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Safety recommendation: AIC 19-R13/18-1004

Addressed to: Civil Aviation Safety Authority of PNG

Date issued: 8 April 2019

Investigation link: AIC 18-1004

Action status: Issued

Introduction

On 28 September 2018, the Federated States of Micronesia, Department of Transportation, Communications and Infrastructure (DTC&I) was notified of the aircraft accident referenced in this safety recommendation. DTC&I commenced an investigation and deployed investigators to Chuuk and invited the Papua New Guinea Accident Investigation Commission (AIC) to join the investigation in the capacity of the State of Registry and also a State providing experts and facilities for the investigation.

The AIC team was comprised of an Accredited Representative and Technical Advisers. The US National Transportation Safety Board (NTSB) as the State of Manufacture of the aircraft and in response to FSM National Government's request for assistance also sent a team comprised of an Accredited Representative and Technical Advisers from the Federal Aviation Administration (FAA) and Boeing. Technical Advisers from the US National Weather Service are assisting the US Accredited Representative.

The Transportation Safety Board of Canada (TSBC) as the State of Manufacture of specific components appointed an Accredited Representative and Technical Advisers to download the data from the AFIRS.

Subsequently, on 14 February 2019, the FSM Government delegated the whole of the investigation to the PNG AIC in accordance with *Paragraph 5.1 of Annex 13 to the Convention on International Civil Aviation*. The PNG AIC accepted the delegation and appointed an investigator in charge to manage the investigation in accordance with the *PNG Civil Aviation Act 2000 (as amended)* and *Annex 13 to the Convention on International Civil Aviation*.

The PNG AIC investigation has identified a significant safety enhancement that if implemented would complement the data from FDR, CVR and EGPWS recorded data.

Occurrence

On Friday 28 September 2018, a Boeing 737-8BK aircraft, registered P2-PXE, was being operated by Air Niugini Limited, on a scheduled passenger flight from Pohnpei to Chuuk, Federated States of Micronesia.

At 23:17:19 UTC¹ (09:17:19 local time) the aircraft impacted the water of Chuuk Lagoon about 1,443 ft (440 m) short of the runway 04 threshold, during its approach to runway 04 at Chuuk International Airport. As the aircraft settled in the water, it turned clockwise through 210° and drifted 460 ft (140 m) south east of the runway 04 extended centreline, with the nose of the aircraft pointing about 265°.

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, Pacific/Chuuk Time is UTC + 10 hours.

There were 12 crew members and 35 passengers on board. Six passengers were seriously injured, and one passenger was fatally injured.

The 12 crew members and 34 passengers exited the aircraft and were promptly rescued and brought to shore by Chuuk State Government boats, Red Cross, Transco, and more than twenty privately-owned boats, and the U.S. Navy divers using an inflatable boat. Local divers located the fatally injured passenger in the aircraft 3 days after the accident.

Safety enhancement description

On 28 September 2018, a video recording taken by the jump seat occupant in the Boeing 737 at Chuuk, provided perhaps for the first time in history this type of information to support a major aircraft accident investigation involving a passenger airliner.

In addition to the flight recorders and the EGPWS data, the jump seat occupant used his smart phone to video the flight from 3,000 ft throughout the approach until impact with the water. The phone survived the accident and provided clear imagery of the cockpit environment and instruments.

This is the second time the PNG AIC has had the benefit of cockpit video imagery to complement the data from the other data recorders on board the aircraft.

On 20 September 2014, a Twin Otter aircraft registered P2-KSF crashed into the steep and heavily timbered slopes of Mt. Lawes in PNG while descending on approach to Port Moresby in instrument meteorological conditions. The operator had installed a video camera in the cockpit. The video provided irrefutable evidence to assist the investigation of the circumstances of the accident.

The image recording taken from the jump seat of the Boeing 737 during the approach to Chuuk was invaluable to the investigation process and enabled the PNG AIC to develop an extremely accurate and thorough sequence of events like never seen before and in a very short time. Knowing ‘what’ happened almost immediately and in exquisite detail using the flight data and cockpit voice recorders and the ‘image recording’ sets a new standard of investigation information that, while controversial, is long overdue.

Safety action is significantly compromised when there is controversy over the facts, which is often the case even with good quality FDR, CVR and EGPWS data. The imagery from the recording brought everything together in crystal clarity with irrefutable evidence.

Image recording has been readily available for many years and a Minimum Operational Performance Specification was developed by the international flight recording community through Euroace almost 20 years ago.

