



Aviation Short Investigation Final Report

No Gear Landing

EMB110, C6-KMC

**Lynden Pindling International Airport, New Providence, Bahamas
October 11th, 2019**

AAIA Aviation Occurrence Investigation

AO-19-000057

Final Report – April 6th 2020



The Aircraft Accident Investigation Authority (AAIA)

The Aircraft Accident Investigation Authority (AAIA) is the independent accident investigation authority under the Bahamas Ministry of Transport and Local Government charged with the responsibility of investigating all aviation accidents and incidents in the Bahamas.

The AAIA's function is to promote and improve safety and public confidence in the aviation industry through excellence in:

- Independent investigation of aviation accidents and other safety occurrences
- Safety data recording, analysis and research
- Fostering safety awareness, knowledge and action.

The AAIA does not investigate for the purpose of apportioning blame or to provide a means for determining 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 AAIA endeavors to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

The AAIA performs its functions in accordance with the provisions of the Bahamas Aircraft Accident Investigation Authority Act and Regulations 2019, International Civil Aviation Organization (ICAO) Annex 13 and, where applicable, relevant international agreements.

The Aircraft Accident Investigation Authority is mandated by the Ministry of Transport and Local Government to investigate air transportation accidents and incidents, determine probable causes of accidents and incidents, issue safety recommendations, study transportation safety issues and evaluate the safety effectiveness of agencies and stakeholders involved in air transportation. The objective of a safety investigation is to identify and reduce safety-related risk. AAIA investigations determine and communicate the safety factors related to the transport safety matter being investigated.

The AAIA makes public its findings and recommendations through accident reports, safety studies, special investigation reports, safety recommendations and safety alerts. Unless otherwise indicated, recommendations in this report are addressed to the regulatory authorities of the State having responsibility for the matters with which the recommendation is concerned. It is for those authorities to decide what action is taken. When the AAIA issues a safety recommendation, the person, organization or agency is required to provide a written response without delay. The response shall indicate whether the person, organization or agency accepts the recommendation, any reasons for not accepting part or all of the recommendation(s), and details of any proposed safety action(s) resulting from the recommendation(s) issued.

Official Copies of accident reports can be obtained by contacting:

Aircraft Accident Investigation Authority

2nd Floor, Manx Corporate Center

#45 West Bay Street

P. O. Box CB-11702

Nassau N. P., Bahamas

Tel: 1 (242) 397-5513 / 5509 / 5520

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Additional copies of the reports can be viewed on the AAIA's website at: <http://www.baaid.org> or requested by email: baaid@bahamas.gov.bs.

AIRCRAFT ACCIDENT INVESTIGATION AUTHORITY

Registered Owner: Pineapple Air Limited

Manufacturer: Embraer

Aircraft Type: EMB110 Bandeirante

Nationality: Bahamas

Registration: C6-KMC

Place of Accident: Lynden Pindling International Airport, Nassau, Bahamas

Date and Time: 11th October, 2019 (9:07 AM)

Notification: BCAA, NTSB, CENIPA

Investigating Authority: Aircraft Accident Investigation Authority

Investigator in Charge: Kendall Dorsett Jr.

Accredited Representatives: Daniel Barbosa Amancio (CENIPA)

Technical Advisors: Paulo Marcelo Ribeiro (Embraer)
Carlos Eduardo Bordignon Martinez (Embraer)

Releasing Authority: Aircraft Accident Investigation Authority

**Date of Final
Report Publication:** **April 6th 2020**

What Happened?

On 11th October, 2019 at approximately 9:07 AM Eastern Standard Time, (1307 UTC), Pineapple Air Ltd., aircraft C6-KMC (an EMB110 Bandierante) operating as flight PNP 983 landed at the Lynden Pindling International Airport (MYNN), Nassau, Bahamas without the use of the landing gears.

The aircraft departed Governors Harbour Airport (MYEM), Eleuthera, Bahamas with 11 souls on board.

According to the pilots, the flight into MYNN proceeded as normal, up until the point of the landing roll-out. The crew stated that there was an indication of “three green” which would indicate that the landing gears were down and locked. The crew further stated that the main landing gears touched down followed by the nose gear, which collapsed, then both main gears collapsed thereafter.

