² as flight number PX 713 from Bulolo, Morobe Province to Port Moresby. The aircraft arrived at Port Moresby Jacksons International Airport at 21:31 UTC. It had remained overnight at Bulolo, Morobe Province. According to the Technical Log, the aircraft was serviceable when it arrived at Port Moresby.

The aircraft was scheduled for flight PX 864, Port Moresby to Tari, Hela Province on the same day, with an estimated departure time of 22:45. The pilots carried out a normal pre-flight inspection of the aircraft before it was released to service by the licensed engineer on duty.

After obtaining a clearance from air traffic control (ATC), ANK departed from runway 14L at 23:04 UTC, then made a right turn, and commenced tracking on the 298°R of the Port Moresby VOR³ for Tari, under IFR⁴ procedures. There were 28 passengers, two pilots, and one flight attendant on board. About 09:20 when ANK was 39 nm west-northwest of Port Moresby, passing 20,000 feet during the climb, both pilots heard a bang sound, and felt the aircraft shudder.

The copilot reported that he first thought that it was an engine failure. However, visual checks of the engines and instruments showed that both engines were operating normally. He then did a further quick scan of the instrument panel and saw the “unsafe left hand main landing gear door indication” amber light illuminated. He said that he immediately advised the pilot in command (PIC). The copilot then informed ATC of their intention to return to Port Moresby, and that a normal approach and landing was expected.

The flight attendant then alerted both pilots that the left main landing gear door was open. This confirmed the reason for the illuminated unsafe left main landing gear door instrument light. The PIC referred to the Quick Reference Handbook (QRH) as a precaution, and descended to remain below 15,000 feet and not above 130 knots.

At 10 nm from Port Moresby, the copilot requested clearance from ATC to track west of Port Moresby to the Daugo Island area, to hold for 30-40 minutes and burn-off fuel, due to the required landing weight. After burning off the excess fuel to achieve a landing weight of 15,650 lbs, they requested a clearance from ATC to continue descent to Jacksons for a landing.

After obtaining a clearance to land, on the Tower Frequency VHF⁵ 118.1, the copilot selected the landing gear down. With the landing gear fully extended, the cockpit indication was three green lights illuminated. The copilot conducted a cross-check against the alternate landing gear selection, which showed three green lights illuminated. They proceeded to land, assured that the nose- and main- landing gear were safe. At 00:46, the aircraft landed on runway 14L, and with ATC clearance received on VHF 121.7, taxied across runway 14R to the parking area.

The PIC reported that it was at that moment they realised that everyone on the tarmac was looking at the aircraft, particularly the left side. It wasn't until the passengers and the crew disembarked, that the crew were advised by the engineers that panels were missing aft of the left exhaust nacelle.

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 Time) is UTC + 10 hours.

² An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.

³ Very High Frequency Omni-Directional Radio Range (VOR).

⁴ IFR; instrument flight rules.

⁵ VHF; very high frequency radio

Further inspection found the left main landing gear number-2 tyre was deflated and damaged. It was apparent that when the tyre blew out in the wheel well, it caused substantial damage to the main structure on the inside of the nacelle. It was then the crew realised the bang sound they heard was the tyre exploding in flight at 20,000 feet.



Figure 1: Damage area left nacelle



Figure 2: Right nacelle fully intact



Figure 3: Damage number-2 left main wheel tyre



Figure 4: Wheel Assembly during dis-assembled under AIC supervision.

AIC comment

A preflight check is normally carried by the Pilot in Command (PIC), which involves checking the condition and serviceability of the main- and nose- landing gear assemblies including wheels and tyres, all flight control surfaces, engines and nacelles, propellers, fuselage and empennage for any irregularity or Foreign Object Damage (FOD). The PIC subsequently accepts the aircraft as serviceable after a licensed engineer certifies that the aircraft is serviceable by signing the Aircraft Technical Log (ATL).

The engineer on duty has an obligation to ensure the aircraft is serviceable before and after each flight. Air Niugini *Form MC-D8-001* is a *Maintenance Instructions Checklist*, which is used to carry out a post- or pre-flight inspection, and must be signed off by the licensed engineer. The form is sent to the Air Niugini Maintenance Section and filed for record purposes. The engineer signs and releases the aircraft as serviceable on the ATL.

These inspections were reportedly carried out in accordance with Air Niugini procedures.

The left main landing gear number-2 wheel assembly was disassembled under AIC supervision and the tyre was brought to the AIC for further examination and analysis. The Air Niugini maintenance Non-destructive Testing (NDT) section was instructed to perform a Eddy Current Inspection and dye penetrant type testing on the wheel hub assembly s/n 2634, and provide a report to the AIC on their findings.

The manufacturer's technical expert is conducting a damage assessment, and will provide a copy of his report to the AIC through the manufacturer's representative, who is an Adviser appointed by the Accredited Representative from the State of Manufacture, the Transportation Safety Board of Canada, in accordance with ICAO Annex 13 obligations.

The investigation is continuing.

General Details

Date and Time	3 August 2017 23:22 UTC	
Occurrence category	Accident	
Occurrence type	Left main landing gear number-2 tyre blew in flight	
Location	39 nm west-north west of Port Moresby	
	Latitude: 09° 05'S	Longitude: 146°40'E

Crew details pilot in command

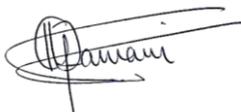
Nationality	Australian
Licence type	ATPL (A)
Licence number	P20087
Total hours	24,381 hours
Total hours on type	5,217 hours
Total hours last 30 days	71.8 hours

Crew details copilot

Nationality	PNG
Licence type	CPL (A)
Licence number	P22246
Total hours	1,257 hours
Total hours on type	1,015.2 hours
Total hours last 30 days	26.6 hours

Aircraft Details

Aircraft manufacturer and model	Bombardier (de-Havilland Canada) Dash 8-202	
Registration	P2-ANK	
Serial number	461	
TTIS	36,000.43 hours	
C of A	Number 011- Non Terminating	
C of R	Number 011- Date of Issue 01 st March 2012	
Type of operation	Scheduled Commercial air transport operation	
Main Tyre P/N	3-14354	
Main Hub assembly S/N	2634	
Persons on board	Crew: 3	Passengers: 28
Injuries	Crew: Nil	Passengers: Nil
Damage	Left nacelle	

Approved

Hubert Namani*Chief Commissioner*

21 August 2017