



FINAL REPORT

AIC 16-1004

SHORT SUMMARY REPORT

CENTRAL AVIATION

P2-BWC

PACIFIC AEROSPACE PAC 750XL

**TOUCHDOWN OFF HARD SURFACE OF STRIP
SUBSEQUENT LOSS OF CONTROL**

SIMBAI AIRSTRIP, MADANG PROVINCE

PAPUA NEW GUINEA

23 OCTOBER 2016

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 2015 (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.

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, are based on many factors, including the level of safety benefit likely to be obtained from an investigation.

The Accident Investigation Commission (AIC) was informed of the accident on the afternoon of 23 October 2016 and AIC investigators deployed to the occurrence site on 24 October 2016.

The AIC has produced this short summary report for greater industry awareness of potential safety issues and possible safety actions.

Touchdown off hard surface of strip; subsequent loss of control

Occurrence details

On the morning of 23 October 2016, at 01:06 UTC¹ (11:06 local time), a PAC 750 aircraft, registered P2-BWC (BWC), operated by Central Aviation Ltd, was being flown under the visual flight rules² (VFR), on a charter flight from Mt. Hagen to Simbai, Madang Province. There were two persons on board; the pilot-in-command (PIC) and one passenger.

The pilot arrived at work at 21:05 on the day of occurrence and conducted a pre-flight inspection on BWC prior to conducting an engine ground run on BWC and another PAC 750 aircraft. After the engine ground runs, the pilot arranged for BWC to be loaded and then contacted the agent in Simbai for a weather report update.

The agent informed the pilot that the weather in the area was fine with some cloud in the area, and not much wind. The circuit area had some cloud, but was fine.

The pilot departed Mt. Hagen at 00:45, and arrived in the circuit area at Simbai at 01:06 and over flew the airstrip before joining downwind for a landing on strip 26.

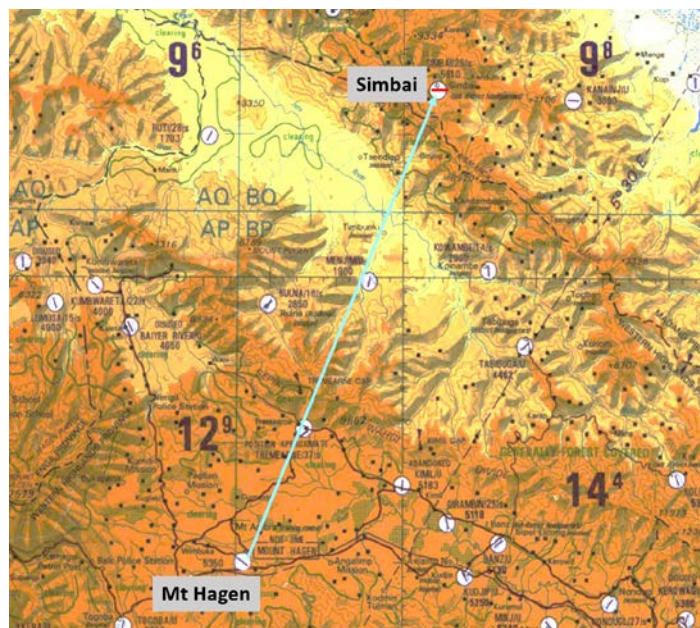


Figure 1: Flight plan route

Because of many years of lack of airstrip maintenance, and heavy rainfall, water runoff had shifted a lot of soil, including airstrip gravel down the runway, and deposited it on the grassed area along the south-western side of the strip. During heavy rain, those parts of the airstrip became extremely soft. Much of the gravel on the centre of the strip had been washed away, exposing stones. The drain that ran across the southern length of the strip was blocked, causing the rain water to flow along the edges of the strip's gravel surface.

¹ The 24-hour clock is used in this report to describe the local time of day, Local Mean Time (LMT), as particular events occurred. Local Mean Time was Coordinated Universal Time (UTC) + 10 hours.

² The visual flight rules (VFR) are the rules prescribed for visual flight by the Civil Aviation Safety Authority of PNG (CASA PNG) which stated that, within controlled airspace, an aircraft should be 2 km horizontally and 500 ft vertically clear of cloud, with visibility of 8 km or more at or above 10,000 ft AMSL, or 5 km or more below 10,000 ft AMSL.

