



# Air Accident Investigation Unit Ireland

**FACTUAL REPORT**

**ACCIDENT**

**Czech Aircraft Works**

**CZAW Sportcruiser, EI-EDJ**

**Fethard Airfield, Co. Tipperary**

**28 December 2014**



**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 13<sup>1</sup> to the Convention on International Civil Aviation, Regulation (EU) No 996/2010<sup>2</sup> and Statutory Instrument 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 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.

---

<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.



AAIU Report No: 2015 - 004  
State File No: IRL00914110  
Report Format: Factual Report  
Published: 26 March 2015

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 28 December 2014, appointed Mr John Owens as the Investigator-in-Charge, assisted by Mr Howard Hughes, an Inspector of Air Accidents, to carry out an investigation into this Accident and prepare a Report.

<b>Aircraft Type and Registration:</b>	CZAW Sportcruiser, EI-EDJ	
<b>No. and Type of Engines:</b>	1 x Rotax 912 ULS	
<b>Aircraft Serial Number:</b>	700796	
<b>Year of Manufacture:</b>	2008	
<b>Date and Time (UTC)<sup>4</sup>:</b>	28 December 2014 @ 14.30 hrs	
<b>Location:</b>	Fethard Airfield, Co Tipperary	
<b>Type of Operation:</b>	General Aviation	
<b>Persons on Board:</b>	Pilot - 1	Passengers - 1
<b>Injuries:</b>	Pilot - 0	Passengers - 0
<b>Nature of Damage:</b>	Nose gear leg fractured, damage to propeller and engine cowling	
<b>Commander's Licence:</b>	PPL (A) <sup>5</sup>	
<b>Commander's Details:</b>	Male, aged 47 years	
<b>Commander's Flying Experience:</b>	265 hours, of which 90 were on type	
<b>Notification Source:</b>	Pilot	
<b>Information Source:</b>	AAIU Field Investigation AAIU Report Form submitted by Pilot	

<sup>4</sup> **UTC:** Coordinated Universal Time. All timings in this report are quoted in UTC. (Equivalent to local time between 26 October 2014 and 29 March 2015).

<sup>5</sup> **PPL (A):** Private Pilot's Licence (Aeroplanes).

# FINAL REPORT

## SYNOPSIS

The Pilot was attempting to take-off from Runway (RWY) 25 at Fethard Airfield. The aircraft lifted momentarily from the runway. It then settled back on the runway when the Pilot adjusted the aircraft pitch with forward control column input. This resulted in a loss of airspeed. The Pilot decided to discontinue the take-off. During the subsequent roll-out, the aircraft departed the runway end, onto soft ground, where the nose wheel collapsed and the propeller struck the ground. There were no injuries.

## 1. FACTUAL INFORMATION

### 1.1 History of the Flight

On the morning of the accident the Pilot flew the aircraft from Coonagh Airfield (EICN), Co. Limerick, to Fethard Airfield, Co. Tipperary. Prior to the flight, the Pilot carried out a pre-flight inspection. He found no aircraft defects, but noticed ice on the wings which he removed prior to departure. This was the Pilot's first flight to Fethard Airfield. He was accompanied by a passenger. The aircraft is normally based at EICN, which has a paved runway.

The aircraft landed on RWY 25 at Fethard, which is a level, grass runway. The Pilot noted that the aircraft decelerated more quickly than expected and that he did not require brake application to slow the aircraft. He taxied the aircraft to the hangar area and parked.

3

At approximately 14.15 hrs, the Pilot and his passenger returned to the aircraft with the intention of flying back to EICN. Another pre-flight inspection was carried out, which included ensuring the airframe was clear of ice. The Pilot was satisfied that the aircraft was fit for flight, started the engine and performed his "taxi and run-up checks". He lined the aircraft up on RWY 25 and started the take-off run. The Pilot informed the Investigation that he used what he described as a "Short-Field" take-off technique, whereby he would hold the control column fully back during the take-off roll. He said it was a technique that he did a "lot of training on in Rallies and Kolibers".

The Pilot also informed the Investigation that he decided to "feed in power gradually" at the start of the take-off to prevent a rapid yawing of the aircraft to the left. Despite this, he noted that the aircraft did yaw to the left as it commenced its take-off roll and he had to "use right brake" to steer the aircraft back to the centre of the runway. The Pilot stated that during the take-off he normally monitored the airspeed indicator to confirm that the airspeed was increasing. He noted that on this occasion the airspeed did not increase as quickly as he expected. The take-off was continued until the aircraft nose pitched up, which the Pilot said was usual when the aircraft became airborne using this take-off technique.

The Pilot then applied forward control stick movement to control the pitch-up attitude, which he said was also part of his "Short-Field" technique. At this point, the aircraft settled back onto the runway and the Pilot noticed a marked drop in airspeed. As a result, he decided to discontinue the take-off. His intention was to turn the aircraft around and taxi back to attempt another take-off. He reduced engine power to idle. He applied brakes, but did not apply a heavy braking action as he was mindful of potential for nose wheel shimmy.



He reported that, realising he was going to overrun the grass strip he pulled the stick back as far as he could and thought he would simply turn around and taxi back for another take-off attempt. The pilot stated that the planted field looked smooth and flat with a slight upslope and that he did not anticipate that the surface would be as soft as it was. When the aircraft left the end of the runway the nose wheel dug into soft ground, causing the nose wheel assembly to fracture and detach. Following this, the aircraft nose dropped and the propeller made contact with the ground and was damaged. Some damage was also sustained to the cowling.

