

FINAL REPORT

AAIU Synoptic Report No: 2008-031

State File No: IRL00908036

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In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Air Accidents, on 4 May 2008, appointed Mr. Leo Murray as the Investigator-in-Charge to carry out a Field Investigation into this Accident and prepare a Synoptic Report.

Aircraft Type and Registration:	Pilatus PC-6/B2-H4, EI-IAN
No. and Type of Engines:	1 x Pratt & Whitney PT6A-27
Aircraft Serial Number:	810
Year of Manufacture:	1981
Date and Time (UTC):	4 May 2008 @ 17.00 hrs
Location:	Clonbullogue Airfield, Co. Offaly (EICL)
Type of Flight:	Aerial Work
Persons on Board:	Crew - 1 Passengers – Nil
Injuries:	None
Nature of Damage:	Substantial
Commander's Licence:	Private Pilot's Licence (Aeroplanes)
Commander's Details:	Male aged 64 years
Commander's Flying Experience:	3,500 hours, of which 500 were on type
Notification Source:	Pilot-In-Command
Information Source:	AAIU Field Inspection

SYNOPSIS

The aircraft had descended for a landing on the westerly runway at Clonbullogue Airfield after a routine parachute-drop flight. On short finals, with a southerly wind, the aircraft sank below the normal visual profile; the Pilot applied power to attempt recovery, but was unable to prevent contact with the boundary hedge before landing. The aircraft was substantially damaged by contact with a wooden fence post, which was embedded in the hedge. The Pilot, the sole occupant at the time, was unhurt. There was no fire.

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1. FACTUAL INFORMATION

1.1 History of the Flight

A total of ten flights had been undertaken that day by two pilots of the parachute club. After refuelling with 410 litres of Jet A1 fuel, the Pilot took off on the westerly runway and climbed to Flight Level (FL) 130 to commence the parachute drop. The parachute drop itself and subsequent descent towards the airfield were routine. Weather conditions were good, but a southerly wind, estimated by the Pilot to be from 210 degrees at 12-15 kts had the effect of causing turbulence around the club hangar, as it was situated adjacent to the threshold of runway (RWY) 27. On short finals, the aircraft sank below the normal approach profile and the Pilot responded by increasing power. As contact with the hedge appeared likely, the Pilot applied aft stick to clear the obstruction. The underside of the aircraft fuselage contacted the boundary hedge (**Photo No. 1**) in a high nose-up pitch attitude, causing significant damage to the aircraft.



Photo No. 1: Hedgerow with embedded fencing posts

A low fence post embedded in the hedge caused substantial damage to the underside of the fuselage. The aircraft continued its landing run without further incident. The Pilot was informed on the airfield frequency that he appeared to have struck the boundary hedge on landing. On inspection the extent of the damage was revealed.

1.2 Technical Information

1.2.1 Aircraft General

The Pilatus PC-6/B2-H4 is a large high-wing monoplane of tail wheel configuration powered by a single Pratt & Whitney Canada PT6A-27 turboprop, driving a Hartzell three-bladed metal propeller. The propeller is a constant-speed unit and is fully reversing.

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EI-IAN was configured for parachute-dropping operations, and as such could carry up to ten parachutists. The parachutists exit the aircraft through a sliding door on the right-hand side of the aircraft. The aircraft is designed for a utility role, with good short field capabilities. It has a maximum speed of 125 kts (True Air Speed), a stall speed of 58 kts in a clean configuration and 52 kts with flaps down at idle power. Normal approach speed is 70 kts reducing to 60 kts at the threshold.

Turbine engines, including the PT-6A, have certain characteristics that differ somewhat to piston-type engines. In particular, there can be a considerable lag between the advancement of the power lever and acceleration of the engine/propeller.

