



# **Air Accident Investigation Unit Ireland**

**SECOND INTERIM STATEMENT**

**ACCIDENT  
BRM Aero, Bristell NG 5, G-OJCS  
Near Belan, Co. Kildare**

**13 June 2019**



**An Roinn Iompair**  
Department of Transport

## SECOND INTERIM STATEMENT

### Foreword

This Safety Investigation is exclusively of a technical nature and this Second Interim Statement details the progress of the Investigation.

In accordance with the provisions of Annex 13<sup>1</sup> to the Convention on International Civil Aviation, Regulation (EU) No 996/2010<sup>2</sup> and Statutory Instrument (SI) No. 460 of 2009<sup>3</sup>, 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 a safety investigation is the prevention of accidents and incidents.

Accordingly, AAIU Reports or Statements should not 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 Second Interim Statement 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.

This Second Interim Statement is based on information currently known to the Investigation and may contain errors. Any errors in this Interim Statement will be corrected in the Final Report.

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

<sup>2</sup> **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.

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



## SECOND INTERIM STATEMENT

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Accident to BRM Aero, Bristell NG5, G-OJCS, near Belan, Co. Kildare, Ireland, on 13 June 2019.

### 1 INTRODUCTION

G-OJCS, a Bristell NG5 aircraft, had been purchased by a syndicate of three pilots. It was delivered to Ireland on 24 March 2019 by a UK pilot who was involved in the sale of the aircraft to the syndicate. The syndicate had decided that in order to best familiarise themselves with their new aircraft they would arrange for an acquaintance, a pilot with 2,735 hours flying experience, who held an instructor's rating, to fly in the aircraft with each of them, over the months following the purchase. On the accident flight the persons on board the aircraft were one of the syndicate members (seated in the left seat), and their acquaintance, (who was seated in the right seat).

The aircraft took off from Runway (RWY) 29 at Kilrush Airfield (EIKH), Co. Kildare, at 18.02 hrs UTC<sup>4</sup>, and was expected to land back at EIKH upon completion of the flight. The aircraft occupants' families became concerned when the aircraft had not returned, and contact with An Garda Síochána was made that evening. The aircraft wreckage was located by the Dublin-based Search and Rescue helicopter (R116) at 03.29 hrs the following morning.

Two Inspectors of Air Accidents deployed to the accident site and an investigation was commenced. As per International Convention, EU Regulation and domestic legislation relating to air accident investigation, if the final report into an accident investigation cannot be made public within 12 months, the Air Accident Investigation Unit shall release an Interim Statement at least at each anniversary of the accident or serious incident, detailing the progress of the Investigation and any safety issues raised.

### 2 PROGRESS REPORT

#### 2.1 General

The purpose of this Second Interim Statement is to detail the progress of the Investigation. For completeness, it should be read in conjunction with the Preliminary Report (AAIU [Report No: 2019-008](#)), which was issued on 18 July 2019, and the First Interim Statement (AAIU [Report No: 2020-008](#)), which was issued on 17 June 2020, both of which set out factual information known at that time.

<sup>4</sup> UTC: Co-ordinated Universal Time. All timings in this Report are UTC; Local time was UTC + 1 hour.

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In accordance with ICAO Annex 13, a number of agencies, both national and international are providing assistance to the Investigation, including: the Irish Aviation Authority (IAA); the Air Accidents Investigation Branch (AAIB) of the United Kingdom (UK); the UK Civil Aviation Authority (CAA); the UK Light Aircraft Association (UK LAA); the Aircraft/Kit Manufacturer (Czech Republic); the Czech Republic Air Accidents Investigation Institute (UZPLN); the Light Aircraft Association of the Czech Republic (LAA CR); and the Air Transport Safety Board, Australia (ATSB).

Progress on the Investigation has been slower than anticipated due to COVID-19 restrictions. Work on the preparation of a Draft Final Report is at an advanced stage. Once finalised, the Draft Final Report will be circulated, in confidence, to interested parties, prior to the publication of a Final Report.

### 2.2 Purpose of the Flight

The purpose of the flight was to familiarise one of the new owners with the aircraft. During the flight two stall exercises were carried out. Both stall exercises were commenced from an altitude of approximately 3,300 ft. During attempted recovery from the second stall, the aircraft departed from controlled flight and commenced a rapid descent, during which the aircraft entered a flat spin. The aircraft impacted the ground in an agricultural grass field, approximately 5 NM south of EIKH, near Belan, Co. Kildare. Both occupants were fatally injured. The aircraft was destroyed. There was no fire.

