

## FINAL REPORT

**AAIU Synoptic Report No:2005-001**  
**AAIU File No: 2003/0048**  
**Published:10/01/05**

**In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Accidents, on 15 August 2003 appointed Mr. John Hughes as the Investigator-in-Charge to carry out a Field Investigation into this occurrence and prepare a Synoptic Report.**

<b>Aircraft Type and Registration:</b>	Robinson R44 ASTRO, G-HALE	
<b>No. and Type of Engines:</b>	1 x Lycoming O-540-F1B5	
<b>Aircraft Serial Number:</b>	0492	
<b>Year of Manufacture:</b>	1996	
<b>Date and Time (UTC):</b>	13 August 2003 @ 13.11 hrs	
<b>Location:</b>	Fallagowan, Arranmore Island, Co. Donegal	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - 1	Passengers - 3
<b>Injuries:</b>	Crew - Nil	Passengers - NIL
<b>Nature of Damage:</b>	Electricity Wire Strike	
<b>Commander's Licence:</b>	UK PPL(H)	
<b>Commander's Age:</b>	59 Years	
<b>Commander's Flying Experience:</b>	1,284 hours of which 484 were on type	
<b>Information Source:</b>	Media reports and further investigation by AAIU	

### **SYNOPSIS**

The newspaper reports said that the privately-owned helicopter was flying from Carrickfin Airport to Arranmore Island, off the Donegal coast on the afternoon of Wednesday 13 August 2003, when it struck high tension cables beside the holiday village of Fallagowan. The Pilot managed to land safely but was reported to have taken off again.

# FINAL REPORT

## 1. FACTUAL INFORMATION

### 1.2 History of the Flight

The helicopter landed at Arranmore Island from Dunfanaghy at 11.09 hrs. At 12.29 hrs it arrived at Donegal Airport (Carrickfin) with four persons on board. It returned to Arranmore at 12.53 hrs with four persons on board following an upload of fuel (Avgas) of 93 litres. The pilot said that on his first landing in the chosen field he landed directly from an easterly direction into the middle of the field, an approach to which there were no wires. He then flew to Carrickfin for fuel and was told there that the wind was more north westerly. When he returned to the field at Arranmore he was concentrating on landing perfectly into wind and missed sight of the wires on the south east of the same landing area and struck the wires.

### 1.3 Local Reports

The land on which the helicopter landed is owned by the manager of the local Co-op. He said that whilst he was approaching the helicopter in his car, the helicopter took off again. A passenger in the helicopter who is an employee of the pilot and a resident of the island said that he was not aware that they had struck the wires until after they had landed. The pilot then told him to immediately report the incident to the Electricity Supply Board (ESB), which he did. He said that the pilot checked the helicopter and he reported that there was no damage to it. He took the helicopter for a short flight and then returned. The helicopter left the island shortly afterwards.

### 1.4 Damage to the aircraft

The helicopter, registered in the UK, had a UK Certificate of Airworthiness which was valid at the time. The aircraft, which is based in the UK, required a 100 hr/Annual Inspection at that time. It was therefore flown to a helicopter contractor in Galway, where in addition to the scheduled inspection, a detailed inspection of the main rotor blades was carried out. The examination of one blade revealed a small dent on the underneath side of 0.024 inch depth at a distance of 20 inches from the blade tip. There was a corresponding indentation on the top side of the blade of 0.012 inch depth. The worksheet states that no damage was found out of limits. The paintwork was then blended and protected as required. On aircraft release to service, both blades were assessed as serviceable.

### 1.5 Electricity Supply Board (ESB) Report

A member of the public phoned the ESB at 13.11 hrs local time to report that a helicopter had brought down main cables. At the same time an alarm was received from the ESB's Dungloe 38kV Substation. The line was a three phase 10,000 Volt overhead line and when the repair crews arrived at the scene they found all three copper wires were broken, each of these having a cross sectional area of 25 sq mm. Several businesses and homes were without power until it was restored at 17.30 hrs on the same day.

## FINAL REPORT

### 1.5 Personnel Information

At the time of the incident the pilot was 59 years of age and had a UK PPL(H) licence. His logbook indicates that he had a total of 1,284 hours flying experience of which 800 hrs were on the smaller R22 helicopter with the remainder on the R44. It is also noted that the pilot attended CAA Safety Evenings during his earlier training.

### 1.6 Aircraft Information

The manufacturer states that the primary cause of 32% of all accidents involving the R22 and R44 are due to collision with wires. For that reason the Flight Manual for the R22 and R44 includes a Safety Notice entitled "*Power Lines Are Deadly*" warning pilots that they must constantly be on the alert for power lines when flying at low altitudes.

The UK CAA have repeatedly stressed the hazards of flying in the vicinity of power lines in their quarterly General Aviation Safety Information Leaflet (GASIL). The CAA also run an annual Small Helicopter Safety Seminar at Farnborough. This one-day seminar is aimed primarily at qualified pilots who may have perhaps been away from the training system for some time.

### 1.7 Other Information

The incident was not reported by the pilot to the AAIU as required by SI 205 of 1997 or to the local ATC at Donegal Airport. The AAIU first learned of the incident through newspaper reports.

## 2. ANALYSIS

Fortunately the occupants of this helicopter were uninjured in this event. Many pilots and passengers involved in wirestrike accidents are not so lucky. Wires can be difficult to see and when the pilot is concentrating on flying and keeping an accurate speed he may not notice such wires. In this case, on previous occasions the pilot had flown the approach on a more westerly heading. However, having been informed of a change in wind direction he changed the flight path for landing without at first doing a proper recce to confirm that the approach was clear of obstacles. In this case, the three wires constituted the full 10KV system distribution and should have been easy to identify.

The pilot checked the helicopter and decided there was no damage. He then took off for a test flight and thereafter decided that the helicopter was serviceable. The pilot was not in a position, nor qualified, to technically examine the rotor and blades of his helicopter. This examination and the subsequent release to service is the duty of a fully qualified R44 helicopter inspector. The helicopter was finally flown from Donegal to Galway, a distance of 100 nautical miles, where the helicopter was examined. This flight was conducted with potentially unknown damage thereby putting at high risk, the safety of pilot, passengers and possibly the public.

The pilot had attended CAA Safety Evenings earlier in his flying career. The Investigation would highly recommend the one day CAA seminar at Farnborough where aspects of helicopter flight safety are discussed.

## FINAL REPORT

### 3. CONCLUSIONS

#### (a) Findings

- 3.1 G-HALE broke all 3-phase wires of the electrical power transmission system whilst landing in a field at Arranmore Island.
- 3.2 A technical examination of the helicopter by a qualified inspector was not carried out prior to resumption of the flight operation.
- 3.3 Resuming the flight, in the absence of a technical inspection and with the evidence of the clearly broken ESB wires, was at the very least, poor airmanship.

#### (b) Cause

- 3.4 A recce of the helicopters intended approach path was not properly carried out prior to landing.

### 4. SAFETY RECOMMENDATIONS

This Investigation does not support any safety recommendations.