Air Accident Investigation Unit Ireland

FACTUAL REPORT

ACCIDENT

ICP Savannah S, EI-GHR

Craughwell Airfield, Co. Galway

8 May 2022

An Roinn Iompair
Department of Transport

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[1] to the Convention on International Civil Aviation, Regulation (EU) No 996/2010[2] and Statutory Instrument No. 460 of 2009[3], 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 No. 460 of 2009, the Chief Inspector of Air Accidents, on 8 May 2022, appointed Paul Farrell as the Investigator-in-Charge to carry out an Investigation into this Accident and prepare a Report.

Aircraft Type and Registration:	**ICP Savannah S, EI-GHR**
No. and Type of Engines:	**1 x ROTAX, 912-ULS**
Aircraft Serial Number:	**18-10-54-0637**
Year of Manufacture:	**2018**
Date and Time (UTC)[4]:	**8 May 2022 @ 17:15 hrs**
Location:	**Craughwell Airfield, Co. Galway, Ireland**
Type of Operation:	**Private**
Persons on Board:	**Crew – 1 Passengers – 1**
Injuries:	**Nil**
Nature of Damage:	**Aircraft Destroyed**
Commander's Licence:	**Private Pilot Licence, issued by the Irish Aviation Authority (IAA)**
Commander's Age:	**75 years**
Commander's Flying Experience:	**1,051 hours, of which 45 were on type**
Notification Source:	**The Pilot**
Information Source:	**AAIU Report Form submitted by the Pilot, AAIU Field Investigation**

[4] **UTC**: Co-ordinated Universal Time. All times in this report are quoted in UTC unless otherwise stated; local time was UTC plus one hour on the date of the accident.

SYNOPSIS

On approach to Runway 16 at Craughwell Airfield, the aircraft's right wing dropped suddenly. Attempts to correct the aircraft attitude were unsuccessful, and the aircraft impacted the grass surface in a nose down attitude. The aircraft came to rest, inverted, and the two occupants, who were uninjured, released their harnesses and exited the aircraft unaided. There was no smoke or fire.

NOTIFICATION AND RESPONSE

Immediately after the accident, the AAIU Inspector-on-Call (IOC) was notified of the accident by a third party, at the request of the Pilot. Having discussed the circumstances of the Accident, and as it was possible to leave the wreckage undisturbed overnight. The following morning, the IOC and another inspector travelled to Craughwell Airfield to commence an investigation.

1. FACTUAL INFORMATION

1.1 History of the Flight/Occurrence

The Aircraft was on a local flight from Craughwell Airfield. The Pilot recalled that on the approach to Runway (RWY) 16 he had been a little low and that while he had reduced the power he was '*powering it in a bit*'. The Pilot reported that on approach, with full flaps deployed, the Aircraft crossed the airfield boundary wall at a height of approximately 50 feet (ft), and an estimated approach speed of between 50 and 55 miles per hour (mph) (43 to 48 knots(kt)). He said that with the power now '*fully back*' he encountered some turbulence and the right wing dropped suddenly. The Pilot recalled that he attempted to correct the right-wing drop using flight control inputs, and a '*jab*' of power. The Pilot believed that he may have over-corrected and that the aircraft pitched up more that had been intended. The stick was pushed forward to reduce the aircraft's pitch. The Pilot assessed that he had again over-corrected and pulled the stick back again, but the aircraft's nosewheel and propeller contacted the ground to the left of the runway. The aircraft then '*rolled onto its back*', a motion which the Pilot described as appearing to happen quite slowly. Both occupants were restrained by their seat harnesses and were uninjured. Once the aircraft came to rest, the occupants released their harnesses and exited the aircraft unaided. There was no fire.

1.2 Injuries to Persons

No injuries were reported to the Investigation.

1.3 Damage to Aircraft

Examination of the ground scars indicated that the aircraft impacted the ground, nose first, approximately 98 metres (m) from the airfield boundary wall. When it came to rest, inverted, the nose of the aircraft was approximately 108 m from the airfield boundary wall indicating that the aircraft travelled approximately 10 m from initial impact to its final resting position.

On examination of the aircraft, it was noted that the nosewheel had sheared from its leg early in the impact sequence. The nosewheel leg was bent rearwards and there was grass and soil embedded in the air inlet on the bottom of the engine cowling. Two of the propeller's three blades had fractured and separated, while the third had fractured but not separated. The propeller spinner sustained significant damage and much of it had separated. There was buckling on the underside of the aircraft aft of the firewall. There was distortion of both door frames and significant crumpling and distortion, circumferentially in the area aft of the cabin structure. The fairing on the top of the rudder was shattered and the leading edge of the fin had crumpling damage. The tip of the leading edge of the right wing was also damaged.

