



Air Accident Investigation Unit Ireland

FACTUAL REPORT

ACCIDENT

Colibri MB-2, EI-EWZ

ILAS Airfield, Taghmon, Co. Wexford

9 June 2017



**An Roinn Iompair
Turasóireachta agus Spóirt**

**Department of Transport,
Tourism and Sport**

FINAL REPORT

Foreword

This safety investigation is exclusively of a technical nature and the Final Report reflects the determination of the AAIU regarding the circumstances of this occurrence and its probable causes.

In accordance with the provisions of Annex 13¹ to the Convention on International Civil Aviation, Regulation (EU) No 996/2010² and Statutory Instrument No. 460 of 2009³, safety investigations are in no case concerned with apportioning blame or liability. They are independent of, separate from and without prejudice to any judicial or administrative proceedings to apportion blame or liability. The sole objective of this safety investigation and Final Report is the prevention of accidents and incidents.

Accordingly, it is inappropriate that AAIU Reports should be used to assign fault or blame or determine liability, since neither the safety investigation nor the reporting process has been undertaken for that purpose.

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¹ **Annex 13:** International Civil Aviation Organization (ICAO), Annex 13, Aircraft Accident and Incident Investigation.

² **Regulation (EU) No 996/2010** of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation.

³ **Statutory Instrument (SI) No. 460 of 2009:** Air Navigation (Notification and Investigation of Accidents, Serious Incidents and Incidents) Regulations 2009.



AAIU Report No: 2017-008
 State File No: IRL00917031
 Report Format: Factual Report
 Published: 11 September 2017

In accordance with Annex 13 to the Convention on International Civil Aviation, Regulation (EU) No 996/2010 and the provisions of SI 460 of 2009, the Chief Inspector of Air Accidents, on 9 June 2017, appointed Leo Murray as the Investigator-in-Charge (assisted by Kate Fitzgerald) to carry out an Investigation into this accident and prepare a Report.

Aircraft Type and Registration:	Colibri MB-2, EI-EWZ	
No. and Type of Engines:	1 x 1834 cc Volkswagen	
Aircraft Serial Number:	232	
Year of Manufacture:	2007	
Date and Time (UTC)⁴:	9 June 2017 @ 11.47 hrs	
Location:	ILAS (Irish Light Aviation Society) Airfield, Taghmon, Co. Wexford	
Type of Operation:	General Aviation	
Persons on Board:	Crew - 1	Passengers - Nil
Injuries:	Crew - Nil	
Nature of Damage:	Substantial	
Commander's Licence:	Private Pilot Licence (PPL) Aeroplane (A)	
Commander's Details:	Male, aged 73 years	
Commander's Flying Experience:	292 hours, of which 5 hours were on type	
Notification Source:	Report from Flying Instructor at ILAS Airfield	
Information Source:	AAIU Field Investigation and Pilot Report Form	

⁴ UTC: Co-ordinated Universal Time. All timings in this report are quoted in UTC; to obtain the local time add one hour.

SYNOPSIS

The Colibri MB-2 aircraft took off from ILAS Airfield, Taghmon, Co. Wexford for a local flight. Shortly after take-off the canopy of the aircraft opened unexpectedly. The Pilot, who was the sole occupant, managed to close the canopy but was unable to lock it shut. Whilst holding the canopy closed with one hand, the Pilot completed a circuit and approach back to ILAS Airfield. During the final approach the aircraft flared slightly too high, followed by a hard landing. The aircraft sustained damage to both main wheels, the propeller and the left wing. The Pilot reported no injuries.

NOTIFICATION

The Inspector on Call was notified of the accident by a Flying Instructor at ILAS Airfield.

1. FACTUAL INFORMATION

1.1 History of the Flight

Just prior to take-off at approximately 11.45 hrs, the Pilot carried out pre-flight checks, including a *'canopy locked check'*. He then carried out a normal take-off and when passing 300 feet (ft), the canopy of the aircraft unexpectedly opened. The Pilot was able to pull the canopy closed but could not lock it shut, requiring him to exert sustained manual pressure on it. Whilst holding the canopy shut with his right hand the Pilot continued to fly the aircraft using his left hand. In order to land as quickly as possible he climbed to 1,000 ft AGL⁵ and completed a standard circuit for Runway (RWY) 18 at ILAS airfield.

