



PRELIMINARY REPORT

AIC 20-1002



MISSION AVIATION FELLOWSHIP

P2-MAI

Cessna 208 Caravan

Loss of control during landing at Miyanmin Airstrip

Papua New Guinea

14th February 2020

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.

At 07:05 UTC¹, 17:05 local time on the 14th February 2020, Mission Aviation Fellowship notified the Papua New Guinea Accident Investigation Commission (AIC) by telephone of the accident involving a Cessna 208 Caravan aircraft, registered P2-MAI, owned and operated by Mission Aviation Fellowship PNG Limited. AIC was notified again by e-mail at 07:18 UTC, 17:18 local time. The AIC immediately commenced an investigation and on 20th February 2020 dispatched a team of investigators to the accident area to perform on-site activities and to interview the flight crew involved in the accident and other personnel on the ground.

This *Preliminary Aircraft Accident Investigation Report* was produced by the AIC, PO Box 1709, Boroko 111, NCD, Papua New Guinea. It is publicly released by the Commission in accordance with *Para 7.1 of ICAO Annex 13*. The report is published on the AIC website: www.pngaic.gov.pg.

The report is based on the initial investigation 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.

Occurrence Details

On 14 February 2020, at 04:48 UTC¹ (14:48 local time), a Cessna 208 Caravan aircraft, registered P2-MAI, owned and operated by Mission Aviation Fellowship (MAF) PNG Limited, experienced a loss of control during the landing roll at Miyanmin Airstrip, while conducting a non-scheduled flight, from Telefomin, Sandaun Province.

There were 11 persons on board the aircraft; 2 pilots and 9 passengers. The pilot flying the aircraft was undergoing route and airstrip training (hereafter referred to as the 'pilot'). He was occupying the left seat and was in command under supervision (ICUS). The pilot in the right seat was the instructor pilot (hereafter referred to as the 'instructor') for MAF conducting route and airstrip training for the new pilot.

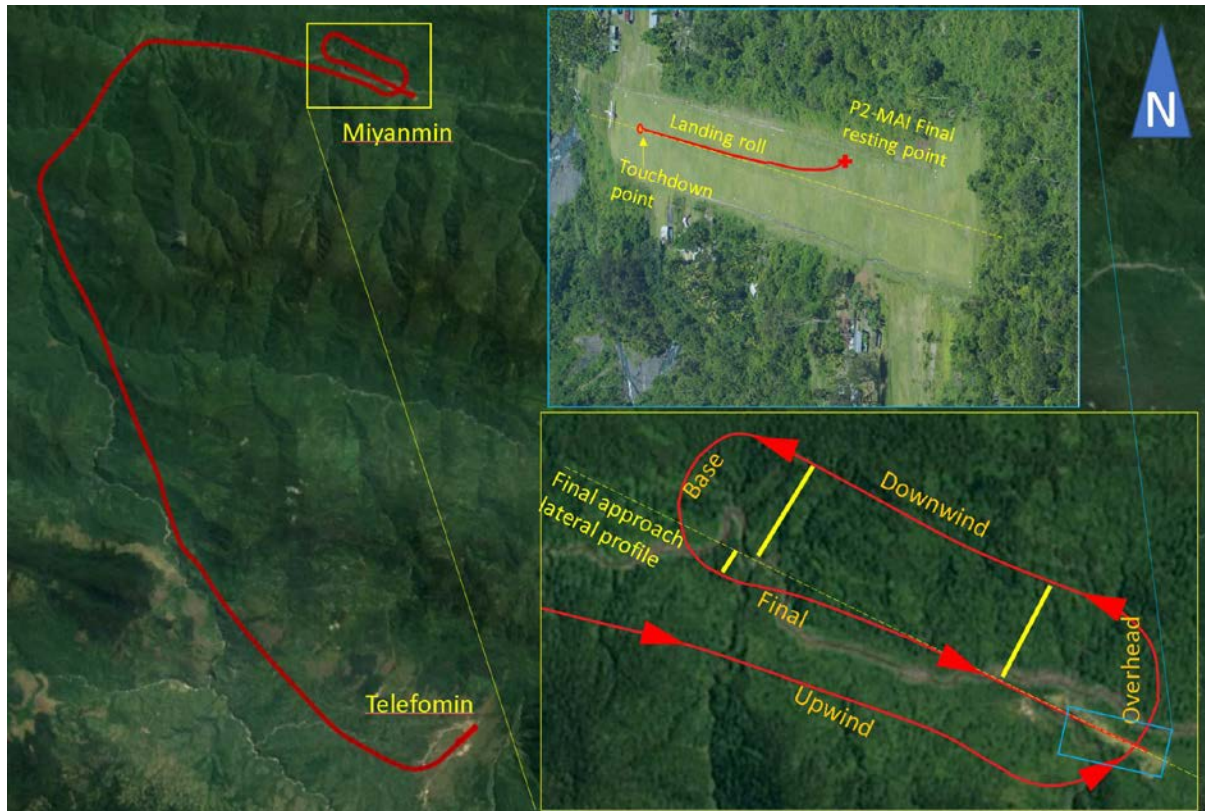


Figure 1: P2-MAI flight and accident location

The recorded Global Positioning System (GPS) data² showed that the aircraft arrived in the Miyanmin circuit area just after 04:40 UTC, and joined upwind, at about 1,200 ft AGL³. The pilot crossed overhead of the airstrip for an inspection of the surface and wind conditions. The crew stated during their interviews that they did not observe any standing water or any wet areas on the strip. They also reported that the windsock indicated calm winds and the strip was clear.

