

# FINAL REPORT

**AAIU Synoptic Report No: 2008-015**

**State File No. IRL 00900960**

**AAIU File No: 2007/0095**

**Published: 17/07/08**

**In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Air Accidents, on 24 October 2007 appointed Mr. Leo Murray as the Investigator-in-Charge to carry out an Investigation into this Accident and prepare a Synoptic Report.**

<b>Aircraft Type and Registration:</b>	Sud SE.313B Alouette II, N577AG
<b>No. and Type of Engines:</b>	1 x Turbomeca Artouste II C6
<b>Aircraft Serial Number:</b>	1666
<b>Year of Manufacture:</b>	1961
<b>Date and Time (UTC):</b>	24 October 2007 @ 15.40 hrs
<b>Location:</b>	Castlewarden, Co Kildare
<b>Type of Flight:</b>	Private
<b>Persons on Board:</b>	Crew – 2
<b>Injuries:</b>	Crew – 1 (Serious)
<b>Nature of Damage:</b>	Substantial
<b>Commander's Licence:</b>	FAA Private Pilot's Licence (Helicopter)
<b>Commander's Details:</b>	Male, aged 47 years
<b>Commander's Flying Experience:</b>	(See Section 1.4)
<b>Notification Source:</b>	Watch Manager, ATC Shannon
<b>Information Source:</b>	AAIU Field Investigation

## **SYNOPSIS**

The helicopter had taken off from a field near Newbridge and made a short flight to a landing site at Castlewarden. Two Pilots, one of whom was the owner, were on board. On the third attempt to land, control of the helicopter was lost; the helicopter struck trees and impacted heavily along the eastern boundary of the intended landing site. The owner who was occupying the right-hand seat suffered serious injuries; the left seat occupant was not injured. There was no fire.

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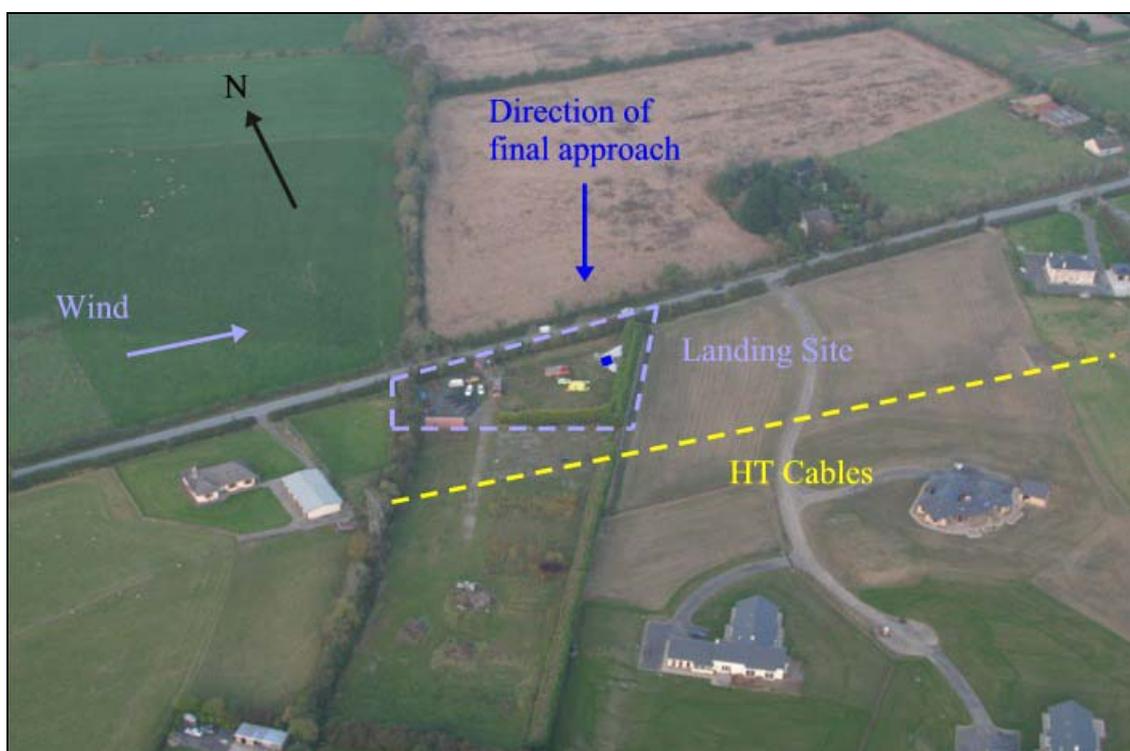
## 1. FACTUAL INFORMATION

