ACCIDENT INVESTIGATION COMMISSION

FINAL REPORT

AIC 12-1006

Undershoot; landed in water

P2-SBA

Pilatus Britten Norman BN-2T Turbine Islander

40 metres northwest of threshold runway 12 Vanimo Airport

PAPUA NEW GUINEA

11 June 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. The principal function of the Commission is the investigation of aviation accidents and incidents.

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.

On 11 June 2012, the PNG AIC was informed about a Britten Norman BN-2T aircraft that struck the water about 40 metres short of the threshold of runway 12 at Vanimo Airport, Sundaun Province. The aircraft settled into the water. None of the occupants were injured.

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

Loss of situational awareness during landing approach

Occurrence Details

On 11 June 2012 at approximately 03:10 UTC [1] a Britten Norman BN – 2T Turbine Islander aircraft, registration P2-SBA struck the water about 40 metres short of the threshold of runway 12 at Vanimo Airport, Sundaun Province during a landing approach in rain.

The aircraft was being operated on a charter flight, and was returning from Wasengla, located about 40 nm southwest of Vanimo, also in the Sundaun Province. There were five persons on board; one pilot and four passengers.

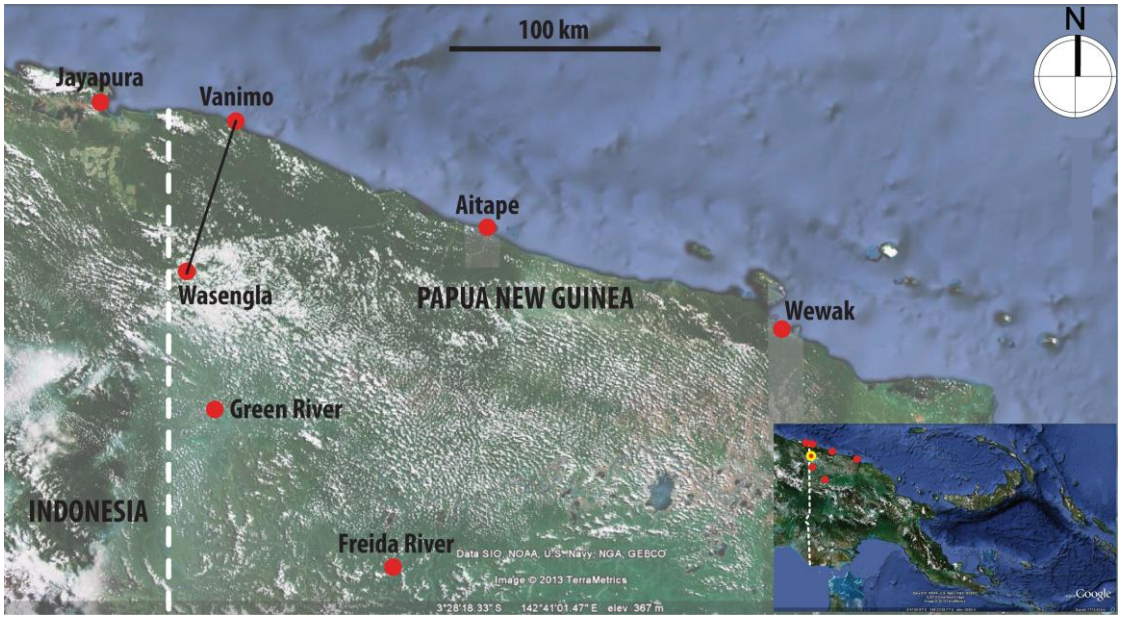

Figure 1: Map showing the route flown

The pilot reported that during the flight he was informed by his company that the weather at Vanimo was deteriorating; however he elected to continue to Vanimo.

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.