With only one hand available to operate the stick and throttle, control of the aircraft was difficult. The Pilot stated that the aircraft crossed the threshold of RWY 18, and in his estimation *'flared slightly too high (5 ft approx.)'*. The subsequent loss of airspeed resulted in a hard landing which caused the left wheel to become detached from the aircraft. Approximately 7 metres (m) after the aircraft first made contact with the runway the propeller impacted the ground, breaking both propeller blades. The aircraft then swivelled approximately 120° in an anti-clockwise direction before coming to rest (**Photo No. 1**).



Photo No. 1: EI-EWZ Final Resting Position

⁵ AGL: Above Ground Level



1.2 Field Investigation

Two Inspectors from the AAIU travelled to ILAS Airfield shortly after the accident. The landing site and the aircraft were inspected. The canopy locking mechanism was found to be fully functional. The locking mechanism is shown in **Photos No. 2 and 3**.



Photos No. 2 and 3: Detail of Canopy Locking Mechanism

The Pilot provided the Investigation with a full account of the event. During his account he showed the AAIU Inspectors his pre-flight checklist and stated that he had carried out the full checklist, including a '*canopy locked check*' before he commenced the flight.

1.3 Airfield Information

ILAS Airfield is 2 Nautical Miles (NM) southwest of Taghmon, Co. Wexford. The grass landing strip which is 600 m long, is designated RWY 18 when approached from the south and RWY 36 when approached from the north.

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1.4 Damage to Aircraft

The aircraft sustained significant damage shown in **Photo No. 4** which included:

- Two broken propeller blades
- Separation of the left wheel from undercarriage leg
- Damage to left wheel shock absorber
- Damage to right wheel shock absorber
- Left wing rib cracked at joint



Photo No. 4: Damage to EI-EWZ

1.5 Pilot Information

The Pilot held a PPL(A) with a Single Engine Piston (Land) rating issued by the Irish Aviation Authority (IAA) on the 5 November 2014. The Pilot also held a Class 2 Medical Certificate issued on the 4 July 2016 and was valid until 9 July 2017.

1.6 Aircraft Information

EI-EWZ was a Colibri MB-2, a single seat, sports aircraft, powered by one Volkswagen engine. It had an all wooden framework with plywood fuselage and fabric covered wings. It was amateur built by the Pilot from plans provided by Colibri and was first flown on the 26 July 2012. At the time of the occurrence the aircraft had an IAA Permit to Fly issued on 1 February 2017 which was valid until 31 January 2018.

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1.7 Meteorological Conditions

The Pilot stated that the meteorological conditions at the time of the occurrence were benign. The temperature was 16 degrees Celsius (°C) with scattered cloud, visibility of 10 kilometres (km) or more and a 6 knot (kt) wind from the southwest. Similar weather conditions were observed by the Inspectors when they arrived at the accident site approximately 3 hours later.

2. AAIU COMMENT

Unexpected opening of a cockpit canopy in flight can result in the loss of an aircraft due to the 'startle effect'⁶ on the pilot and subsequent control difficulties. In this case the Pilot demonstrated good flying skills maintaining steady flight and positioning for landing. Control challenges resulted in a hard landing causing significant damage to the aircraft but no injuries to the Pilot.

⁶ **Startle Effect** is defined as an uncontrollable, automatic reflex, raised heart rate, blood pressure etc., that is elicited by exposure to a sudden, intense event that violates a pilot's expectations (April 2015, FAA circular 120-111, 'Upset Prevention and Recovery Training', Federal Aviation Administration).
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Both the Pilot and aircraft were appropriately licensed for the flight. There was no evidence or report of a pre-existing mechanical problem with the aircraft, and on inspection the canopy locking mechanism appeared to be fully functional. The Pilot is currently undertaking repairs to the aircraft and has confirmed to the Investigation that the canopy locking mechanism will be modified. Any work on the aircraft will be subject to approval by an ILAS inspector.

SAFETY RECOMMENDATIONS

This investigation does not sustain any safety recommendations.

- END -

In accordance with Annex 13 to the Convention on International Civil Aviation, Regulation (EU) No. 996/2010, and Statutory Instrument No. 460 of 2009, Air Navigation (Notification and Investigation of Accidents, Serious Incidents and Incidents) Regulation, 2009, the sole purpose of this investigation is to prevent aviation accidents and serious incidents. It is not the purpose of any such investigation and the associated investigation report to apportion blame or liability.

A safety recommendation shall in no case create a presumption of blame or liability for an occurrence.

Produced by the Air Accident Investigation Unit

AAIU Reports are available on the Unit website at www.aaiu.ie



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