Air Accident Investigation Unit Ireland

ACCIDENT REPORT
Van's Aircraft Inc. RV-6, EI-EOC
Limetree Airfield, Co Laois, Ireland
10 June 2011 @ 19.02 hours

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

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In accordance with the provisions of SI 460 of 2009, the Chief Inspector of Air Accidents, on 10 June 2011, appointed Paddy Judge as the Investigator-in-Charge to carry out a Field Investigation into this Accident and prepare a Final Report. The sole purpose of this Investigation is the prevention of aviation Accidents and Incidents. It is not the purpose of the Investigation to apportion blame or liability.

Aircraft Type and Registration:	Van's Aircraft Inc. RV-6, EI-EOC
No. and Type of Engines:	1 x Lycoming O-320-E2A
Aircraft Serial Number:	23830
Year of Manufacture:	1997
Date and Time (UTC):	10 June 2011 @ 19.02 hours
Location:	Limetree Airfield, Co Laois, Ireland
Type of Operation:	General Aviation
Persons on Board:	Crew - 1 Passengers - Nil
Injuries:	Crew - Minor
Nature of Damage:	Substantial
Commander's Licence:	JAR Private Pilot Licences (A) and (M)
Commander's Details:	Male, aged 47 years
Commander's Flying Experience:	300 hours, of which 100 were on type
Notification Source:	Limetree Airfield
Information Source:	AAIU Field Investigation, AAIU Pilot Report Form submitted by Pilot

SYNOPSIS

The Pilot reported that the aircraft encountered a downdraft immediately before landing. He applied power but the wheels contacted high corn crop before the runway threshold. The aircraft landed and, when the main landing gear hit a raised ridge, stopped suddenly and inverted. The Pilot switched off the electrics and fuel and was able to exit unaided from under the aircraft.

1. FACTUAL INFORMATION

1.1 History of the Flight

The Pilot/Owner was conducting local circuit training at Limetree airfield. Limetree is a private airfield located SW of Portarlington, Co Laois, Runway (RWY) 19 being 425 metres long. Earlier in the evening, he had curtailed his circuit detail for fifteen minutes to allow a heavy shower of rain to clear the general area. He resumed his circuit detail, taking off from RWY 19.

1.2 Pilot Interview

In his full and frank recall of events prior to the accident, the Pilot detailed the final circuit from the take-off to initial contact with the ground on final approach. While a heavy rain shower had passed through earlier, he believed that there was only a slight cross-wind from 210° at 5 to10 kts at the time. He said that this third practice circuit was standard in all respects until the final approach to RWY 19. The constant speed propeller was selected at fully fine pitch throughout the short flight, which he flew at a circuit height of 750-800 ft and 90-100 MPH. On base leg he aimed for a 500 ft turn onto finals with full flaps selected. He was conscious of the relatively short runway length, and, as on each previous circuit, he *"tried to land at the first marker"*, so as to make a three point touchdown as early as possible.

He stated that a normal approach was carried out with full flaps selected, at about 70 to 75 MPH. While he thought that there was little or no wind to affect him, he recalled that he was low on the approach to the runway threshold when he experienced *"a lot of sink"* for which he applied power to counteract. He said that the *"aircraft didn't pick up quickly enough"* and *"the wheels caught a crop of corn which pulled me in, the gear went into a little rut where the runway joins the field of corn and nosed over"*. *"It all happened in seconds"* he said. While inverted, he isolated the fuel, switched off the electrics and managed to extricate himself from the cockpit through the broken canopy (**Photo No. 1**).

The Pilot stated that this last approach was flatter than he had intended and, when the sudden sink occurred, he was caught unawares by it. He thought that his recovery throttle action was possibly too late to stop the aircraft from sinking into the corn.

The Pilot was shocked and bruised and generally uninjured, other than minor scratches and sore ribs; the latter he agreed was probably due to the restraint provided by the 5 point harness, with which the aircraft was equipped.

The Pilot's JAR Private Pilot Licence (A), issued by the Irish Aviation Authority (IAA), was valid.

1.3 Site Examination

The tail-wheel aircraft came to rest inverted on the runway, 9 metres from the threshold of RWY 19, pointing to the north (**Photo No. 1**). The canopy was crushed and the empennage damaged. The engine mounts were damaged and both propeller tips bent backwards from mid span outwards. There was no fire.

Photo No. 1: The inverted aircraft and smashed canopy.

The corn crop in the field adjacent to the threshold was approximately 0.4 metres high. The marks of the aircraft's wheels in the crop showed that the aircraft had actually landed, cutting tracks 26 metres long through the corn before the main gear impacted a small step or clay ridge at the edge of the cultivated area, immediately before the threshold of RWY 19.

Aircraft documentation showed that the aircraft was serviceable and had been properly maintained. The Flight Permit, issued by the IAA, was valid until 15 September 2011.

2. ANALYSIS

The sudden sink, reported by the Pilot, may possibly have resulted from insufficient power or the approach speed falling below the recommended approach speed. In any case, the low height at which it occurred, combined with a late or insufficient application of power, allowed the main landing gear wheels to contact the crop and prevented a go-around.

Once contact was made, speed would have been rapidly lost and the aircraft consequently descended into the crop and inadvertently landed. The clay ridge then immediately arrested the main landing gear wheels, which dug into the soft soil.

Though landing unintentionally short of the runway, the Pilot was unlucky in that, while the corn field and the airfield were almost at the same level, there was a small ridge that the aircraft main gear struck and did not pass over. This abruptly arrested main gear progress and caused the aircraft to tumble and invert. Had that ridge not been there the aircraft might have rolled onto the runway without further mishap.

3. CONCLUSIONS

(a) Findings

1. A low final approach was conducted.
2. The aircraft experienced a sudden sink rate during the final stages of the approach.
3. The aircraft contacted long corn crops short of the runway and inadvertently made ground contact.
4. During the landing roll the main landing gear struck a low clay ridge and the aircraft inverted.

(b) Probable Cause

A flat final approach coupled with an unintentional descent at a low height caused inadvertent ground contact prior to the runway.

(c) Contributory Factors

Abrupt deceleration and inversion due to main landing gear contact with low clay ridge.

4. SAFETY RECOMMENDATIONS

This Investigation does not sustain any Safety Recommendation.

-END-

In accordance with Annex 13 to the International Civil Aviation Organisation Convention, 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 these investigations is to prevent aviation accidents and serious incidents. It is not the purpose of any such accident 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

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