



## **INTERIM FACTUAL REPORT**

**AIC 19-1001**



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## ABOUT THE AIC

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The 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.

On 11<sup>th</sup> August 2019 the AIC was informed by Papua New Guinea Air Services Limited (PNGASL) of an accident involving a Bell 427 helicopter, registered P2-HSG, owned and operated by Niugini Helicopters. The helicopter had crashed into the water.

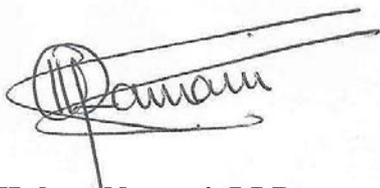
The AIC dispatched a team of investigators to Kimbe, West New Britain Province on 13<sup>th</sup> August 2019 and commenced interviewing the pilot and the operator.

This *Interim Factual Report* was produced by the AIC, PO Box 1709, Boroko 111, NCD, Papua New Guinea. It is publicly released by the Commission and is published on the AIC website: [www.aic.gov.pg](http://www.aic.gov.pg).

The *Interim Factual Report* is based on the investigation to date carried out by the AIC in accordance with the 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*. The *Interim Factual Report* is based on the investigation carried out by the AIC to date 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*. Safety actions have not been taken, and safety recommendations have not issued at the time of issuing this *Interim Factual Report*.

The sole objective of the investigation and the *Interim Factual Report* is in accordance with the AIC's obligation on behalf of PNG as a Signatory State to the *Convention on International Civil Aviation* and in accordance with *Annex 13* to that *Convention*, thereby promoting 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 *Paragraph 3.1* of *Annex 13*, it is not the purpose of the Commission's aircraft accident investigations 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.



**Hubert Namani, LLB**

*Chief Commissioner*

7<sup>th</sup> October 2019

## Bell 427 twin-engine helicopter registered P2-HSG impact with water 3.1 nautical miles North West of Baluma township.

### Occurrence details

On 11<sup>th</sup> August 2019, at about 01:24 UTC<sup>1</sup> (11:24 local time), a Bell 427 helicopter, registered P2-HSG, owned and operated by Ballina Limited t/a Niugini Helicopters, was conducting a VFR<sup>2</sup> ferry flight from Kokopo, East New Britain Province to Kimbe, West New Britain Province, when it impacted the water, over a reef, about 3.1 nm North West of Baluma township.



Source: Spider tracks data

Figure 1: Depiction of accident location in relation to Hoskins airport.

The pilot, the sole occupant of the helicopter, was seriously injured. He was rescued from the accident site at 02:12 by the Operator, with the assistance of local boat owners.

During the investigation interview, the pilot stated that he descended to about 3000 ft and commenced an autorotation<sup>3</sup> exercise. Just as he tried to roll out of the flare<sup>4</sup> at about 1000 ft, the engine torque gauge indicated 'low' and the helicopter did not respond to the power inputs by the pilot. He immediately activated the company's third-party tracking system (Spider tracks<sup>5</sup>) 'SOS' at about 01:04 just before descending through 1000 ft, and broadcast a 'Mayday'.

<sup>1</sup> 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, Pacific/Chuuk Time is UTC + 10 hours.

<sup>2</sup> **Visual Flight Rules:** Those rules as prescribed by national authority for visual flight, with corresponding relaxed requirements for flight instruments (Source: *The Cambridge Aerospace Dictionary*)

<sup>3</sup> **Autorotation** is a state of flight in which the main rotor system of a helicopter or similar aircraft turns by the action of air moving up through the rotor, as with an autogyro, rather than engine power driving the rotor.

<sup>4</sup> **Flare** is the final nose-up pitch of landing aeroplane/helicopter to reduce rate of descent close to zero at touchdown. (Source: *The Cambridge Aerospace Dictionary*)

<sup>5</sup> **Spider tracks** is an innovative satellite-based tracking system, combining satellite communication and GPS technology into one simple, cost effective and portable solution.

## Investigation to date

The investigation is still in the evidence gathering and analysis stage. A number of components have been sent to the Transportation Safety Board of Canada (TSBC) for detailed examination and analysis by the engine manufacturer Pratt and Whitney Canada (P&WC) under the supervision of TSBC investigators. The analysis will determine if the engines will need to be shipped to a certified teardown facility for a disassembly investigation. The engines are currently stored in the Niugini Helicopters hangar.

