ACCIDENT INVESTIGATION COMMISSION

SHORT SUMMARY PRELIMINARY INVESTIGATION REPORT

AIC 17-2001

PNG Air & SIL Aviation

P2-MCH & P2-SID

de Havilland Canada DHC-8-102 & Quest Kodiak 100

Reciprocal track airspace proximity incident

6 nm West of Nadzab Airport

Morobe Province

PAPUA NEW GUINEA

2 June 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.

On Friday 2 June 2017, SIL Aviation submitted a notification of a potential serious airspace proximity incident between a SIL Aviation Quest Kodiak 100 aircraft, and a PNG Air de Havilland Canada DHC-8-102 (Dash 8). The incident occurred when the Kodiak was about 6 nm west of Nadzab Airport at about 03:51 UTC on 2 June 2017.

This Short Summary Preliminary Investigation Report[1] 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.

[1] Cover graphic photo adjusted for illustrative purposes.

Reciprocal track airspace proximity incident

Occurrence details

On 2 June 2017, a de Havilland Canada DHC-8-102 (Dash 8) aircraft registered P2-MCH, operated by PNG Air, and a Quest Kodiak 100 aircraft registered P2-SID, operated by Summer Institute of Linguistics Aviation (SIL Aviation), were involved in a reciprocal track airspace proximity incident when the aircraft were about 12 nm and 6 nm west of Nadzab Airport respectively.

The Dash 8, MCH, was being operated on a scheduled passenger flight from Mt Hagen, Western Highlands Province, to Lae (Nadzab Airport), Morobe Province. The Kodiak, SID, was being operated on a private flight from Lae (Nadzab Airport), to Aiyura, Eastern Highlands Province,

The pilot of SID reported that at about 03:51 UTC[2] (13:51 local), he observed a Dash 8 aircraft descending through his level, in their 12 o'clock position, when they were about 6 nm west of Nadzab Airport.

An initial review of the air traffic control recorded information indicated that on departure from Nadzab, SID had been assigned a track on the 268° radial (R) of the Nadzab VOR[3] (268° M), with a clearance limit not above 10,000 ft. About 2 minutes after SID departed from Nadzab, the Nadzab Approach Controller re-cleared SID to maintain 6,000 ft. The pilot of SID correctly read back the assigned altitude.

The crew of MCH had been assigned an inbound track to Nadzab on the 288° R (108° M), on descent to 7,000 ft. However the pilot of MCH incorrectly read back the track as 088. The Approach Controller did not correct the pilot's error.

Less than 2 minutes after being cleared to maintain 6,000 ft, the pilot of SID requested "the inbound track of the inbound aircraft" (the Dash 8). The controller advised him that the "inbound traffic was intercepting the 288° R". Both aircraft were being controlled by the same air traffic controller on the same radio frequency. The pilot of MCH did not inform the controller that MCH was not tracking on the 288° R, but was tracking 088° M (the 268°R). About 1 minute later MCH was cleared to make a visual approach, with a requirement to report vacating 5,000 ft. The pilot of MCH correctly read back the descent instruction.

The pilot of SID then requested an amended track via the 248° R due to weather on their outbound track, and his concern about the proximity of the approaching Dash 8. The controller re-cleared SID to track via the 248° R, and climb to 10,000 ft.

The pilot of SID subsequently reported that the on-board Multi-Function Display[4] (MFD), Traffic Advisory System initially displayed a non-ADSB "Non-threat Traffic" which then turned to a "Proximity Advisory[5]" as SID passed the Dash 8. Neither crew reported receiving a Traffic Alert and Collision Avoidance System (TCAS), Traffic Advisory[6] (TA), or Resolution Advisory[7] (RA) message.

---

[2] 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.

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

[4] A multi-function display is a small screen (CRT or LCD) surrounded by multiple soft keys (configurable buttons) that can be used to display information to the user in numerous configurable ways. MFDs allow the pilot to display navigation routes, moving map, weather radar, NEXRAD, GPWS, TAS or TCAS and airport information all on the same screen.

[5] A Proximity Advisory becomes active when targets come within 6 nm lateral, and 1,200 ft vertical, separation.

[6] An indication given to the flight crew that a certain intruder is a potential threat.

[7] RA: An indication given to the flight crew recommending a maneuver intended to provide separation from all threats; or a maneuvers restriction intended to maintain existing separation. When an RA is issued, pilots are expected to respond immediately to the RA unless doing so would jeopardize the safe operation of the flight. This means that aircraft will at times have to manoeuver contrary to ATC instructions or disregard ATC instructions. In these cases, the controller is no longer responsible for separation of the aircraft involved in the RA until the conflict is terminated.

AIC Comments

The operator of P2-SID submitted a notification in accordance with Civil Aviation Rules Part 12.55 within 3 hours of the incident. The AIC subsequently obtained good quality recorded flight data relating to SID, from the operator's *Flight Following* software, and recorded data from the Flight Data Recorder installed on P2-MCH.

An initial review of the air traffic control recorded data indicates that both aircraft were being controlled by the same air traffic controller, on the same radio frequency. When the pilot of MCH incorrectly read back the assigned track, the controller did not correct the error. Subsequently, when the controller informed the pilot of SID that the inbound traffic (MCH) was intercepting the 288° R, the pilot of MCH did not inform the controller that MCH was tracking 088° M (the 268°R), so the error went undetected

About 1 minute later MCH was cleared to make a visual approach, with a requirement to report vacating 5,000 ft. The pilot of MCH correctly read back the descent instruction.

The undetected tracking errors likely contributed to the potentially unsafe reciprocal track airspace proximity incident between MCH and SID.

The investigation is continuing, and will include a detailed examination and analysis of the data from the Flight Data Recorder in MCH, data from SID's *Flight Following* system, and the transcripts from the recorded air traffic control information.

General details

Date and time	2 June 2017 ~ 03:51 UTC	
Occurrence category	Incident (Potential serious incident)	
Primary occurrence type	Reciprocal track airspace proximity incident	
Location	~ 6 nm west of Nadzab Airport, Morobe Province	
	Latitude: To be verified	Longitude: To be verified

Pilot in Command details P2-MCH

Nationality	Papua New Guinea
Licence type	ATPL (A)
Licence number	P20187
Total hours	7,200
Total hours on type	4,600
Total hours last 30 days	96

Co-pilot details P2-MCH

Nationality	Papua New Guinea
Licence type	CPL (A)
Licence number	P22416
Total hours	485
Total hours on type	213
Total hours last 30 days	86

Pilot in Command details P2-SID

Nationality	United States of America
Licence type	CPL (A)
Licence number	P20091
Total hours	5,460
Total hours on type	1,834
Total hours last 90 days	76

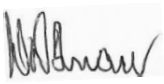
Aircraft details P2-MCH

Aircraft manufacturer and model	de Havilland Canada DHC-8-102 (Dash 8)	
Registration	P2-MCH	
Serial number	012	
Aircraft operator	PNG Air	
Type of operation	Regular Public Transport	
Persons on board	Crew: 3 (2 pilots, 1 Flight Attendant)	Passengers: 12
Injuries	Crew: Nil	Passengers: Nil
Damage	Nil	

Aircraft details P2-SID

Aircraft manufacturer and model	Quest Aircraft Company, Kodiak K100	
Registration	P2-SID	
Serial number	100-0048	
Aircraft operator	SIL Aviation	
Type of operation	Private	
Persons on board	Crew: 2 (Pilot in Command under supervision)	Passengers: Nil
Injuries	Crew: Nil	Passengers: Nil
Damage	Nil	

Approved



David Inau, ML

Chief Executive Officer

14 June 2017