### 1.1 Introduction

On 21 October 2007, the owner of the helicopter embarked on a cross-country flight from the helicopters base at Castlewarden to Ballinasloe, Co. Galway. He was accompanied on this flight by another pilot. The owner of the helicopter who held a Student Pilot Licence, occupied the right seat; the other Pilot, and holder of a Private Pilot Licence, occupied the left seat (See **Section 1.3 Flight Crew Information**). On the return flight from Ballinasloe the helicopter made a precautionary landing in a field near Newbridge due to the illumination of a low fuel warning light. Both Pilots shared the task of flying the helicopter during this trip. The landings at Ballinasloe and Newbridge were made by the left-hand seat occupant.

#### 1.1.1 History of the flight

On 24 October 2007, the day of the accident, the helicopter departed the field near Newbridge at 15.15 hrs with the intention of completing the original flight of the 21 October 2007 to Castlewarden. The right-seat occupant conducted the take-off and climb away. The flight was conducted under Visual Flight Rules (VFR) and routed to the south of the N7 road. After the initial climb, the left-seat occupant took control and made contact with Casement Tower on 123.5 Mhz, informing Military Air Traffic Control (MATC) of the routing. The flight was instructed to call Military Radar on 122.0 Mhz and was then cleared to operate south of the N7 not above 1,000 feet on a pressure setting of 1027 hectoPascals (hPa). When the landing area was in sight, control was returned to the right-seat occupant and the flight plan was closed by R/T with Casement at 15.23 hrs.



**Photo No. 1:** General view of Landing Site

The landing site consisted of a level grass field, with a hard-core road access area to the western side (**Photo No. 1**).

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Pylons and high-tension (HT) cables ran across the southern approach path near to the site boundary and several low-tension lines were situated close to the northern boundary. The site was surrounded by trees rising to a height of approximately 3 metres on all sides. The site was approached over Castlewarden Golf course where a wide left circuit was carried out. Due to the proximity of the HT cables and a small tailwind component, the initial approach was mis-judged with the helicopter arriving too high at the site boundary. A missed approach was carried out, followed by a tight left-hand circuit. A second approach was then flown, but this also resulted in a missed approach. The right-seat Pilot then opted to make a third approach, this time from a north-easterly direction. The final approach was flown at 60 kts with speed reducing as the landing site was approached. The helicopter descended and crossed the site boundary at a height of approximately 25-30 feet. While reducing speed to establish a hover, the right-seat occupant applied aft cyclic and the helicopter began to yaw left. Anti-torque pedal was applied to correct this yaw, but the helicopter began to rotate with increasing rapidity about the yaw axis. High levels of vibration were felt through the cyclic. The right-seat occupant was unable to bring the helicopter under control and called for the left-seat occupant to take over. The helicopter made approximately six turns about the yaw axis when the main rotor blades came into contact with trees along the eastern boundary (**Photo No. 2**). The helicopter impacted the ground with large vertical deceleration forces and came to rest with the engine still running. The left-seat occupant shut down the engine and exited the helicopter without injury. The right-seat occupant however, sustained serious injuries in the impact and was rendered unconscious for a few moments. On regaining consciousness he recalled hearing fuel spill from the ruptured fuel tank. Although injured, he managed to reach and isolate the battery switch. He was then assisted in evacuating the helicopter by the other occupant and a member of the public who had arrived at the scene.



**Photo No. 2:** Main wreckage and severed tail boom

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## 1.2 Radar Information

Air Traffic Services at Dublin Airport provided the Investigation with a recording of the Area Radar for the duration of the event. The Radar recording reveals the helicopter with Transponder set to 7000 (general aviation code) with groundspeed indicated, but no altitude information. The helicopter approached from the southwest and made a wide left circuit. The helicopter then slowed for an initial approach, followed by a tight left-hand circuit. The helicopter then proceeded across the landing site heading northeast and made a left turn, approaching the site again from the northeast. On passing the landing site the helicopter turned left and disappeared off the radar due to low altitude. There is a brief return 20 seconds later followed by a further brief and final return after 27 seconds. During all manoeuvring at the landing site, large and abrupt changes in groundspeed were observed on the radar return.