The tail rotor gearbox has been mounted in the AIC's engineering workshop for teardown examination and analysis.

## Survival aspects

The investigation is examining and analysing evidence in relation to the survival aspects of this accident, which includes, but is not limited to search and rescue activities and the location of the pilot in relation to injuries sustained.

## Search and Rescue

The Air Traffic Services (ATS) section of the Civil Aviation Authority (CAA) was responsible for maintaining the PNG Rescue Coordination Centre (RCC) up until the formation of PNGASL in July 2007.

Following the aviation regulatory reform in 2007, PNGASL continued providing SAR coordination services to the aviation industry, through the activation of an RCC on a needs basis. The mandate remained with the CAA up until the *Civil Aviation (Amendment) Act 2010* was certified on 9<sup>th</sup> July 2010. The RCC responsibility was removed from the CAA with the establishment of the Civil Aviation Safety Authority in July 2010 when *Section 13* of the *Civil Aviation Act* was repealed with the *Civil Aviation (Amendment) Act 2010*.

The *Civil Aviation Act* was further amended in 2016 with the certifying of the *Civil Aviation (Amendment) Act 2016* on 13<sup>th</sup> December 2016. The amendment placed the responsibility for establishing, maintaining and operating the RCC on the Minister for Civil Aviation. The amended *Act* also enabled the Minister for Civil Aviation to formally delegate to PNGASL, CASA PNG, or any government agency for which the Minister is responsible and whose functions are consistent with search and rescue operations to establish, maintain and operate a search and rescue coordination centre in accordance with *Section 8A(1)(a)* and *Section 8B(a)* of the *Act*.

*ICAO Annex 12, Chapter 1* defines a Rescue Coordination Centre (RCC) as:

A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

*Annex 12, Section 2.3 Rescue Coordination Centres and rescue subcentres* states:

2.3.1 Contracting States shall establish a rescue coordination centre in each search and rescue region.

2.3.3 Each Rescue Coordination Centre and, as appropriate, rescue subcentre, shall be staffed 24 hours a day by trained personnel proficient in the use of the language used for radiotelephony communications.

During a previous investigation in 2018, PNGASL air traffic control managers and supervisors informed the AIC investigators that the PNGASL room assigned for the RCC was not resourced, and the documentation required to efficiently and effectively conduct SAR operations was not up-to-date. The SAR coordination operation was conducted at the Port Moresby ATS Centre Supervisor's work station.

There was no designated RCC office with equipment and documentation to facilitate the conduct of RCC responsibilities. Air Traffic Services staff did not have that responsibility as a full-time role as required in *Annex 12, Paragraph 2.2.3, Standard*.

The RCC SAR operations did not meet the Standards of *ICAO Annex 12*.

The 2018 investigation found that funding for the establishment, operation, and maintenance of an *Annex 12 Standard* RCC was not being provided by the PNG Government although the provision was available in the *Civil Aviation Act* to the agency conducting RCC duties, to ensure its full functionality and to meet PNG's international obligations.

On the 9<sup>th</sup> of July 2018, the Minister for Civil Aviation delegated the responsibility for the establishment of a RCC to PNGASL on behalf of the State and directed PNGASL to operate and maintain the SAR RCC established under Section 8A (1) (b) and (c) of the *Civil Aviation Act 2000 (as Amended)*. With regards to the funding of the RCC, the Minister informed PNGASL that he would, in consultation with the Minister for Transport & Infrastructure make a submission to the National Executive Council (NEC). He further directed that for the time being, PNGASL was to bear the cost for the establishment of the RCC.

There is no evidence of a submission to the NEC, nor is there any evidence of consultation as above mentioned. Under Section 8A (2) of the *Civil Aviation Act 2000 (as Amended)*, funding provisions exist for the purpose of establishing, maintaining and operating an RCC, which the Minister is given the power to authorise when it may be necessary.

The *Appropriation (General Public Services Expenditure 2019) Act 2018* does not contain any funding appropriation for search and rescue operations.

The Minister for Civil Aviation, on the 13<sup>th</sup> of November 2018, exercising his power to make ordinary rules under Section 69 of the *Civil Aviation Act*, promulgated *Civil Aviation Rule (CAR) Part 176* which provides rules for the certification and operation of search and rescue service organisations.