The aircraft travelled a distance of approximately 1,206 ft. from where it initially impacted the runway (based on pavement markings) before coming to rest. The majority of the aircraft remained on the paved, usable portion of runway 14. Damages were documented to both engines, propellers, lower engine nacelle, gear doors and bottom fuselage (forward and aft).

All occupants evacuated the aircraft immediately after it came to a stop. No injuries were reported. Emergency personnel, including the Airport Rescue and Firefighting Services responded to the scene to render assistance. At the time of the accident the pilot in command was identified as the pilot flying.



Crew Experience

Pilot

The pilot-in-command (male) of the aircraft was 44 years old at the time of the accident. He possessed a Commercial Pilot license issued (26th October 2015) by the Bahamas Civil Aviation Authority with airplane multi and single engine land and instrument ratings. The pilot amassed over 9,000 hours total flight time with 6,000 hours on type. He also possessed a valid Class 1 medical certificate with the limitation “must wear corrective lenses.” No medical waivers were attached.

First Officer (Second in command)

The First Officer (male) was 24 years old at the time of the accident. He possessed a Commercial Pilot License issued (22nd July 2016) by the Bahamas Civil Aviation Authority with Airplane multi and single engine land and instrument ratings. The first officer had accumulated over 1,300 hours of flight experience to date. He also possessed a valid Class 1 medical certificate with no limitations or waivers attached.

The Aircraft

The Embraer EMB 110 Bandeirante is a Brazilian made general purpose 15–21 passenger twinturboprop light transport aircraft designed by Embraer for military and civil use. C6-KMC was configured as a 15 passenger civilian aircraft.

The aircraft is powered by two Pratt & Whitney Canada PT6A-34 turboprops driving three blade constant speed, reversible Hartzell propellers.

This airplane is certified in the normal category. In the normal category all aerobatic maneuvers including spins are prohibited. The airplane is approved for day and night VFR/IFR operations when so equipped.

Airport Information

Lynden Pindling International Airport (MYNN) is situated on the island of New Providence with the center of the airport located at coordinates 25° 02' 20"N and 077° 27' 58"W at an elevation of 16 ft. above mean sea level. It serves as a port of entry aerodrome and is the main gateway into The Bahamas.

The aerodrome is a government owned facility operated by the Nassau Airport Development Company (NAD) that is serviced by two intersecting runways 14/32 (11,126 feet long x 150 feet wide) and 09/27, (8,273 feet long x 150 feet wide), both surfaced with asphalt.

Air traffic control services, in addition to customs and immigration processing and handling are provided on a 24hr basis. Radio navigation and landing aids for the aerodrome include a VOR/DME, identifier ZQA on frequency 112.700 MHz and an Instrument Landing System (ILS) RWY 14 on frequency 110.100 MHz.

Weather

METAR aviation weather report for the Lynden Pindling International Airport issued by the Bahamas Meteorological Department reported at 9:00 AM (1300 UTC) winds from 070 degrees at 07 knots with visibility of 8 NM. Clouds scattered at 2,000 ft. Temperature 28 degrees Celsius, dew point 24 degrees Celsius, altimeter setting 29.93 INS and barometric pressure 1013.8 HPA.

In the vicinity of the accident, the weather was reported as visual meteorological conditions. Weather was determined not to be a factor in this accident.

Investigation Findings

1. The aircraft was certified and equipped in accordance with existing Bahamas Civil Aviation General Regulations (CAGR) and approved procedures.
2. The aircraft had a valid certificate of airworthiness.
3. The aircraft was properly registered in the Commonwealth of The Bahamas.
4. Both required crewmembers held valid Commercial Pilot licenses with single and multi-engine land and instrument ratings.
5. At the time of the accident the pilot in command was documented as the pilot flying.
6. Both required crewmembers held valid First Class Medical Certificates with no limitations or waivers attached.
7. The aircraft was not equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR); neither was required by regulations.
8. The maintenance records indicated that the aircraft was equipped and maintained in accordance with existing Bahamas Civil Aviation General Regulations (CAGR) and approved procedures.
9. Weather was not a contributing factor in this occurrence.
10. Post-crash testing and analysis did not identify any deficiencies related to the aircraft's landing gears and associated systems that would prevent the gears from operating normally when selected.
11. Signature marks on the runway and damage documented on the aircraft indicates the propellers were the first component of the aircraft to make contact with the runway surface.
12. No tire marks attributed to the aircraft were observed prior to, during or after the runway contact was first made with the propellers