Despite relatively inexpensive video technology and the fact that it is now used in many professions, including police, ambulance, public road and rail transport in many countries, image recording remains elusive as a tool for aircraft accident investigators.

Section 8(1) (b) of the Civil Aviation Act 2000 (as amended) states:

The principal function of the Minister under this *Act* is to ensure that Papua New Guinea’s obligations under international civil aviation agreements are implemented.

ICAO Annex 13 Paragraph 5.12 (Standard) calls for the protection of airborne image recordings and transcripts from such recordings.


The introduction of a requirement for PNG registered aircraft to be equipped with a functioning cockpit image recorder should therefore come under the protection of PNG legislation as is the case for cockpit voice recordings.

Recommendation number AIC 19-R13/18-1004 to Civil Aviation Safety Authority of PNG

The PNG Accident Investigation Commission recommends that the Civil Aviation Safety Authority of PNG should draft *Civil Aviation Rule(s)* to require the fitment of image recorders in the cockpit of all *CAR Part 125* and *135* aircraft, and promulgate through the April 2019 *Notice of Proposed Rule Making (NPRM)* process.

Action requested

The PNG Accident Investigation Commission requests that the Civil Aviation Safety Authority of PNG provide a response to the PNG AIC within 90 days, but no later than 7 July 2019, and explain including with evidence how CASA PNG has addressed the safety enhancement recommendation identified in Safety Recommendation AIC 19-R13/18-1004.

A handwritten signature in black ink, appearing to read 'Hubert Namani', is written over a circular stamp or seal. The signature is fluid and cursive.

HUBERT NAMANI, LLB

Chief Commissioner

8 April 2019.

Civil Aviation Safety Authority of PNG response

On 21 June 2019, the Civil Aviation Safety Authority of PNG wrote to the Accident Investigation Commission stating in part:

The fitment of image recorders on Part 125 and Part 135 aircraft is not related to this accident and has no bearing whatsoever on this accident which involves a Part 121 aircraft.

Further, this is not an ICAO Standard and therefore cannot be justified for rule making. PNG *Civil Aviation Rules* have adequately transposed ICAO Annexes regarding Flight Recorder and Cockpit Voice Recorder requirements.

PNG Accident Investigation Commission (AIC) assessment of the Civil Aviation Safety Authority of PNG response

The AIC has reviewed the CASA PNG response. While the AIC recommendation may have been better targeted to *Part 121* aircraft but all aircraft in the listed categories are important in this regard. The thrust of the recommendation calling for a Notice of Proposed Rule Making for safety enhancement benefits in accident and incident investigation outweighs the argument that it is not an *ICAO Standard*.

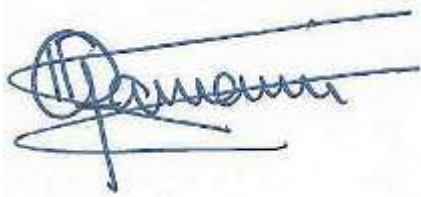
ICAO Standards are the minimum Standards. A State is not restricted and may exceed the *ICAO Standards*. In fact, ICAO encourages States to exceed the minimum Standards. *ICAO Annex 13* contemplates the use of cockpit image recordings in *Annex 13, Paragraph 5.12 (a)*, where protections are listed for accident and incident investigation records. Cockpit imagery falls under that protection.

The AIC therefore rejects the notion posed by CASA PNG and believes that CASA PNG should examine this subject further in the light of the compelling evidence of the benefits obtained in this investigation from the cockpit imagery which brought everything together in crystal clarity with irrefutable evidence that was not available from the FDR and CVR.

The AIC cites some of the numerous examples worldwide where cockpit imagery would have resolved all ambiguity and controversy and saved countless millions of US Dollars in investigation resources expended. Swissair 111, EgyptAir MS804, SilkAir 185, Germanwings 9525, are just a few examples.

CASA PNG has the sovereign right to exceed the minimum *ICAO Standards*.

However, on the basis of the CASA PNG response that this recommendation cannot be justified for rule making believing that the PNG CARs adequately meet international Standards with respect to flight recorder requirements, the AIC has assigned the CASA PNG response an *unsatisfactory rating*, and records the **Status of the AIC Recommendation: CLOSED RESPONSE NOT ACCEPTED.**

A handwritten signature in blue ink, appearing to read 'Hubert Namani', with a large circular flourish on the left side.

HUBERT NAMANI, LLB

Chief Commissioner

8 July 2019