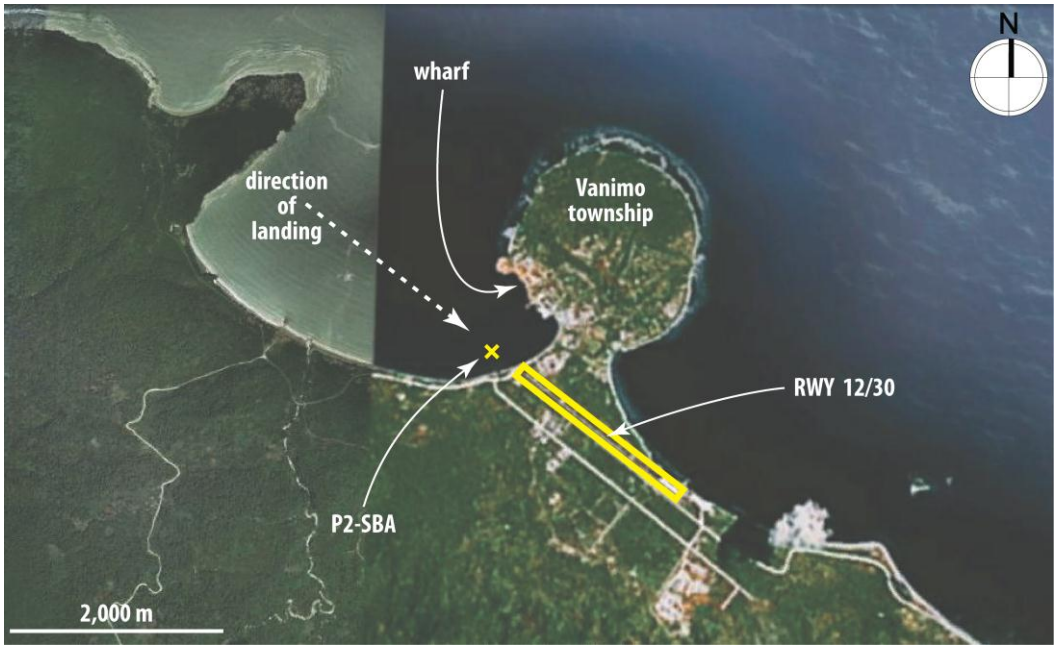

Figure 2: Vanimo Airport and location of the accident

Background

The pilot stated that as he was approaching Vanimo, and while decending through 3,500 feet, he noticed that the airport and eastern side of Vanimo Hill were obscured by rain cells, however the western side of the hill and the harbour appeared to be clear. He stated that the threshold of runway 12 appeared to be only in light rain, so he continued a wide descending turn onto downwind for runway 12.

While turning onto long final the pilot configured the aircraft for landing, full flaps (56^0), with the speed reducing towards 70 kts. The pilot stated that once the aircraft was established on final, it became obvious to him that the rain was very heavy over the threshold, and that the visibility along the runway was very poor. He said that at that stage the speed was approximately 66 kts, and so he decided to overshoot and go around for a left circuit and a second approach.

However, before he carried out the actions to go around, the main wheels touched the water, and the aircraft immediately settled into the water. The passengers and the pilot exited the semi-submerged aircraft and were rescued. None of occupants of the aircraft were injured.

The pilot later stated that he may have been distracted by studying the unusual rain cells and weather, looking too far ahead of the aircraft, and caught by slant visibility illusion.

During an interview with the AIC investigators, the pilot stated that usually there were many logging barges under the approach to runway 12, but they were not there on the day of the accident, so he thought he was higher than he really was.

The Pilot

The pilot, had a total flying experience of 14,400 hours, of which more than 3,500 hours were on the BN-2T aircraft type. He had operated on a CASA PNG Certificate of Validation (COV) Number 083/2012 with effect between 13 January 2012 and 15 April 2012. That COV permitted the pilot to fly PNG registered aircraft based on his Australian Commercial Pilot Licence number 031968 and his Class One Medical Certificate valid to 24 August 2012.

At the time of the accident the pilot's COV had expired, which meant that his Australian Medical Certificate was no longer valid for PNG licencing. His PNG Class One Medical Certificate expired on 27 April 2012. Therefore, at the time of the accident the pilot did not have a valid PNG Pilot Licence.

On the day of the accident, the pilot was wearing prescription lenses with photochromic lenses.

The pilot had recently undergone an eye examination at a clinic in Coolangatta, Queensland, Australia, In his report the Doctor stated: "this man's ocular examination was normal and unchanged since he was last seen for his pilot licence medical recently. I believe the contributing factor in his recent accident was probably the use of photochromic lenses in situations where there is rapidly changing light".

The rapidly changing light could be attributed to the aircraft moving from areas of light rain with better visibility to areas of heavy rain with poor visibility and less light.

The intensity of the tinting may not have automatically reversed quickly enough to allow the pilot to adjust his vision acuity to the lower light conditions as the aircraft entered the area of heavy rain.

The Aircraft

The aircraft was towed to the shore, and brought to the airport.

There was no significant impact damage to the airframe or engines. However, the aircraft was substantially damaged due to sea water ingestion in the engines and airframe.

Figure 3: P2-SBA after recovery from the water

Meteorological information

The Vanimo Terminal Area forecast (TAF 1) for 11 June 2012, issued by the National Weather Service, valid from 16:00 to 03:00 indicated; wind variable at 3 knots, visibility Ok in rain showers, cloud scattered at 1,800 feet, another layer at 3,000 feet, and broken layers at 12,000 feet. Intermittent (inter) periods from 20:00 with visibility of 4,000 metres in rain showers, and broken clouds with cloud base at 800 feet.