## 1.3 Technical Examination

### 1.3.1 General

The AAIU were notified about this accident by the Watch Manager, ATC Shannon at 16.00 hrs on the day of the accident. Two Inspectors of Air Accidents attended the scene a short time later. Initial inspection of the scene revealed that the helicopter remained relatively intact following the impact, but with the entire tail rotor and tail plane assembly sheared off at the rear of the boom framework. Trees adjacent to the wreckage showed evidence of main rotor contact. A large portion of the tail rotor driveshaft was found amongst the trees. The wreckage was recovered early the following day to the AAIU facility at Gormanston, Co. Meath for further technical examination.

### 1.3.2 Structure

The entire structural framework of the helicopter was found distorted and fractured. This is indicative of large vertical deceleration forces on impact. Almost all the main tubing structure was distorted, the landing skids and shock struts all showed evidence of high impact forces. A section of airframe tubing ruptured the fuel tank on the right side allowing the contents to spill. The entire lower section of the fuel tank was crushed by impact.

### 1.3.3 Rotor head and gearbox

The main rotor blades were severely damaged. The tail rotor driveshaft recovered nearby was badly distorted. The main gearbox and rotor head were generally intact; two of the three pitch links were fractured. One link (identified as 'red') was complete, however, the central portion was bent through 90 degrees and fractured. A second link (identified as 'blue') was fractured at either end. The centre portion was missing with the bottom end of the fitting bent through approximately 20 degrees adjacent to the threaded connection. The third link (identified as 'yellow') was intact. The tail rotor shaft, pitch-link components and severed tail-boom were subjected to analysis by an independent laboratory. Detailed examination with the aid of a stereomicroscope revealed fibrous fractures throughout, all being typical of a single event overload failure. There was no indication of any material or manufacturing defect associated with any of the fractures examined. Neither was there any indication of pre-existing cracking associated with any of the fractures. The helicopters logbook was supplied by the owner and revealed that an engine replacement was made some months prior to the accident.

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## 1.3.4 Controls

The cyclic and collective controls were checked for continuity and correct operation. No defects were found. The anti-torque pedal control runs were found continuous up to the impact damage of the tail-boom. The severed tail rotor section revealed no pre-impact defects.

## 1.3.5 Seats and harnesses

The support structure of the right front seat had collapsed. The grip of the right-seat collective control was found broken in two, the grip being attached only by its electrical wiring. The left seat and support structure were undamaged. The harnesses of both seats were found open; all harness attachment points were intact.

## 1.4 Flight Crew Information

### 1.4.1 Right-seat<sup>1</sup> Occupant

The right-seat occupant (and owner of the helicopter) possessed a USA Student Pilot Licence with a Rotorcraft (Helicopter) Rating, issued by the Federal Aviation Administration (FAA), together with an FAA Class III Medical Certificate issued on 12 April 2007. He also possessed an Irish Student Pilot Licence, (Helicopters) issued by the Irish Aviation Authority (IAA) on 12 February 1992. The Irish SPL was valid from 21 November 2003 until 20 November 2008. His Class II Medical Certificate associated with this Licence was issued on 10 November 2003 and had expired on 10 November 2005.

In general, his flying experience was gained over the previous 17 years as time and resources allowed. Apart from some initial fixed wing time, the bulk of his flying experience was acquired on the Robinson R22 helicopter. The only solo flight time recorded in his logbook was in 1993 when three solo flights were made totalling 1 hour. While in the USA in October 2004, the Pilot undertook 18 hours and 42 minutes of dual instruction on the Alouette II; no solo flights were made during this time. The last recorded entry in his logbook is dated 8 June 2005 and shows total flying of 68 hours flight time.

### 1.4.2 Left-seat Occupant

The left-seat occupant possessed a USA Private Pilot Licence with a Rotorcraft (Helicopter) Rating issued by the FAA on 30 June 2004, together with an FAA Class II Medical Certificate issued on 3 May 2006. The Pilot's logbook revealed most of his helicopter training was carried out on the Robinson R22, with some experience on the R44. Following his PPL (H) Flight Test on 30 June 2004, he acquired approximately 18 hours experience on the Bell 206, with some additional experience gained on other helicopter types. His logbook indicates on several pages that the flying time entered includes 'passenger flying'. He indicated to the Investigation that his flying experience prior to the accident was 52.1 hours Under Training and 51.4 hours as Pilot-in-Command. A Biennial Flight Review as required under FAR Part 61<sup>2</sup> was carried out on 16 June 2006 in an R44 type helicopter and endorsed in the Pilot's logbook by an authorised Certified Flying Instructor (CFI).

