



Air Accident Investigation Unit Ireland

PRELIMINARY REPORT

**ACCIDENT
BRM Land Africa, EI-EOH
Near Ballina, Co. Mayo
4 May 2018**



An Roinn Iompair
Turasóireachta agus Spóirt
Department of Transport,
Tourism and Sport

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.



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This Investigation is conducted in accordance with Annex 13 to the Convention on International Civil Aviation, Regulation (EU) No 996/2010 and the provisions of SI No. 460 of 2009. This Preliminary Report contains information, as known at this time, and does not contain analysis or conclusions. This information is therefore subject to change, and may contain errors; any errors in this Report will be corrected in the Final Report. The sole purpose of this Investigation is the prevention of aviation accidents and incidents. It is not the purpose of this Investigation to apportion blame or liability.

AIRCRAFT INFORMATION

Aircraft Manufacturer:	BRM Construções Aeronáuticas
Model:	Land Africa
State of Manufacture:	Portugal
Registration:	EI-EOH
State of Registry:	Ireland
Serial Number:	0162/912ULS/10-LA
Year of Manufacture:	2010

TYPE OF OPERATION:	General Aviation
DATE / TIME (UTC) ⁴ :	4 May 2018 @ 17.14 hrs
LOCATION / POSITION:	Approximately 3 nm SE of Ballina, Co. Mayo
PERSONS ON BOARD:	Crew - 1 Passengers - Nil
INJURIES:	Crew - 1 (Fatal) Passengers - Nil
DAMAGE:	Aircraft destroyed
INVESTIGATOR-IN-CHARGE:	Howard Hughes

⁴ UTC: Co-ordinated Universal Time. All timings in this report are quoted in UTC; Local time was UTC + 1 hour.

1. NOTIFICATION AND RESPONSE

The emergency services were notified by a '999' telephone call from a member of the public. The AAIU on-call duty Inspector was notified by An Garda Síochána at 17.42 hrs. Three Inspectors of Air Accidents deployed to the accident site to conduct an initial site examination. Thereafter, the accident site was secured overnight by An Garda Síochána. The Inspectors returned to the site the following morning to conduct a full site examination and oversee the removal of the aircraft wreckage to the AAIU's secure wreckage facility at Gormanston, Co. Meath.

The Investigation obtained data from a number of sources, including witness statements, a recording of ATC radar returns, data extracted from a GPS navigation device installed in the cockpit, and video data recovered from a camera that had been fitted to the aircraft. The camera recorded the majority of the flight.

2. THE OCCURRENCE

2.1 History of Flight

The microlight aircraft departed Lough Conn Airfield, Co. Mayo at approximately 16.30 hrs for a local flight. The aircraft initially carried out a left-hand circuit and a touch-and-go⁵ at the airfield. It then departed the area in an easterly direction towards Tobercurry, Co. Sligo. The aircraft arrived overhead a point approximately two nautical miles (nm) north of Tobercurry at 16.55 hrs, where it performed a number of orbits and a low pass over an area of open ground. The aircraft then climbed up to 2,000 ft and took up a westerly course towards Ballina, Co. Mayo. Once clear of the Slieve Gamph/Ox Mountain range the aircraft descended to 1,000 ft, and took up a south-westerly course. Shortly after this, at approximately 17.14 hrs, the aircraft entered a left-hand descending turn and impacted terrain. The pilot was fatally injured. The aircraft was destroyed. There was no fire.

2.2 The Aircraft

EI-EOH was a factory-built microlight aircraft of all-metal construction (**Photo No. 1**). It had a strut-braced high-wing and an enclosed cockpit with two seats, in a side-by-side configuration. It was equipped with a fixed tricycle landing gear and a Rotax 912ULS four-stroke engine.



Photo No. 1: The accident aircraft (file photo)

⁵ **Touch-and-go:** This involves landing on a runway and taking off again without coming to a full stop.