The area forecast (ARFOR) for the northern part of PNG (including Sundaun Province) for 11 June 2012, valid from 23:00 to 11:00 indicated; clouds below 20,000 feet, isolated cumulonimbus (cb) cloud, with the cloud base at 16,000 feet, broken stratus (st) with cloud base at 600 feet, and cloud tops up to 3,000 feet in precipitation. Scattered cumulus (cu) cloud with the cloud base at 1,500 feet, scattered stratocumulus (sc) with base at 2,500 feet, and tops up to 8,000 feet in rain and drizzle.

Visibility 3,000 metres in thunderstorms, rain and drizzle, and 8,000 metres in rain showers.

Aerodrome information

The Vanimo Airport is located 1 km south of the township and is a level sealed surface, with an elevation of 7 meters (22 feet) above sea level. The runway orientation is 125/305 degrees magnetic and was 1,900 metres long and 30m wide. However, the runway 12 threshold was displaced by 140 metres, which was indicated by permanent displacement markings.

Additional information

The pilot of a Royal Australian Air Force C130 aircraft, who landed 10 minutes after the accident, provided the following post-accident information.

He informed the investigators that when approaching 10 nm they heard a brief ELT signal and identified the location in the water approximately 20 metres short of the threshold of runway 12. He stated that the weather at that time was "not quiet suitable for operations, especially for VFR". It was raining heavily with clouds of different layers, with the main base at 500 feet and tops of 5,000 feet.

The visibility was fluctuating between 500 and 1000 metres. It was hard to see the runway let alone the threshold from about 500 feet high.

The C130 crew stated that they made two approaches for landing, but on each approach they could not see the runway, so had to go around. They landed from the third attempt.

The C130 pilot said that after the aircraft was dragged onto the airfield he spoke to the pilot of the BN-2T, who said that he had concentrated too much on the weather and not the altitude.

It is significant to note that the C130 was equipped with windscreen wipers, whereas the BN-2T is not, and despite this the C130 crew did not assess that they had sufficient visibility to make a complete landing approach.

AIC comment

- The aircraft was certified as being airworthy when dispatched for the flight.
- The pilot did not hold a valid PNG Flight Crew Licence, and his Class One Medical Certificate had expired 46 days prior to the accident.
- The Operator did not have systems or procedures in place to ensure their pilots met CASA Flight Crew legislated requirements.
- The pilot attempted to continue visual flight in extremely marginal visual conditions.
- The pilot lost situational awareness and allowed the aircraft to descend into the water on the landing approach.
- The pilot had commenced wearing prescription lenses that had photochromic tinting. The intensity of the tinting may not have automatically reversed quickly enough to allow the pilot to adjust his vision acuity to the lower light conditions as the aircraft entered the area of heavy rain.

AIC safety action

The AIC draws pilots' attention to the need to allow time to know the limitations of the prescribed lenses, and adjust to any new prescription lenses in all conditions of light before embarking on aircraft operations. This is particularly important when using photochromic lenses for the first time.

General details

Date and time:	11 June 2012. 03:10 UTC	
Occurrence category:	Accident	
Primary occurrence type:	Loss of situational awareness during landing approach	
Damage	Substantial damage due to sea water ingestion	
Location:	40 metres northwest of the threshold of Runway 12, Vanimo Airport	
	Latitude: 02° 41.601′ S	Longitude: 141° 18.265′ E
Type of operation:	Charter	
Persons on board:	Crew: 1	Passengers: 4
Injuries:	Crew: 0	Passengers: 0

Crew details

Nationality	Australian
Licence type	Commercial
Licence number	P21587
Total hours	14,000
Total hours on type	3,500

Aerodrome details

Aerodrome and code	Vanimo Aerodrome (AYVN)
Runway directions	12/30
Runway slope	Level
Runway surface and strength	Sealed
Runway length	1,900 m (Runway 12 threshold permanently displaced by 140 metres)
Runway elevation	7 metres

Aircraft details

Aircraft manufacturer and model:	Pilatus Britten Norman BN-2T Turbine Tslander
Registration:	P2-SBA
Serial number	2138
Total time in service	8596.1 hours
Engines Left and Right	
Engine manufacturer and model	Rolls-Royce Corporation 250 B17C
Engine serial numbers	Left CAE 880552 and Right CAE 880557

Approved

David Inau, ML
Chief Executive Officer
19 December 2016