The Investigation verified control continuity at the accident site. The Pilot informed the Investigation that the aircraft had been flying well and did not believe that there were any mechanical factors that contributed to the Accident. **Photo No. 1** shows the aircraft position following the accident.

Photo No. 1: Aircraft position following the accident

1.4 Personnel Information

The Pilot held a European Union (EU) Private Pilot Licence-Aeroplanes (PPL(A)), issued by the IAA on 17 January 2017. The Pilot's licence contained a Single Engine Piston (SEP) Land rating, which was valid until 31 May 2023. The Pilot also held an EU Class 2 Medical Certificate, which was valid until 25 July 2022.

The Pilot's flying experience is outlined in **Table No. 1**.

Total all types:	1,051 hours
Total on type:	45 hours
Total on type P1:	45 hours
Last 90 days:	11 hours
Last 28 days:	3 hours
Last 24 hours:	1 hour

Table No. 1: Pilot's Flying Experience

1.5 Meteorological Information

Met Éireann, the Irish meteorological service, was asked to provide details of the weather conditions prevailing in the Craughwell area at the time of the accident. Details from the report received are reproduced in **Table No. 2**.

Meteorological Situation:	Ireland lay in a mainly moderate to fresh southerly airflow between an anticyclone over the North Sea and a broad depression over the north Atlantic.
Surface Wind: **Wind at 2,000 feet(ft):** **Between surface and 300 ft:**	South-west, 5-10 kt South-southwest, 20 kt Similar to surface
Visibility:	40 kilometres (km)
Weather:	Cloudy and dry
Cloud:	Broken (7/8^{ths} oktas[5]) layered cloud with bases around 2,500-3,000 ft
Surface Temperature/Dew Point:	15/11 degrees Celsius
Mean Sea Level (MSL) Pressure:	1021 hectopascal (hPa)
Freezing Level:	8,000 ft

Table No. 2: Weather conditions in the Craughwell area at the time of the occurrence

[5] **Okta**: A unit of cloud amount, expressed as a number of eights of the sky dome covered by clouds.

1.6 Aircraft Information

The Savannah S is a single engine, all-metal, high-wing, two-seat aeroplane with a fixed tricycle undercarriage. The subject aircraft, EI-GHR, was home-built aircraft, first registered in Ireland in 2018. The aircraft was issued with an IAA Certificate of Registration on 8 July 2021. The aircraft also had an IAA Flight Permit which was issued on 24 March 2022 and was valid until 23 March 2023. At the time of the accident, the aircraft has amassed 651 flight hours. The aircraft logbook contained entries for an annual inspection and a flight test for Flight Permit renewal. Both entries were dated 21 March 2022. The aircraft's maximum operating weight was 600 kg.

The aircraft's Pilot Operating Handbook (POH) stated that the maximum crosswind component for take-off and landing was 26 kt. The aircraft is not equipped with a stall warning system.

1.7 Airfield Information

Craughwell Airfield is a private, unlicensed airfield situated 3.5 km north-east of Craughwell, Co Galway. Its elevation is 120 ft Above Mean Sea Level (AMSL). The airfield has a single grass runway, designated 16/34. There is a dry-stone wall approximately 1 m in height at the airfield boundary, 6.7 m from the RWY 34 threshold and another dry-stone wall, approximately 1.7 m in height, 4.7 m from the RWY 16 threshold. The distance between the two boundary walls is 620 m (2,034 feet).

2. AAIU COMMENT

The Pilot's licence and medical were valid, the aircraft's Permit to Fly was valid and no pre-existing aircraft defects were reported to the Investigation.

The surface wind of up to 5-10 kt from the south-west, as indicated in the aftercast, meant that the aircraft would have likely experienced a crosswind of 4-9 kt. This crosswind, which was within the limits specified in the POH, would have required control inputs to maintain the correct approach path.

The Pilot recalled that having passed over the airfield boundary wall at a height of about 50 ft, he encountered some turbulence and that the right wing dropped suddenly. This wing drop was probably due to a stall caused by operation at a high angle of attack (associated with manoeuvring to adopt the correct landing attitude) and/or the reported turbulence encounter (which can affect the relative wind and increase the AOA). The Pilot indicated that, following the wing drop, he may have over corrected, added a '*jab*' of power, and that the aircraft pitched up more than had been intended. Although the stick was pushed forward, and then pulled back, at that stage the height available was insufficient to accommodate the intended recovery manoeuvre and the aircraft's nose wheel and propeller impacted with the ground.

Despite an impact sequence that resulted in the aircraft coming to rest inverted, both occupants were restrained securely by their seat harnesses and were uninjured.

- 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.

Produced by the Air Accident Investigation Unit

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

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