Air Accident Investigation Unit Ireland

FACTUAL REPORT

ACCIDENT
Robin R1180TD, EI-ROB
Kerry Airport, Co. Kerry

5 November 2016

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 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.

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[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 5 November 2016, appointed Mr Paul Farrell as the Investigator-in-Charge to carry out an Investigation into this Accident and prepare a Report.

Aircraft Type and Registration:	**Robin R1180TD, EI-ROB**	
No. and Type of Engines:	**1 x Lycoming O-360-A3A**	
Aircraft Serial Number:	**270**	
Year of Manufacture:	**1980**	
Date and Time (UTC)[4]:	**5 November 2016 @ 12.20 hrs**	
Location:	**Kerry Airport (EIKY), Co. Kerry**	
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 (Aeroplane) issued by the Irish Aviation Authority (IAA)**	
Commander's Age:	**59 years**	
Commander's Flying Experience:	**234 hours, of which 110 were on type**	
Notification Source:	**Duty Air Traffic Control Officer (DATCO), Kerry Airport**	
Information Source:	**AAIU Report Form submitted by the Pilot, AAIU Field Investigation**	

[4] **UTC**: Co-ordinated Universal Time. All timings in this report are quoted in UTC, which was coincident with local time on the date of the event.

SYNOPSIS

EI-ROB departed Weston Airport (EIWT) at 11.10 hrs on 5 November 2016 on a general aviation flight to Kerry Airport (EIKY). Following an uneventful en route flight, the aircraft was cleared to approach Runway (RWY) 08 at EIKY. The Pilot reported that on touch down a gust of wind caught the aircraft, causing it to veer towards the edge of the runway. The aircraft entered the soft grass at the side of the runway; the nose-gear dug into the wet ground and the aircraft pitched up onto its nose before coming to rest. The Pilot exited the aircraft unaided. There was no fire.

NOTIFICATION

The AAIU was notified of the event by the EIKY DATCO. A team of two Inspectors of Air Accidents travelled to EIKY to survey the aircraft and interview the Pilot. En route, authorisation was given to EIKY personnel to carry out a photographic survey of the accident site and then remove the aircraft from the airfield so that normal operations could resume.

1. FACTUAL INFORMATION

1.1 History of the Flight

The aircraft departed EIWT at 11.10 hrs for a General Aviation flight to EIKY. On approaching the controlled airspace at EIKY, the Pilot contacted EIKY ATC saying "*Ah just abeam Newmarket entering your controlled airspace squawking two six four one for landing at Kerry ROB*". The EIKY DATCO replied "*ROB roger cleared inbound expect a visual approach runway zero eight, the Kerry QNH one zero one eight hectoPascals report at the zone boundary at ten miles*" and this was acknowledged by the Pilot.

The Pilot subsequently reported "*Romeo Oscar Bravo at the zone boundary*" and the DATCO replied "*Romeo Oscar Bravo tower roger next report abeam the tower left downwind runway zero eight*". The Pilot reported when his aircraft was abeam the tower and the DATCO responded "*Romeo Oscar Bravo roger you're number one visual approach runway zero eight you're cleared left base when ready report finals*".

The DATCO gave a landing clearance "*Romeo Oscar Bravo cleared to land zero eight surface wind zero one zero degrees nine knots*". The DATCO informed the Investigation that on landing the aircraft veered to the left, departed from the hard surface of the runway and came to rest approximately 35 metres (m) from the edge of the runway in a tail up position. The DATCO said that he activated the '*Crash Siren*' and dispatched the Fire Services to the scene. The DATCO immediately contacted the Pilot to ask "*Romeo Oscar Bravo is everything OK*" to which the Pilot replied "*Oscar Bravo just lost control on the runway Romeo Oscar Bravo*".

Photo No. 1 shows EI-ROB after it had been recovered from the airfield. **Photo No. 2** shows the damage suffered by the propeller during the runway excursion.

Photo No. 1: Aircraft following recovery from the airfield

Photo No. 2: Propeller damage suffered during the runway excursion

1.2 Pilot Interview

The Pilot said that this was his first flight into EIKY and that during his landing on RWY 08 he was aware of a crosswind from the left. He believed that on touchdown the aircraft was "*caught by a gust of wind causing the aircraft to weathercock with the result that the aircraft veered toward the edge of the runway*".