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 is UTC +10 hours.

² The recorded GPS data was taken from the Garmin G1000 data file for P2-MAI flight from Telefomin to Miyanmin, 14 February 2020. The G1000 is an integrated flight instrument system typically composed of two display units, one serving as a primary flight display, and one as a multi-function display. Manufactured by Garmin, it serves as a replacement for most conventional flight instruments and avionics.

³ Above Ground level (AGL). All heights are referenced to the Miyanmin Airstrip threshold elevation of 2,500ft taken from the Airstrip Guide, 2012 and based on GPS data from the Garmin G1000 equipment on board the aircraft.

The aircraft joined mid-downwind⁴ less than half a nautical mile from the airstrip and tracked North West, descending from 1,200 ft to 1,000 ft before turning onto base. The aircraft began descending as it turned to line up on the final approach profile. There was a tailwind⁵ component of 5-12 kt on base and final. The aircraft overshot⁶ the turn onto final approach, 1.8 nm from the threshold at 900 ft. The pilot established the aircraft on the approach profile 1 nm from the threshold and at about 500 ft.

The instructor stated that during final approach, the aircraft had descended below the normal approach profile causing him to instruct the pilot to adjust power and aim point to get back onto the correct profile. The pilot commenced the flare just under 20 ft AGL, 78 kt (85 kt ground speed).

The GPS data showed that the aircraft touched down at 04:44:10 with an airspeed of 77 kt (82 kt ground speed) 36 m past the 11 (110°) threshold. The pilot stated that a few seconds after touchdown, he applied reverse thrust and the aircraft veered left. According to tyre track approximations, the aircraft appeared to have deviated about 220 m up-strip from threshold. The pilot stated that he applied full right rudder in an attempt to turn the aircraft back towards the center of the strip. The aircraft turned back to the right and rolled parallel to the centerline for another 100 m before it swerved left again, diverging at a 30° angle from the centerline. It rolled for 60 m as it bogged into the soft ground. The propeller blades subsequently struck the ground and the aircraft turned sharply left causing it to tip onto its starboard side.

The crew reported that there were no injuries sustained during the accident and subsequent evacuation.

⁴ Mid-downwind- A long level flight path parallel to but in the opposite direction of the landing runway. It has "sub-legs" of early, mid and late. A plane giving a position report of "mid-downwind" can be visually located easily.

⁵ Tailwind- The wind component that blows in the direction of travel of an aircraft; a wind blowing from behind.

⁶ Overshoot- When an aircraft goes past the intended point or limit.

Damage to the aircraft

The aircraft sustained substantial damage. The nose landing gear spring attachment bolts had sheared off resulting in the drag link spring getting detached from the Nose wheel landing gear (NLG). The three propeller blades were bent and the outboard aileron section of the right wing was bent upwards.



Figure 2: Nose wheel bogged in soft mud



Figure 3: Detached NLG Spring from nose wheel landing gear



Figure 4: Right-hand wing tip damage



Figure 5: Evidence of damage in a propeller blade



Figure 6: P2-MAI after being moved by the crew and the locals from the accident location to bottom of the airstrip.

AIC comment

The investigation is continuing and will include maintenance, operational and organisational aspects, aircraft performance and handling characteristics, environmental influences, airstrip data and accident notification to authorities.

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

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	14 February, 2020, 04:48 UTC, 14:48 local time		
Occurrence class	Accident		
Primary occurrence category	Loss of control on ground (LOC-G)		
Location	Miyanmin Airstrip, Sandaun Province		
Elevation (AGL)	2,500 ft	Orientation	11/29
Length of strip	600 m		
Width of strip	30 m		
Slope	7% up towards the NW		
Latitude	4° 53' 53.87" S	Longitude	141° 36' 55.56" E

Crew details

Pilot in Command

Nationality	Australian
Licence type	CPL
Licence number	P21689
Total hours	7367.1
Total hours in Command	5766.7 hours
Total hours on type	1722.2 hours

Training pilot

Nationality	British
Licence type	CPL
Licence number	P210169
Total hours	3208 hours 40 minutes
Total hours in Command	2978 hours and 55 minutes
Total hours on type	30 hours and 50 minutes

Type of Operation, Injury and damage details

Type of operation	VFR, Passenger flight		
Persons on board	Crew: 2	Passengers:	9
Injuries	Crew: Nil	Passengers:	Nil
Damage: Nose landing gear, propeller and right-hand wing tip			

Aircraft Details

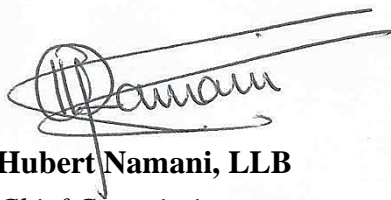
Aircraft manufacturer	Textron Aviation
Aircraft Model	Cessna 208 Caravan
Aircraft type	Fixed wing single engine
Number of engines	1
Engine type	Turbo-prop
Registration:	P2-MAI
Serial number:	20800613

Engine Data

Manufacturer	Pratt & Whitney Canada
Model	PT6A-114A
Serial Number:	PCE-PC2271
Total Engine cycles	563
Total Airframe hours	566.4
Total Airframe cycles	1069 landings

Propeller Data

Propeller manufacturer and model	McCauley 3GFR34C703-B
Propeller Serial Number	951897
Total propeller hours	816.6
Total propeller cycles	1586
Hours since overhaul	816.6
Cycles since overhaul	1586



Hubert Namani, LLB

Chief Commissioner

11th March 2020