1.3 Airfield Information

Clonbullogue Airfield is situated 1 nautical mile (nm) west of Clonbullogue village, and 6 nm south of Edenderry at an elevation of 240 ft AMSL. Use of the field is by prior permission only. Intensive parachuting activity takes place most weekends and Public holidays, weather permitting. The airfield has a single grass runway, 770 metres long by 18 metres wide. The runway is orientated in an east-west direction. RWY 27, the westerly runway, was active on the day of the accident. A hangar is situated to the left of the RWY 27 threshold, with a height of 37 feet.

1.4 Field Investigation

The AAIU were informed of the accident by the Pilot shortly after the event. The following morning an Inspector of Air Accidents travelled to Clonbullogue and commenced an Investigation. The aircraft was inspected and was found to have substantial damage to the underside of the rear fuselage (**Photo No. 2**).



Photo No. 2: Damage to fuselage

The area under the right tailplane showed signs of buckling due to compression. The controls and associated control runs were free and remained undamaged. The approach to RWY 27 is made over a large grass field with no obstacles in the direct flight path until the boundary.

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A low wire fence, supported by wooden posts, and an earth bank mark the boundary of the airfield. The fence is surrounded by hedging, which all but obscures the wooden posts. Beyond the fence on the airfield side is a tarmac paved area providing access to the hangar. The area between the tarmac and runway is grass and is available for aircraft manoeuvring.

1.5 Licence Information

The Pilot held a Private Pilot's Licence (Aeroplanes) valid to 17 February 2013 and a Class II Medical Certificate valid until 4 October 2008. The Pilot held the following ratings: Single-engine, Multi-engine, Cessna Single-engine, and Pilatus PC-6.

The Pilot's licence also contained a 'Special Condition' pertaining to Parachuting Operations. On 14 February 2008 the Irish Aviation Authority (IAA) concluded an agreement with the parachute club concerning the licensing requirements of the clubs' pilots. This agreement permitted PPL(A) holders to act as Pilot-In-Command for parachute operations for hire or reward (for the named parachute club), with these operations to be conducted in Irish airspace only. This condition was to remain valid until 31 August 2008. After this date pilot's wishing to continue such operations are required to hold a Commercial Pilot's Licence and a Medical Certificate, Class I.

2. ANALYSIS

EI-IAN was acquired by the parachute club in August 2005, when the Pilot underwent a conversion course and type rating on the PC-6. At the time of the accident he had accumulated several hundred hours experience on the type in parachuting operations. The Pilot had considerable experience on the PC-6, and was very familiar with the airfield and its obstacles, including the hangar adjacent to the threshold of RWY 27. At the time of the accident the Pilot was operating with a PPL(A) with a Class II Medical Certificate. This was in agreement with the 'Special Condition' of the licence.

Operations at Clonbullogue are conducted under visual flight rules (VFR). Pilots generally aim for a visual profile during approach that equates to a 3-degree glidepath. The aircraft is flown so as to be stabilised on the final approach in the landing configuration with sufficient power to keep the intended approach speed at an appropriate descent rate. In the event of encountering sink on short finals, the pilot must apply sufficient power to arrest this sink and maintain a steady descent path. On this particular occasion, the application of power by the Pilot was insufficient to arrest the sink rate, thereby causing the underside of the aircraft to strike the boundary fence.

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3. CONCLUSIONS

(a) Findings

1. The Pilot was properly licensed to conduct parachute-dropping operations at the time of the accident.
2. The aircraft had a valid Certificate of Airworthiness.
3. On encountering sink on short finals, the application of power by the Pilot was insufficient to arrest the sink rate and prevent the aircraft striking the wooden post, which was contained within the boundary hedge.
4. The position of the hangar adjacent to the threshold of RWY 27 may, under certain prevailing wind conditions, cause turbulence on final approach.

(b) Probable Cause

The application of power in response to a sink rate on final approach was insufficient to prevent the aircraft striking the boundary hedge.

(c) Contributory Cause

Under the prevailing wind conditions, it is possible that the Pilot experienced some turbulence from the hangar during his final approach.

4. SAFETY RECOMMENDATIONS

This Investigation does not sustain any Safety Recommendations.

- END -