The Pilot reacted to the situation by applying full power to initiate a go-around. He informed the Investigation that "*when the wheels contacted the ground at the side of the runway I experienced extreme drag due to the nature of the ground, wet bog*". The Pilot said that he then elected to abandon the go-around and closed the throttle.

The Pilot reported that the aircraft continued travelling for a short distance, during which the nose-gear dug into the wet ground and the aircraft pitched nose-down into the grass before coming to rest. The Pilot turned off the fuel, and once he had confirmed to the DATCO that he was OK, he turned off the aircraft's electrical system and exited the aircraft to await the arrival of the emergency services.

During interview the Pilot said that he did not have any technical issues with the aircraft. He said that his landing technique was to fly in with "*crab*[5]" and kick off the "*crab*" in the flare[6]. He noted that the crosswind limit in the Pilot Operating Handbook was 22 kts, but he said that he was conservative in his approach to flying and would not attempt approaches at winds close to that. The Pilot noted that the aircraft has a large fin (proportionately speaking) and quite a powerful engine which renders the aircraft susceptible to weather-cocking due to the impingement of the propeller's spiral slipstream on the left hand side of the fin surface. He said that one consequence of this weather-cocking susceptibility was that full right rudder was required during takeoff. The Pilot informed the Investigation that his aircraft was based at EIWT, where the runway width is 23 m; RWY 08 at EIKY is 45 m wide.

1.3 Meteorology

The Pilot said that prior to the flight he checked the weather at EIKY a number of times. Meteorological Actual Reports (METARS) for around the time of the accident quoted winds 9-12 kts strength, with directions varying between 330° Magnetic and 60° Magnetic.

The Pilot said that during his approach he "*had assessed the wind as strong*". Airfield recordings, at 15 second intervals, of actual wind conditions showed that there were fluctuations of up to 10 kts approximately in the instantaneously recorded values. The overall trend in mean values was not sufficient to trigger an automated alert to the controller to provide a specific warning to pilots. The instantaneous recordings of wind directions around the time of the accident show values varying between 24° Magnetic to 346° Magnetic. The recordings also indicate a crosswind component of the order of 8 kts.

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1.4 Pilot's Licence and Experience

The Pilot held a valid Private Pilot Licence (Aeroplanes) issued by the IAA. His Class 2 Medical Certificate was valid until 21 September 2017. The Pilot had amassed a total of 234 hours flying time of which 110 hours were on the occurrence type. In the previous 90 days the Pilot had accrued four hours and 25 minutes of flight time; in the previous 28 days the Pilot's only flight was the accident flight, which lasted just over one hour.

1.5 Aircraft Damage

The aircraft suffered substantial damage in the accident; the nose-wheel strut was bent backwards (but remained attached); the bottom cowling was damaged; both propeller blades were damaged and bent; the front wheel spat was damaged and the left hand exhaust assembly was damaged. As a result of the propeller blade impacts, the engine suffered shock loading.

[5] **Crab**: Describes a technique of approaching a runway when the wind direction is not aligned with the runway direction; the nose of the aircraft is oriented partially ('*weathercocked*') into the wind while the aircraft is actually moving towards the runway.

[6] **Flare**: The transition phase between the final approach and the touchdown on the landing surface. This sub-phase of flight normally involves a simultaneous increase in aircraft pitch attitude and a reduction in engine power/thrust, the combination of which results in a decrease in both the rate of descent and airspeed.

2. AAIU COMMENT

The Pilot said that prior to the flight he checked the weather at EIKY a number of times. The Pilot was not familiar with EIKY and during his approach he assessed the wind as strong which would have been more challenging. The variable wind direction evidenced in the recorded wind values around the time of the accident could have introduced a tail wind component and increased the aircraft's ground speed. The large fin and associated weather cocking tendency which the Pilot remarked on to the Investigation may have been complicating factors in the handling of the aircraft as it veered towards the runway's edge and when full power was applied to initiate the attempted go-around. Furthermore, as EIKY's RWY 08 was twice as wide as the runway at EIWT, where the aircraft was based, judgement of height for flare initiation may have been more difficult.

- 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

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