The pilot estimated the wind to be easterly, 6 to 7 kts, gusting to 10 kts; a tail wind. The pilot stated that the approach was stable, and the aircraft was lined up with the centre of the airstrip, with the airspeed between 70 and 72 kts. The aircraft flared normally, but touched down well to the left of the centre of the strip, about 175 metres in from the landing threshold. The pilot stated that the aircraft drifted left during the flare, and the corrective control inputs were not made quickly enough to correct the drift.

The nose-wheel and the right main wheel touched down on the gravel area of the strip. The left main wheel touched down on the grassy area about 1 metre left of the gravel surface of the strip. The left main wheel sank into the soft ground, and the aircraft continued along the soft grass, with that wheel dragging through the grassed muddy side of the airstrip.



Figure 2: Evidence of the start of runoff

When the pilot applied reverse thrust the aircraft veered to the left and then turned left sharply, diverging further through the extremely soft grass covered surface towards a fence. The pilot reported applying reverse thrust and kicking the brakes and right rudder to turn the aircraft right. The left wing's lower surface impacted a fence before the aircraft stopped. The pilot shut down the engine, and evacuated the passenger.

The left wing lower surface was damaged by the steel star-picket fence posts, puncturing the left main fuel tank, and fuel leaked from that tank. The left aileron trim tab fractured. There were a number of tears in the left wing's lower surface skins. There was no apparent structural damage.



Figure 3: Damaged left wing lower skins

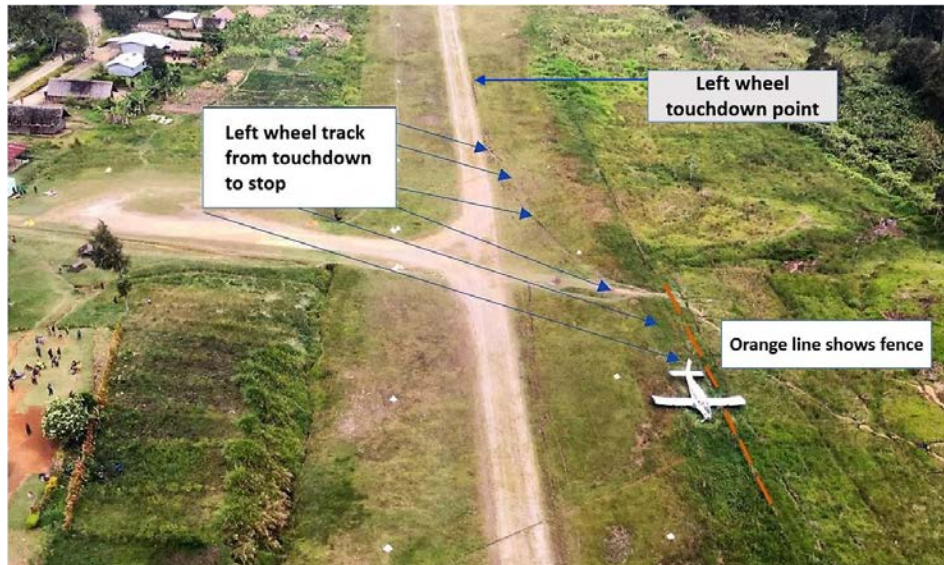


Figure 4: Aircraft track after touchdown

The last NOTAM issued by PNG Air Services Limited (PNG ASL) in relation to Simbai Airstrip (C1134) was dated 24 December 2014, and expired 15 January 2015 at 16:00 local. It stated:

Caution due soft and boggy surface mid-section of southern side of strip.

No NOTAMs had been issued by PNG ASL in relation to Simbai since 15 January 2015.

However, the aircraft operator maintained an aerodrome guide for all airstrips into which its pilots operated. The operator's document for Simbai at the date of the accident, was dated August 2015. The operator stated that the guide was an uncontrolled copy.

Under the heading "Weather", the document for Simbai Airstrip stated:

Expect tailwind for LDG after 1000.

Under the heading "Surface", it had a sub-heading "Gravel and Grass". It stated:

9m centreline is hard surface; off this area ground is soft for the entire runway – turning a/c likely bog. Slope less than 2% for first 460m then greater than 5%.