The first official RCC coordinator was appointed on the 30<sup>th</sup> of July 2018 from within PNGASL. The officer did not meet any of the requirements of *ICAO Annex 12 (Search and Rescue)* to the *Convention on International Civil Aviation* and the *International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual*. At the time of the appointment, *CAR Part 176* did not exist. The officer subsequently completed an *Introduction to Search and Rescue* course with SAR Training Australia on the 21<sup>st</sup> of February 2019, and an *Aeronautical Search and Rescue Operations* training course with the Singapore Aviation Academy between 17<sup>th</sup> June and 2<sup>nd</sup> August 2019. At the time of issuing this *Interim Factual Report* the appointed RCC Coordinator does not meet the requirements of *CAR Part 176*.

The *Search and Rescue Manual* provided to the AIC investigation by PNGASL during the 2018 investigation was dated 5<sup>th</sup> October 2000. It pre-dated the establishment of PNGASL. Since the promulgation of the *SAR Manual* in 2000 there had been amendments to the *Civil Aviation Act 2000*, in 2010 and 2016, both of which directly related to SAR responsibilities. There had also been two amendments to *ICAO Annex 12*. The first in *July 2001 (Seventh Edition)* and the second in *July 2004 (Eighth Edition)*. A subsequent amendment to the Eighth Edition became effective on 16 July 2007 and covered Rescue Coordination Centre responsibilities.

The *SAR Manual* had not been amended since its promulgation on 5<sup>th</sup> October 2000. The *SAR Plan* has not been amended since 13<sup>th</sup> June 2003.

Following the *Ministers Directive* on 9<sup>th</sup> July 2018, PNGASL commenced amending the *SAR Manual* and it remains in the draft amendment process. These documents have remained outdated despite the fact that the Civil Aviation Authority (CAA) was restructured during the PNG Government's regulatory reform in 2007 which created the separate entities CAA, NAC, PNGASL from the former CAA.

At the time of the promulgation of *CAR Part 176* on 13<sup>th</sup> November 2018 and prior, CASA PNG did not have a qualified inspector who could carry out audits against *CAR Part 176*.

CASA PNG has informed the investigation that because PNGASL does not hold a *Search and Rescue Certificate* in accordance with *CAR Part 176*, CASA PNG has not conducted an audit with respect to *CAR Part 176*.

## **AIC comment**

The investigation is continuing and is examining and analysing organisational aspects, safety management systems, regulatory, audit and surveillance aspects, including audits relating to the *State Safety Program (SSP)*, search and rescue coordination and operation, and notifications.

The investigation will also include a detailed review of the ATC communications and aircraft recorded data, and flight operational and maintenance records as appropriate.

The investigation analysis and findings will be included in the final report.

## **Safety Action**

At the time of the issue of this *Interim Factual Report*, no safety action had been taken.

## **Recommendations**

At the time of the issue of this *Interim Factual Report*, no recommendations had been by the AIC.

## General Details

Date and time:	11 <sup>th</sup> August 2019, 01:24 UTC	
Occurrence category:	Accident	
Primary occurrence type:	Helicopter ditched in water.	
Location:	3.1 nautical miles North West of Baluma township, West New Britain Province, PNG	
	Latitude: 5 ° 30' 8.5" S.	Longitude: 150 ° 16' 3.1" E

## Crew details

Nationality:	New Zealand
Licence type:	PNG CPL H
Licence number:	P21634
Total hours:	6549.0
Total hours in Command:	6120.9
Total hours on type:	346.0

## Aircraft Details

Aircraft manufacturer and model:	Bell Helicopters – Textron; Bell 427
Registration:	P2-HSG
Serial number:	56066
Main Rotor blades manufacturer and model:	Bell Helicopters
Main Rotor blades 1 – 4 serial numbers:	A-590; A-577; A-591; and A-585 respectively

## Type of Operation, Injury and damage details

Type of operation:	Unscheduled VFR; Ferry	
Persons on board:	Crew: 1 (PIC)	Passengers: Nil
Injuries:	Crew: Serious	Passengers: Nil
Damage	Aircraft destroyed; tail boom separated from main fuselage; main rotor blades destroyed.	

## Engine Data

Engine type:	PW207D
Manufacturer:	Pratt & Whitney Canada
Model:	PW207D
<b>Engine number one (Left)</b>	
Serial number:	PCE – BF0157
Total Time since new:	989.10
Cycles since new:	1064
<b>Engine number two (Right)</b>	
Serial Number:	PCE – BF0158
Total Time since new:	989.10
Cycles since new:	1065