### 2.3 Wreckage Examination

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Examination of the aircraft wreckage at the accident site, and subsequently at the AAIU wreckage facility, at Gormanston, Co. Meath has been completed. This has shown that all parts of the aircraft structure and all components were present at the accident site. All flight control surfaces and their associated linkages were located on the aircraft, and control continuity was confirmed during examination. Engine control continuity was also confirmed. Examination of the wreckage indicates that the aircraft impacted the ground whilst rotating in a counter-clockwise flat spin<sup>5</sup>.

The aircraft exhibited significant distortion due to large deceleration forces on impact.

### 2.4 Recorded Data

Analysis of recorded data retrieved from electronic devices on the aircraft has been completed. Assistance with analysis of one of the devices was provided by the UK AAIB and the Original Equipment Manufacturer of the device. The data has confirmed that the aircraft performed two straight and level stall exercises<sup>6</sup>. Following the second stall exercise, control of the aircraft was lost.

A more detailed analysis of the recorded data will be presented in the Final Report.

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<sup>5</sup> **Flat Spin:** A spinning, descending motion of an aircraft where the axis of rotation is close to the aircraft's yaw axis and centre of gravity, with aircraft pitch and wing attitude close to horizontal.

<sup>6</sup> During a straight and level stall exercise the aircraft maintains a constant altitude, with its wings level, at a reduced engine power. To maintain altitude the aircraft pitch must be gradually increased, until the angle of attack of the wing reaches the stall angle.



## 2.5 Aircraft Weight and Balance Documentation

The AAIU Investigation determined that the moment arm<sup>7</sup> for a pilot and passenger seated in an NG 5 aircraft was longer than that specified in the weight and balance documentation available at the time of the subject accident.

The Aircraft/Kit Manufacturer and the UK LAA were advised of this finding on 25 June 2020. There were no other NG 5 aircraft in Ireland. Consequently, the Investigation requested that weight and balance measurements be carried out on a number of NG 5 aircraft in the UK. This was conducted by an independent agency specialising in aircraft weighing. Due to travel restrictions as a result of COVID-19, this process was overseen by the UK AAIB, on behalf of the AAIU. A UK LAA inspector was also present, and assisted the UK AAIB during the weighing process.

This process confirmed that the moment arm for a pilot and passenger seated in an NG 5 aircraft was longer than that specified in the weight and balance documentation provided at the time of the subject accident.

### 2.5.1 Action taken by the UK LAA

Following the weight and balance measurements carried out in the UK, on behalf of the AAIU Investigation, the UK LAA elected to adopt a revised figure of 750 mm aft of datum for a pilot and passenger, on an NG5 aircraft, instead of the figure of 600 mm specified in the weight and balance documentation available at the time.

This information was made available to owners and pilots of NG 5 aircraft in the UK through the issuing of an Airworthiness Information Leaflet (AIL), ('LAA/MOD/385/011 Issue 1', issued on 17 July 2020) and an Airworthiness Alert, ('LAA/AWA/20/18', issued on 20 July 2020), advising of a change in the pilot and passenger moment arm measurement to be used in pre-flight weight and balance calculations, '*whilst further investigations are being carried out to determine a more accurate moment arm for a pilot and passenger*'.

### 2.5.2 Action taken by the Aircraft/Kit Manufacturer

The Investigation reviewed weight and balance documentation, extant at the time of the subject accident, for NG 5 aircraft variants. These documents specified a moment arm for persons seated in NG 5 aircraft to be 0.6 m (600 mm) aft of datum. The datum was specified as the leading edge of wing rib number four.

Following the weight and balance measurements carried out in the UK on behalf of the AAIU Investigation, the Aircraft/Kit Manufacturer issued a bulletin (Bulletin Number: ALL-SA-0-0-0-0001-2020) on 7 August 2020, titled '*Change of crew arm for aeroplane C.G. calculation*'. The Aircraft/Kit Manufacturer also issued revisions to the Weight and Balance sections of the Aircraft Operating Instructions (AOI), also referred to as the Pilot Operating Handbook (POH), for two NG5 variants. These amendments were dated August 2020 and titled '*BRLW-AOI-AU\_Ra*', and '*BRSW-AOI-AU\_Ra*'.

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<sup>7</sup> The distance of a load (or weight) from a datum point is known as its '*arm*' sometimes referred to as its moment arm.

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The revised weight and balance documents incorporated an increase in the moment arm for persons seated in NG 5 aircraft, and a change to the weight and balance datum point. The increase in the moment arm for a pilot and passenger specified in the Aircraft/Kit Manufacturer's revised weight and balance documents is of a similar order of magnitude to that adopted by the UK LAA.

### **3 FINAL REPORT**

The Investigation is ongoing and a Final Report will be published in due course.

- 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](http://www.aaiu.ie)



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