The aircraft travelled approximately 10 metres (m) into the planted field before the nose wheel detached and then a further 10 m before coming to rest.

## 1.2 Aircraft Information

The Czech Aircraft Works (CZAW) Sportcruiser is a single-engine, all metal, low-wing monoplane of semi-monocoque construction with two side-by-side seats. The aircraft has a fixed tricycle undercarriage with a castering nose wheel. The investigation noted that the Pilot's Operating Handbook, under the section "*Short field take-off and landing procedures*", states '*None*'.

## 1.3 Airfield Information

Fethard Airfield is an unlicensed airfield consisting of one grass runway oriented 25/07. The runway is level and is approximately 450 m long and is surrounded on three sides by a field, which was planted with a crop. Access to the runway is via the threshold of RWY 25 from a small paved ramp.

## 1.4 Interview with the Pilot

The Pilot noted that the aircraft decelerated without braking during his earlier landing roll at Fethard. He also noted that the aircraft did not accelerate as quickly as he expected during the subsequent take-off. The Pilot informed the Investigation that the grass was quite long and wet, especially in the second half of the runway (i.e. the 07 end). He also stated that the ground in which the crop was growing, and into which the nose-wheel went during the accident, was soft. The Pilot told the investigation that he had chosen a decision point on the runway, at which he would discontinue the take-off if not airborne. However, he said that given the nature of the runway being situated in the middle of a crop field with no definitive visual references along the runway length, it was difficult to maintain a reference to the decision point once the take-off roll had commenced.

The Pilot went into further detail concerning the "Short-Field" take-off technique he used. He explained how the nose of the aircraft would pitch up just at lift-off, and this would be corrected by applying forward control column movement. He informed the Investigation that, during a previous take-off on grass in this aircraft, the nose pitched up much more than expected, requiring a large forward control input as a result. Because he was expecting this to happen again, he stated that he may have inadvertently over-controlled the aircraft in an effort to counter the pitch-up, resulting in the aircraft settling back onto the runway.

## FINAL REPORT

### 1.5 Meteorological Information

The Pilot informed the Investigation that he checked the Shannon TAF<sup>6</sup> and METAR<sup>7</sup> prior to departure from EICN. He also stated that the weather at the airfield at the time of the accident was good. There were clear skies and no wind. He recalls looking at the windsock during his pre take-off checks and noted, *“it was sitting absolutely still”*.

### 1.6 Safety Material

The Irish Aviation Authority (IAA) has developed a Safety Leaflet (AED 1) on the subject of obstacles at unlicensed/private airstrips which includes guidance for pilots who intend using an airstrip for the first time. In conjunction with the IAA, the General Aviation Safety Council of Ireland (GASCI) has published a Safety Information Leaflet, *‘STRIP OPERATIONS’*. This document can be accessed from the following link:

[http://www.weebly.com/uploads/1/2/9/1/12917568/iaa\\_stripsafety\\_booklet\\_v2.pdf](http://www.weebly.com/uploads/1/2/9/1/12917568/iaa_stripsafety_booklet_v2.pdf)

Additionally, the UK Civil Aviation Authority has published Safety Sense Leaflet 12 entitled *‘Strip Flying’* which also deals with flying from unlicensed/private airstrips, and Safety Sense Leaflet 7c entitled *‘Aeroplane Performance’* which gives guidance on light aircraft take-off and landing performance from various runway surfaces including wet grass.

## 2. AAIU COMMENT

5

As the purpose of accident investigation is to prevent future occurrences, the following AAIU Comment is addressed to the wider GA Community.

The AAIU has investigated and reported on a significant number of take-off and landing accidents that were specifically related to expected performance not being achieved due to prevailing weather and/or ground conditions. Many of these events have resulted in injury to persons on board, extensive damage, or even loss of the aircraft itself.

The high performance and short field capabilities of new generation light aircraft can lure individual pilots to operate into, or out of restricted airstrips, or operate in prevailing weather or ground conditions that may be less than suitable. Aircraft, regardless of size and/or performance, are subject to degradation of field performance when operating from wet/soft grass surfaces. Furthermore, the grass may vary in length, there may be unknown areas of wet and/or soft ground and there may be tyre rutting across the take-off run.

Pilots should also be aware that handling techniques used on one aircraft type and/or airfield type (e.g. paved runway vs. grass), may not transfer across to a different aircraft or airfield. In this specific case it is opinion of the Investigation that a combination of the handling techniques used and the presence of long, wet grass on the runway affected the take-off performance of the aircraft, both during the initial acceleration and later when the aircraft touched back down on the runway.

---

<sup>6</sup> **TAF:** Terminal Area Forecast.

<sup>7</sup> **METAR:** Meteorological Terminal Air Report.

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)



Air Accident Investigation Unit,  
Department of Transport Tourism and Sport,  
2nd Floor, Leeson Lane,  
Dublin 2, Ireland.  
Telephone: +353 1 604 1293 (24x7): or  
+353 1 241 1777  
Fax: +353 1 604 1514  
Email: [info@aaiu.ie](mailto:info@aaiu.ie)  
Web: [www.aaiu.ie](http://www.aaiu.ie)