



Air Accident Investigation Unit Ireland

ACCIDENT REPORT **Hoffman H-36 Dimona, EI-CRV,** **Waterford Airport, Ireland** **15 October 2010**



*Department of Transport
Tourism and Sport*

*An Roinn Iompair
Turasóireachta Agus Spóirt*



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In accordance with the provisions of SI 460 of 2009, the Chief Inspector of Air Accidents, on 15 October 2010, appointed Mr. Thomas Moloney as the Investigator-in-Charge to carry out an investigation into this Accident and prepare a 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:	Hoffman H-36 Dimona, EI-CRV	
No. and Type of Engines:	1 x Limbach L2000 EB IAC	
Aircraft Serial Number:	3674	
Year of Manufacture:	1983	
Date and Time (UTC ¹):	15 October 2010 @ 10.45 hrs	
Location:	Waterford Airport, Ireland (EIWF)	
Type of Flight:	Training	
Persons on Board:	Crew - 2	Passengers - 0
Injuries:	Crew - 0	Passengers - 0
Nature of Damage:	Minor	
Commander's Licence:	Private Pilot Licence (PPL)	
Commander's Details:	Male, aged 52 years	
Commander's Flying Experience:	5,928 hours, of which 141 were on type	
Notification Source:	EIWF Air Traffic Control	
Information Source:	AAIU Pilot Report Form submitted by Pilot, AAIU Investigation	

2

1 UTC: Universal Co-Ordinated Time. All timings in the Report are UTC. Add one hour for local time.



SYNOPSIS

The aircraft was engaged on a circuit training detail at EIWf. After the second landing, the aircraft developed a swing to the right during the ground roll along the runway. The Commander called that he had control; however the handling Pilot did not release the flight controls. The aircraft continued its swing and departed from the runway surface, coming to rest in the grass approximately 17 metres (m) from the runway edge. The right hand undercarriage leg collapsed. There were no injuries.

1. FACTUAL INFORMATION

1.1 History of the Flight

The aircraft departed from EIWf at 10.30 hrs on a circuit training detail. The handling Pilot had recently purchased a share in the aircraft from the Commander, who held an Instructor's rating. Over the 25 days preceding the accident flight, the two Pilots had completed 10 hours flying together in EI-CRV, including 73 landings. Prior to the accident flight, they had completed a 50 minute circuit detail after which they had stopped for a break.

On the second circuit detail of the day, the aircraft was flying left hand circuits to Runway (RWY) 03 in what the Commander described as "ideal conditions", with a light wind from the northwest. The accident occurred on the second landing of the detail. The Commander described how the aircraft made a normal approach and landing, touching down about 100 m beyond the threshold, slightly to the right of the centreline. He stated that "*the handling Pilot correctly held the stick against the back stop during the ground roll with the airbrakes extended*".

The Commander described how a swing developed to the right and he immediately called "*I have control*". He stated that "*the handling Pilot did not respond and appeared to freeze on the controls*". The aircraft departed the runway to the right passing over a runway edge light. As the aircraft left the runway, the right undercarriage leg collapsed. The aircraft came to rest in the grass approximately 17 m from the runway edge at an angle of approximately 100° to the runway centreline heading, **Photo No. 1**.

The Commander shut down the engine and turned off the fuel. The two Pilots exited the aircraft in the normal manner.



Photo No. 1: Final Resting Position of EI-CRV

1.2 Aircraft Information

The Hoffmann H-36 Dimona is a two-seat motor glider constructed from glassfibre. Design features include an unbraced wing, T-type stabiliser and a fixed undercarriage with steerable tail wheel. The main undercarriage legs are attached to the fuselage forward of the wing. All three wheels are fitted with fairings. The seating arrangement is side-by-side. The aircraft is fitted with airbrakes which are operated by levers installed in the cockpit to the left of each pilot position. The H-36 Dimona is certified in accordance with JAR-22² in the Utility Category.

The airbrake levers, when pulled to full travel, also apply the wheel brakes. There is no differential braking. On the ground, the aircraft is steered through application of the rudder pedals and the tail wheel. The Commander informed the Investigation that, as there is no spring in the tail wheel control circuit, the steering is "very direct".

1.3 Personnel Information

The Commander held a valid Irish PPL with an Instructor's Rating for single-engine piston aircraft and touring motor gliders. He had accumulated a total flying time of 5,928 hours of which 141 were on the H-36 Dimona. The second Pilot also held a PPL and had a total flying time of 393 hours of which 12 were on type.

1.4 Damage to Aircraft

The right hand undercarriage leg collapsed as the aircraft left the runway.

1.5 Commander's Statement

4 Following the accident, the Commander informed the Investigation that the normal technique during the ground roll after landing is to hold the airbrakes open without applying the wheel brakes, and to hold the control stick fully back to ensure that the tail wheel remains in contact with the ground. He stated that the handling Pilot's reaction to the swing was to pull the airbrake lever full travel thus applying the wheel brakes. He stated that the handling Pilot did not respond to the Commander's call for control but continued to hold the control stick against the back stop until the aircraft came to a halt. The Commander commented that, during the pre-flight briefing, he may not have placed enough emphasis on the need for the handling Pilot to release the controls fully should the Commander call for him to do so. He considered that this was particularly important when an instructor was flying with a qualified PPL.

The Commander also commented that a contributory factor to the undercarriage collapse may have been "the uneven transition from the runway surface to the runway strip". He stated that there was a 5 cm lip at the runway edge, followed by a sunken gravel drain about 0.5 m wide, followed by a rough grass surface.

2 JAR-22: (European) Joint Aviation Requirements – Sailplanes & Powered Sailplanes



2. ANALYSIS

It is likely that the light wind from the northwest, which had a component factor blowing across the runway from left to right, was a factor in the initiation of the swing to the right during the ground roll.

The H-36 Dimona has a relatively narrow main undercarriage track, in comparison to its wing-span, thereby rendering the type more prone to directional swings when on the ground. The Investigation also notes that application of the wheel brakes during a swing will exacerbate the swing, since on this tail-wheel aircraft type, the centre of gravity is to the rear of the main wheels. Delicate rudder/tail wheel inputs and aileron control inputs are required to correct a swing while holding the airbrakes open, but without application of the wheel brakes. In this case, as the handling Pilot did not release the controls after the swing commenced, the Commander was unable to apply the necessary control inputs and the aircraft consequently departed from the runway.

3. CONCLUSIONS

(a) Findings

1. After a normal approach and landing, the aircraft developed a swing to the right during its ground roll along RWY 03.
2. The handling Pilot did not release the flight controls when the Commander called that he had control.
3. As the Commander was unable to apply the required control inputs, the swing was not corrected and the aircraft departed the runway surface to the right.

(b) Probable Cause

Failure of the handling Pilot to release the flight controls as the swing developed, thus preventing the Commander from applying the control inputs required to correct the swing.

4. SAFETY RECOMMENDATIONS

This Investigation does not sustain any Safety Recommendations.

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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