3. ACCIDENT SITE

3.1 General

The accident site was located in an agricultural field approximately 3 nm south-east of Ballina, Co. Mayo.

The impact site was very compact and contained all major parts of the aircraft. The damage to the aircraft and the ground marks indicate that at impact the aircraft was in a near vertical, nose-down attitude, and that the left wing impacted the ground first.

3.2 Wreckage Examination

Initial examination of the wreckage did not reveal any mechanical failure that would have affected controllability.

3.3 Witness Statements

Witness statements indicated that the aircraft was flying normally prior to the event, and that the engine sounded normal.

4. RECORDED DATA

4.1 Camera Equipment

During the initial examination of the accident site, three compact video cameras were found, each containing a micro SD⁶ memory card. Two of the cameras were found in soft camera bags, and were not mounted on the aircraft during the subject flight. A third camera was located within the wreckage of the cockpit area of the aircraft. All cameras and their micro SD cards were secured and transported to the AAIU for further examination.

The SD cards of the un-mounted cameras were examined and found to contain no relevant data. Examination of the SD card of the third camera indicated that the camera had recorded data from the accident flight, in four files. Three of these files had been written to the SD card correctly and were viewable. The fourth file was interrupted during the recording process due to the accident sequence, and was not readily viewable. The video from the fourth file was subsequently recovered at the AAIU laboratories, Dublin.

The obtained image data covered the period from just before take-off until approximately two seconds before impact. It showed the Pilot operating the aircraft normally until approximately 27 seconds before the recording ends. The video showed the commencement of a left bank from straight and level flight. The Pilot's head was observed to slump forward and his eyes appeared to be closed in a manner that suggested incapacitation. The aircraft continued rolling to the left and commenced a descent towards the ground, without any apparent corrective action by the pilot. The recording ended just prior to impact.

⁶ SD: Secure Digital

The associated sound data for the last seven minutes and 48 seconds of recording was found to be corrupted, probably due to interruption in power supply during the impact sequence. The SD card was taken to the UK by the Investigation for examination at facilities of the UK AAIB,⁷ where sound data was extracted. Further work continues in order to merge the sound and picture data.

4.2 On Board Navigation Device

A Garmin GPSMap 296 GPS Unit was recovered from the aircraft. It was found in a 'powered on' state. The unit was powered off at the scene, secured and transported to the AAIU laboratories for further examination. When examined it was found that data logging was enabled, and a successful download of position and altitude data was made. The Investigation was able to recreate the flight path of the aircraft from the period prior to the touch-and-go, until just before the accident.

4.3 Radar Data

The Air Traffic Control radar data for the period leading up to the time of the accident was quarantined and retained by the Station Manager at Shannon Air Traffic Services for analysis by the Investigation. The aircraft was equipped with a transponder and the radar data obtained showed a secondary radar return with a conspicuity code 7000⁸ painting in the area where the aircraft flew on the date and time in question. The altitude and speed data from the radar returns were consistent with those obtained from the GPS unit.

5. WEATHER INFORMATION

Met Éireann, the Irish Meteorological service, provided the Investigation with an aftercast for the Ballina area valid between 16.00 and 18.00 hrs on 4 May 2018. The aftercast reported surface winds from a southerly direction at 10 - 15 kts, the wind at 2,000 ft from a southerly direction at 20 kts, an outside air temperature of 14 degrees Celsius. The barometric pressure at mean sea level was 1020 hectoPascals. There was no precipitation, and cloud at Ireland West Airport Knock (approximately 14 nm south-east of the accident site) was reported as scattered to broken at between 1,800 and 2,500 ft.

6. FURTHER INVESTIGATION

The Investigation will consider a number of factors including but not limited to:

- Pilot incapacitation
- Licensing and medical details
- Analysis of the recorded data and recovered wreckage.

The Investigation is on-going and a Final Report will be published in due course.

- END -

⁷ AAIB: Air Accidents Investigation Branch.

⁸ Flights under visual flight rules use the 7000 transponder code to assist in identification by ATC.

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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