Under the heading "Penalties" where it lists runway length, width and slope, it stated that the width of the airstrip was 30m.

The airstrip was defined by white marker cones at its 30 metre width extremities. However, as described above, the surface on either side of the 9m gravel hard surface of the strip was soft. Therefore it was unsuitable for aircraft operations.

The pilot had received and passed appropriate theory and practical endorsement training for the PAC 750 aircraft. Following the endorsement, the operator entered the endorsement details in the pilot's logbook in accordance with CAR 61.55 (a) (1) and (2), but did not forward the details to CASA Flight Crew Licencing as required under CAR Part 61.55 (b) and (c). Therefore, the pilot's licence was not endorsed with the PAC 750 aircraft type as required under CAR Part 61.55.

The operator continued to roster the pilot for PAC 750 flight operations, and the pilot completed 525 hours on the PAC 750, without the endorsement details on the licence.

The pilot was checked into Simbai on 29 and 31 August by two different check and training pilots; each time over the route Mt Hagen – Simbai – Mt Hagen as pilot-in command under supervision. Between the date of the last check flight into Simbai and the accident, the pilot made six landings at Simbai as pilot-in-command (solo), including the accident landing. The pilot's most recent landing at Simbai as the sole pilot was 5 days prior to the accident.



Figure 5: P2-BWC and star picket fence posts.

AIC comments

The aircraft was certified as being airworthy when it was dispatched for the flight.

There was no evidence of any defect or malfunction in the aircraft that could have contributed to the accident.

There was no evidence that any form of incapacitation or physiological factors affected the pilot's performance.

The pilot had flown the PAC 750 aircraft type for 525 hours, and therefore had adequate experience in its handling characteristics.

The pilot's Flight Crew Licence was not endorsed with the PAC 750 aircraft type as required under CAR Part 61.55

During the landing flare the pilot's corrective control inputs were not made quickly enough to correct the left drift.

The operator's pilots knew that the Simbai Airstrip had a 9 metre wide hard surface about the centreline, and that outside that area the ground was soft for the entire airstrip.

The investigation determined that the licencing oversight, and the operator's non-compliance with CAR 61.55 (b), did not contribute to accident.

Safety Action

The Simbai Airstrip was closed to all fixed wing operations following the accident, in a joint decision by all of the fixed-wing aircraft operators servicing the Simbai community. The operator involved in this accident informed the AIC that the closure would remain in force until airstrip remedial work was carried out, to ensure adequate drainage from the full width of the strip and the surface was suitable for aircraft operations. Subsequently, approximately one flight each week has been conducted by one operator during January 2017. While at Simbai the pilot checks the progress of the airstrip remedial work and informs the other operators. At the time of finalising this report, progress of the remedial work was reported to be very slow, and due to ongoing safety concerns about the airstrip, operations of larger aircraft, such as PAC 750, Cessna 208, and Twin Otter, remained suspended for the foreseeable future.

General Details

Date and time:	23 October 2016 01:06 UTC (11:06 local time)	
Occurrence category:	Accident	
Primary occurrence type:	Touchdown off hard surface of strip; subsequent loss of control	
Location:	Simbai Airstrip	
(Google Earth Pro at Simbai airstrip threshold)	Latitude: 05°16'42.25" S	Longitude: 144°32'49.42"E

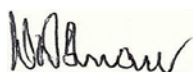
Crew details

Nationality	Papua New Guinean
Licence type	CPL (PNG)
Licence number	P20765
Total hours	890.85
Total hours in Command	398.80
Total hours on type	525.00

Aircraft Details

Aircraft manufacturer and model:	PAC 750XL	
Registration:	P2-BWC	
Serial number:	XL136	
Engine manufacturer and model	Pratt & Whitney Canada PT 6A-34	
Engine serial number	PCE-RB0364	
Type of operation:	Charter	
Persons on board:	Crew: 1	Passengers: 1
Injuries:	Crew: Nil	Passengers: Nil
Damage	Left wing lower skin damage. Aileron trim tab fractured. Left fuel tank punctured.	

Approved



David Inau, ML

CEO

Accident Investigation Commission

1 February 2017