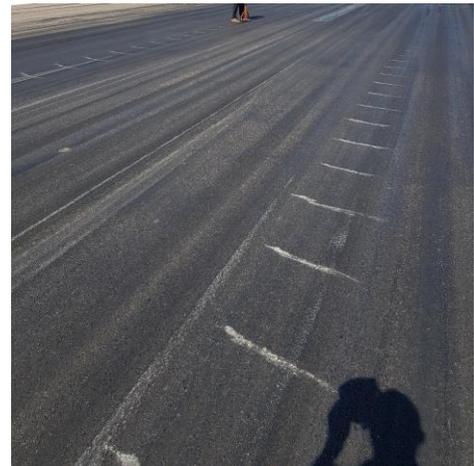
Analysis

The Maintenance personnel of the operator as well as the manufacturer of the aircraft (Embraer) assisted in the investigation. Maintenance inspections, evaluations and functional checks on the aircraft landing gears and its systems (hydraulic/electrical) were performed in accordance with the maintenance manual of the aircraft.

Operational checks of gear system were performed using an external hydraulic pressure supply to find any faults in its systems; complete gear cycle was achieved through the selector.

After compiling and cross referencing physical and technical data, no defect was identified that would serve as a contributory factor that would cause the gear to collapse on landing.

Post-accident investigation uncovered signature marks on the runway surface (propeller gouges and blue paint from the underside of the gear doors, underside of the fuselage and engine nacelle) and damages sustained to the lower fuselage and gear doors, which further indicated that the first parts of the aircraft to make contact with the runway were the propellers, followed by the gear door, engine nacelle and underside of the fuselage which is inconsistent with reports supplied by the crew that the gear collapsed after landing.



There were no tire marks attributed to the aircraft prior to, during or immediately after the propeller markings made in the runway surface.

Based on the evidence documented, the conclusion of the investigation team is that the aircraft made contact with the runway surface while the gear was not selected in the appropriate position for landing as required by their company's standard operating procedures and checklists.

Recommendation(s)

Based on evidence gathered during the onsite investigation and post-accident maintenance analysis and evaluation the AAIA made the following recommendations to the BCAA.

- Have both crewmember undergo a medical examination to determine their physiological capacity to operate this aircraft; also determine whether any substance medical or illicit were a part of their bodily system.
- Have both crewmember undergo a re-examination for their competence to operate this type aircraft

Safety Action

Whether or not the AAIA identifies safety issues in the course of an investigation, relevant organizations may proactively initiate safety action in order to reduce their safety risk.

BCAA Actions

Prior to the issuance of the final report the Bahamas Civil Aviation Authority (BCAA) took the following action:

- Both crew member were required to undergo medical examination to determine if there were any substances (medical or illicit) in their system that could render them unfit or impede their performance during their assigned duty period.
- One crewmember medical examination results were not satisfactory as questionable substances were found in his system. It was not determined the degree (if any) these substances may have affected his performance during his duty period.

Additional Actions undertaken by the BCAA

Based on the failure of the crewmember to pass the medical examination the BCAA took the following action:

- Suspended the crewmember Commercial Pilot license for a period of nine (9) months effective 12th October 2019 – 12th July 2020.
- The other crewmember that satisfactorily passed the medical examination was required to undergo the competency check which he satisfactorily passed on the 6th December 2019.

Safety Message

Every investigation undertaken by the AAIA is intended to have the effect of advancing the safety of aviation in some way, shape, or form. Usually, this would be accomplished via the issuance of safety recommendations that were developed in the aftermath or during the process of an accident/incident investigation.

However, the dynamic nature of aviation makes each accident scenario unique, and as such, each occurrence must be evaluated on its own merit and a determination made as to the method by which safety can be promoted.

As such, in this instance, the AAIA did not issue any associated safety recommendations other than the reevaluation of the crew, due to already existing civil aviation regulations and manufacturer processes and procedures relative to maintenance and operational standards.

Nonetheless, the AAIA would like to encourage airman to follow company standard operating procedures and or manufacturer procedures and checklist as appropriate. Also, there should be a heightened state of awareness and vigilance when operating during critical phases of flight (i.e. take-offs and landings).

Even though there is no 100% guarantee that taking such measures would totally eliminate the possibility of an accident/incident taking place, it does appreciably reduce that probability to a negligible level. Ultimately that remains the goal of aviation operations on a global level.

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. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.