

FINAL REPORT

AAIU Report No: 2011-004
State File No: IRL00910030
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In accordance with the provisions of S.I. No. 460 of 2009, the Chief Inspector of Air Accidents, on 1 May 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:	Robinson R44, EI-SUB (Helicopter)
No. and Type of Engines:	1 x Lycoming O-540-F1B5
Aircraft Serial Number:	1535
Year of Manufacture:	2005
Date and Time (UTC¹):	1 May 2010 @ 17.30 hrs
Location:	Moll's Gap, Co Kerry, Ireland
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - Nil Passengers - Nil
Nature of Damage:	Significant damage to main rotor blades
Commander's Licence:	Private Pilot Licence (Helicopters)
Commander's Details:	Male, aged 43 years
Commander's Flying Experience:	800 hours, of which 400 were on type
Notification Source:	Irish Aviation Authority (IAA) Inspector
Information Source:	AAIU Pilot Report Form submitted by Pilot

SYNOPSIS

The main rotor blades struck disused electricity cables, just after the helicopter had lifted off from an elevated crest in mountainous terrain. The Pilot made an immediate controlled landing. No damage, other than to the main rotor blades, was sustained by the helicopter. The two occupants were uninjured.

NOTIFICATION

Two IAA Inspectors were in the vicinity of the occurrence and went to the scene shortly thereafter. They informed the AAIU Inspector-on-Call of the occurrence. It was agreed that the IAA Inspectors would carry out a visual survey of the scene and carry out an initial interview with the Pilot in Command (PIC). Thereafter, the AAIU gave permission for the helicopter to be recovered to its operating base by road.

¹ UTC: Universal Time Co-ordinated. Add 1 hour for local time.

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1. FACTUAL INFORMATION

1.1 History of the Flight

The helicopter had been parked on an elevated crest overlooking the road at Moll's Gap, Co. Kerry while its occupants acted as officials at a car rally. The location was in mountainous terrain, at approximately 1,000 ft amsl². Twin disused overhead electrical cables crossed the road at a height of approximately 7 metres (m), about 10 m from the crest. The PIC told the Investigation that he had seen and was aware of the cables prior to the helicopter's departure.

As the helicopter lifted off the crest and banked to the right, the PIC noticed the cables in front of him. He pitched the helicopter up to decelerate and the main rotor blades made contact with both cables, severing the cables. The PIC thought that the helicopter's airspeed at the time of the strike was approximately 20 knots. He carried out an immediate precautionary landing, which he reported was fully controlled. He also reported that he felt no unusual feedback through the cyclic controls following the cable strike. The helicopter landed approximately 80 m from the cables, alongside the road.

The PIC reported the cable strike to the Electricity Supply Board locally and their staff secured the cables away from the road.

1.2 Injuries to Persons

The two occupants were uninjured.

1.3 Damage to Aircraft

The two main rotor blades exhibited damage to their leading edges, lower surfaces and, on one blade, to the outboard trailing edge. There was no evidence of cable strike damage or marks on the fuselage. After the helicopter was recovered to its base by road, the main rotor blades were removed and returned to the helicopter manufacturer for inspection. The manufacturer found that there was no evidence on the blades of sudden rotor system stoppage. The blades were written off and replaced and the two associated main rotor spindles were re-certified by the manufacturer.

1.4 Meteorological Information

Weather conditions at the time were good with light variable winds, good visibility and broken cloud at 3,000 ft.

1.5 Cable Strikes

This Accident was one of six cable strike occurrences in Ireland between 01 April 2009 and 01 May 2010. One of these was a fatal accident, following which the AAIU published Formal Report No. 2010-009. That Report contains much information concerning the dangers of flying in the vicinity of overhead cables, and it makes the following Safety Recommendation to the IAA, "*That the IAA undertake to develop a suitable awareness campaign to inform general aviation pilots on the potential hazards of cable strikes (IRLD2010015)*".

² amsl: above mean sea level

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The IAA responded as follows: *“The Authority accept this Safety Recommendation. As part of the IAA General Aviation Safety awareness training programme a Safety Poster on wire strikes is due to be published in the Flying in Ireland magazine and placed on the IAA website. Additionally, specific wire strike awareness material will be produced and distributed as part of the State safety programme”*. A copy of the IAA safety poster is attached as **Appendix A**.

2. ANALYSIS

The PIC informed the Investigation that he had seen the cables and that he was aware of them before the helicopter lifted off. However, by the time that the helicopter lifted off and turned towards the cables, he had lost his awareness of them and did not observe them again until it was too late to avoid them. It is likely that the cables and their supporting poles were difficult to see against the backdrop of the local mountainous terrain, with its predominantly dark green and brown shading.

Given that this Accident was one of six cable strike occurrences in Ireland during a thirteen month period, there is no doubt that cable strikes are a serious flight safety risk factor for general aviation in Ireland. The AAIU made a recent Safety Recommendation to the IAA concerning a cable strike awareness campaign, which has been accepted and acted upon by the Authority. Therefore, the Investigation considers that there is no requirement for a further Safety Recommendation on the matter.

However, pilots are again reminded of the dangers posed to their aircraft by overhead cables whenever they are operating at low level over terrain.

3. CONCLUSIONS

(a) Findings

1. The main rotor blades struck disused electricity cables, just after the helicopter lifted off from an elevated crest in mountainous terrain.
2. The Pilot had been aware of the presence of the cables before departure, but he had lost this awareness as the helicopter lifted off.
3. No evidence of a sudden rotor system stoppage was found on the damaged blades.

(b) Probable Cause

A loss of awareness of the cables by the Pilot as the helicopter lifted off.

(c) Contributory Factor

Difficulty in seeing the cables and their supporting poles against the mountainous background.

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4. SAFETY RECOMMENDATIONS

This Investigation does not sustain any new Safety Recommendations.

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Appendix A

IAA Cable Strike Awareness Campaign Poster

The poster features a blue header with the IAA logo and website address. The main title 'DANGER - WIRES!' is in large yellow letters. Below it, text explains the importance of being aware of wires during flight. A list of 'ALWAYS' instructions is provided, along with a list of resources available on the IAA website. The background shows a propeller plane and a helicopter flying near power lines against a sunset sky.

 **IRISH AVIATION AUTHORITY**
ÚDARÁS EITLIÓCHTA NA hÉIREANN

www.iaa.ie

DANGER - WIRES!

Be aware of WIRES when on Departure and Approach to Aerodromes!

When landing at Aerodromes or Private Strips or Landing Sites **ALWAYS** get Prior Permission (PPR) and ask about local conditions - check for: • **Power Lines** • **Wires** • **Obstacles** • **Length** • **Obstructions** • **Slope** • **Surface** • **Animals**

REMEMBER NEW WIRES MAY HAVE BEEN ERECTED SINCE YOUR LAST VISIT:

ALWAYS:

- *Plan Your Approach*
- *Be Prepared to Go Around Early*
- *Be Aware of Poles – Wires May Blend into Background and be Difficult to Identify*

The IAA website is a major source of safety and flight information for you...

- Aerodrome Information
- AICs
- AIP
- Air Traffic Services
- Aircraft Register
- Airspace News & Regulations
- Airworthiness Directives
- EASA Updates
- Eurocontrol Updates
- General Aviation Information
- Licensing & Training
- NOTAMs
- Obstacles & Planning Information
- Occurrence Reporting
- Online Flight Planning
- Safety Promotion

- END -