



Air Accident Investigation Unit Ireland

FACTUAL REPORT

ACCIDENT

**BRM Land Africa, EI-FMO
Limetree Airfield, Co. Laois**

24 May 2017





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.

Extracts from this Report may be published providing that the source is acknowledged, the material is accurately reproduced and that it is not used in a derogatory or misleading context.

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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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 24 May 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:	BRM Land Africa, EI-FMO	
No. and Type of Engines:	1 x Rotax 912ULS	
Aircraft Serial Number:	06-00014	
Year of Manufacture:	2005	
Date and Time (UTC)⁴:	24 May 2017 @ 13.40 hrs	
Location:	Limetree Airfield, Co. Laois	
Type of Operation:	General Aviation	
Persons on Board:	Crew - 1	Passengers - Nil
Injuries:	Crew - Nil	Passengers - Nil
Nature of Damage:	Substantial	
Commander's Licence:	Private Pilot Licence (PPL) Microlight (M)	
Commander's Details:	Male, aged 39 years	
Commander's Flying Experience:	1,160 hours, of which 158 were on type	
Notification Source:	Pilot	
Information Source:	AAIU Field Investigation and AAIU 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 Pilot of a BRM Land Africa was conducting local circuits at Limetree Airfield, Co. Laois. On the third circuit, during the landing flare to Runway (RWY) 19, the aircraft suddenly lost lift. The Pilot attempted to correct this by increasing the pitch attitude, but the aircraft landed firmly on the nose wheel. The nose wheel and fork separated from the aircraft. The propeller then impacted the ground sustaining significant damage. The Pilot was uninjured.

NOTIFICATION

The AAIU was notified shortly after the accident by the Pilot of the aircraft.

1. FACTUAL INFORMATION

1.1 History of the Flight

The Pilot departed from Limetree Airfield in EI-FMO at 13.10 hrs with the intention of conducting circuits. On the third circuit, the Pilot was making his final approach to RWY 19 when the aircraft 'suddenly sank' during the landing flare. The nose wheel impacted the ground, causing its mounting fork to bend rearwards and break away; this allowed the propeller to contact the ground and sustain damage to all three blades. During the roll-out the Pilot shut down the engine and the aircraft came to a stop after approximately 10 metres (m).

3 1.2 Field Investigation

Two Inspectors from the AAIU travelled to the Limetree Airfield following the accident. The impact site and the aircraft, which had been recovered to a hangar, were inspected. The Pilot facilitated the Investigation with a full account of the event. During this account, the Pilot described thermal activity which he believed affected the aircraft during the landing flare.

1.3 Damage to aircraft

The aircraft sustained substantial damage which included:

- The nose wheel and mounting frame were bent rearwards and separated from aircraft;
- One broken propeller blade with a significant portion separated;
- One cracked propeller blade;
- Damage to the leading edge of the third propeller blade.

A detailed inspection of the engine was not carried out, but it is deemed likely that the engine suffered shock load damage when the propeller impacted the ground.

The aircraft was recovered to a local hangar for inspection by the AAIU. **Photo No. 1** shows the propeller blade damage.



Photo No. 1: Propeller blade damage

1.4 Pilot Information

The Pilot held a PPL(M) which was issued by the Irish Aviation Authority (IAA) on the 21 February 2011 and was valid until 28 March 2021. The Pilot also held a Class 2 medical certificate, valid until 21 February 2019.

1.5 The Aircraft

EI-FMO, a BRM Land Africa (**Photo No. 2**) was owned by a local flying club and based at Limetree Airfield, Co. Laois. The aircraft is of all metal construction, featuring a strut-braced high wing with accommodation for two occupants in a side-by-side configuration. The aircraft incorporates a high-lift wing design with flaperons⁵ and leading edge slots⁶. This gives the aircraft Short Take-Off and Landing (STOL) capabilities.



Figure No. 2: EI-FMO after recovery to hangar

EI-FMO was manufactured in 2005 and was first registered in Ireland on 23 November 2015. The aircraft was issued with an IAA Permit-to-Fly with an expiry date of 9 December 2017.

⁵ **Flaperon:** A control surface located on an aircraft wing functioning both as a flap to increase lift, and as an aileron to control aircraft roll.

⁶ **Leading Edge Slot:** A fixed span-wise opening in the forward edge of a wing which reduces the stall speed of the wing.

1.6 Meteorological Conditions

The Aviation Services Division of Met Éireann provided the Investigation with an aftercast⁷ for Limetree Airfield at the time of the accident. The aftercast which is shown in **Table No. 1** reported benign conditions at the time of the accident stating that, *'High pressure centred over West Wales dominated Ireland's weather. Conditions were dry and settled with slack airflow and variable amounts of shallow cumuloform or stratified cloud'*.

Wind:	Surface:	Variable or generally southwesterly 5 knots (kt)
	2000 feet:	210 degrees at 10 kt
Visibility:	12-20 kilometres (km)	
Weather:	No significant weather	
Cloud:	Typically few or scattered at 1,500 feet (ft), Broken at 2,000 ft with a risk of broken at 1,200-1,500 ft	
Surface Temp/Dew Pt:	Circa 19/15 degrees Celsius	
MSL Pressure:	1026 hectoPascals (hPa)	
Freezing Level:	>10,000 ft	
Other Comments:	No warnings of hazardous phenomena were in operation for the time in question	

Table No. 1: Met Éireann Aftercast

2. AAIU COMMENT

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Both the aircraft and the Pilot were appropriately licenced for the flight. There was no evidence or report of a pre-existing mechanical problem with the aircraft. In his statement, the Pilot referred to the presence of thermal effects immediately preceding the accident which he believed affected the handling of the aircraft during the landing flare.

3. SAFETY RECOMMENDATIONS

This investigation does not sustain any safety recommendations.

- END -

⁷ **Aftercast:** A historic report of the weather in a specific location using measured data.
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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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