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ACCIDENT INVESTIGATION COMMISSION

MEDIA RELEASE

PNG AIC RELEASES FINAL REPORT INTO 28 SEPTEMBER 2018 AIR NIUGINI B737 ACCIDENT IN THE CHUUK LAGOON, FEDERATED STATES OF MICRONESIA.

The Chief Commissioner of the PNG Accident Investigation Commission (PNG AIC), Mr. Hubert Namani today released the Accident Investigation Commission's Final Report into the Air Niugini Boeing 737 accident at Chuuk, Federated States of Micronesia (FSM).

Mr. Namani said "on 28th September 2018, at 09:24am FSM local time, a Boeing 737 aircraft, registered P2-PXE, operated by Air Niugini Limited, was on a scheduled passenger flight number PX073, from Pohnpei to Chuuk, in the FSM when it impacted the water of the Chuuk Lagoon, about 1,500 ft (460m) short of the runway 04 threshold during the final landing approach.

"The surviving 12 crew members and 34 passengers exited the aircraft and were promptly rescued and brought to shore by locally operated boats and US Navy divers. There were six seriously injured passengers, and one passenger could not be located before the aircraft sank in about 30 metres of water and impacted the sea floor."

The report states that the missing passenger was located in the aircraft by local divers, three days after the accident. The Pathologist's report concluded that the passenger was not wearing a seat belt at the time of the impact, and suffered blunt force trauma head injuries. The Pathologist estimated that the passenger died within the first 3 minutes of receiving the traumatic head injuries.

Mr. Namani said "the FSM Government, as the State of Occurrence, initially commenced the investigation. During the first 4 months the AIC played a pivotal role directly assisting the FSM investigation, including obtaining and analysing evidence, and conducting the download, replay and analysis of data from the *Flight Data Recorder (FDR)* and information from the *Cockpit Voice Recorder (CVR)* in the AIC's Flight Recorder Laboratory in Port Moresby. The AIC used the state-of-the art *Memory Access Retrieval System* and latest generation *Flight Animation Software*.

"An Aircraft Maintenance Engineer occupied the cockpit jump seat and videoed the final approach on his iPhone. The video taken for recreational purposes predominantly showed the cockpit instruments and provided clear imagery of the cockpit environment and instruments not available from the *CVR* or *FDR*.

"With the benefit of the video, within the first few days of the accident the investigation teams from FSM, USA, and PNG knew what had happened. It took many more months of painstaking research and analysis of evidence, including recorded data and information from the FDR, CVR, and Enhanced Ground Proximity Warning System (EGPWS) and interview statements to establish how and why the accident happened.

"This research and analysis were assisted by highly qualified technical and academic expert investigators from the USA, and in the case of the investigation into the human factors aspects, experts from Australia and the USA provided invaluable assistance."

Mr Namani said, "on 14th February 2019, the FSM Government delegated the whole of the investigation to the PNG AIC in accordance with *Paragraph 5.1* of *ICAO Annex 13* to the *Convention on International Civil Aviation*. My Board, with the endorsement of the PNG Minister for Civil Aviation, accepted the delegation."

PNG is a Signatory State to the *Convention,* and *Annex 13* obligates the State accepting the delegation to conduct the investigation, including issuing the *Final Report* and the *Accident and Serious Incident Reporting Data*.

Mr. Namani added, "throughout the investigation the US National Transportation Safety Board team, supported by experts from the US Federal Aviation Administration, Boeing, and Honeywell assisted in the analysis of all the available evidence.

"The NTSB team facilitated the download of data from the *EGPWS* in the USA. The readout of the damaged *Automatic Flight Information Recording System* was conducted by the Transportation Safety Board of Canada."

The report found that the pilot in command intended to conduct an Area Navigation approach to runway 04 at Chuuk International Airport and briefed the copilot accordingly. The descent and approach were initially conducted in *Visual Meteorological Conditions*, but from 600 ft the aircraft was flown in Instrument Meteorological Conditions.

The recorded information from the *CVR* showed that a total of 13 *EGPWS* aural alerts (seven *"Glideslope"* and six *"Sink Rate"* and a *"100 ft"* advisory sounded after passing the *Minimum Descent Altitude*, between 364 ft and the impact point.

Mr. Namani said "The investigation observed that the flight crew disregarded the *EGPWS* alerts, and did not acknowledge the *"minimums"* and *"100 ft"* advisories or respond to the *EGPWS* aural alerts; a symptom of fixation and channelised attention."

He added, "according to the Human Factors experts, inattention, or decreased vigilance has been a contributor to operational errors, incidents, and accidents worldwide. Decreased vigilance manifests itself in several ways, which can be referred to as hazardous states of awareness.

"Both pilots were fixated on cues associated with control inputs for the landing approach, and subsequently, were not situationally aware and did not recognise the developing significant unsafe condition of an increasingly unstable final approach.

"The *Air Niugini Standard Operating Procedures Manual (SOPM)* instructs a non-flying support pilot to take control of the aircraft from the flying pilot and restore a safe flight condition when an unsafe condition continues to be uncorrected, in particular an unstable approach when the aircraft is in *IMC* and below 1,000ft. However, the copilot as the non-flying support pilot did not do so. The pilot in command did not carry out the required go-around at the *Minimum Descent Altitude*."

The report highlights that deviations from recommended practice and *SOPs* are a potential hazard, particularly during the approach and landing phase of flight, and increase the risk of approach and landing accidents. It also highlights that crew coordination is less than effective if crew members do not work as an integrated team.

The report includes a number of recommendations made by the Commission, with the intention of enhancing the safety of flight.

Mr. Namani added "It is important to note that none of the safety concerns brought to the attention of Air Niugini caused the accident. However, in accordance with *International Standards*, identified safety deficiencies and concerns must be raised with the persons or organisations best placed to take safety action so as to impede recurrence of similar events.

"Air Niugini Limited took prompt action to address all the AIC's identified safety concerns in an average time of 23 days from the date of issue by the AIC."

Mr. Namani said "the importance of the imagery obtained from the video taken by the engineer in the cockpit jump seat cannot be understated. It provided clear pictures in real time of the cockpit environment and instruments that were not available from the *CVR* or *FDR.* Video imagery has the potential to save countless hours of investigation activity and greatly reduce the cost of investigations.

"While the AIC accepts that PNG meets the Standards of ICAO with respect to recorded data and information, those ICAO Standards are global minimum Standards.

"Therefore, the AIC recommended that CASA PNG should conduct a *Notice of Proposed Rule Making* process with the aim of requiring cockpit imagery in aircraft for safety enhancement benefits in accident investigation, that would ensure PNG was working to a higher level than the minimum Standard set by ICAO. Associated PNG legislation would ensure that cockpit imagery has the same legislative protections as the CVR. These protections are already in ICAO Annex 13 Standards.

"The AIC also recommended that Honeywell should ensure that EGPWS provide timely attention grabbing EGPWS aural and visual "warnings" that would require an immediate positive action by the pilots when encountering an excessive rate of descent at very low altitude. The AIC is continuing discussions with the NTSB, FAA, Honeywell and Boeing regarding research into this safety concern.

"I am making this report public today in accordance with PNG's international civil aviation obligations to make the *Final Report* publicly available as soon as possible after the completion of the investigation.

"The report is based on the investigation carried out by the AIC in accordance with the *Papua New Guinea Civil Aviation Act 2000 (as amended)*, *and Annex 13* to the *Convention on International Civil Aviation*. It contains factual information, analysis of that information, findings and contributing (causal) factors, other factors, safety actions, and safety recommendations."

Mr. Namani said "as with all AIC investigations, this investigation was independent of the providers of air services and aviation related services. It was also separate from judicial and administrative proceedings to apportion blame or liability.

"The report is based on evidence, and therefore fact-based statements in the report should not be interpreted as apportioning blame.

"The investigation team has shown strong leadership and strength of commitment to improving aviation safety on behalf of the Nation, and safety in PNG and the Region has been enhanced."

The *Report*, associated *Safety Recommendations* in full, and a video of the animation from the recorded data, which is an integral part of the Commission's *Report*, are available on the PNG AIC website; **www.aic.gov.pg**."

Hubert Namani, LLB
Chief Commissioner