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<sup>1</sup> With one qualified pilot onboard, the helicopter is flown from the right-hand seat

<sup>2</sup> **FAR Part 61**:Federal Aviation Regulations, Part 61 Certification of Pilots, Flight Instructors and Ground Instructors

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## 1.5 Aircraft Information

The Alouette II (Serial No. 1666) was manufactured by Sud Aviation in November 1961 under the type designation SE.3130. It was powered by a Turbomeca Artouste II C2 single-shaft turbine engine and was equipped with dual controls. In January 1999, a complete re-build was undertaken on the airframe, being re-designated as an SE.313B. The owner informed the Investigation that he had acquired the Alouette II in the United States. On 18 October 2004 it was registered as N577AG to a Trustee on behalf of the owner. He stated it was his intention to bring the helicopter to Ireland where he would complete his flight training to PPL standard. On 1 October 2005, arrangements were made by the owner for the helicopter to be crated and shipped to Ireland.

After transport to Ireland, the engine then installed (Serial No. 1158) was found to have incurred significant internal damage. The circumstances of how this damage occurred could not be established. The owner contacted the engine manufacturer regarding the damage and he was advised that the engine required replacement. During 2007, another engine (Serial No. 1131) was sourced in the USA and installed in N577AG. The helicopter was returned to airworthy status on 10 July 2007. At the time of the accident the airframe had accumulated a total of 8,433 hours, the replacement engine had 354.5 service hours remaining.

## 1.6 Meteorological Information

The flight was conducted under Visual Flight Rules (VFR) conditions. The Investigation requested Met Éireann to supply a record of measured winds at Casement from 14.00 hrs to 17.00 hrs on the day of the accident. This report reveals that winds were generally westerly varying between 250 and 310 degrees. Wind speed was recorded between 4 to 7 kts. At the time of the accident (15.35 hrs), the wind at Casement was given as 285 degrees T (True) at 5 kts, varying between 260 and 310 degrees, a visibility in excess of 10 km, with 'few' cloud at 2,000 feet. Temperature was 12 °C, dew point 5 °C with a QNH<sup>3</sup> of 1027 hPa.

## 1.7 Interviews

### 1.7.1 **Right-seat Occupant (Owner)**

On 28 September 2007, the helicopter was positioned from Weston to Castlewarden. This was the only landing made at the Castlewarden site prior to the accident. He described the flight of 21 October 2007 to Ballinasloe, where an unscheduled landing was made in a field near Newbridge, due to the illumination of the low fuel warning light. Three days later, on 24 October 2007, the helicopter had been refuelled and the flight was continued from Newbridge to Castlewarden. During interview he stated that 'both pilots' were taking turns to fly the helicopter. *'During the final approach (the left-seat occupant) was with me on the controls again. As the helicopter began to slow down it began to nose up a bit, lurched to the left as we came to a stop. Putting on the collective she began to turn. I applied pedal power to stop it, couldn't stop it. I thought I couldn't go forward because of the power lines in front. We had to get it down to the ground as fast as we could and hold it in the position we were in. We were letting down the collective and we were getting faster and faster. I was holding the cyclic where it was, I remember the cyclic being pulled out of my hand'*. He described significant vibration when the rotation about the yaw axis began and control was lost.

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<sup>3</sup> QNH: Altitude above mean sea level based on local station pressure.

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### 1.7.2 Left-seat Occupant

The left-seat occupant told the Investigation that when agreeing to accompany the owner on the flight of 21 October 2007, he was aware that the owner only possessed a Student Pilot Licence (Helicopter). Before the departure to Ballinasloe, he was given a briefing by the owner, including the pre-flight inspection on the Alouette II. During this flight he flew the helicopter for a period of time including the landings at Ballinasloe and Newbridge. With regard to the accident flight his recollection of the final approach was as follows: *'(the right-seat pilot) took control and approached across the golf course. Coming in at 60 kts, slightly high at 50-60 feet. The (right-seat occupant) brought up the collective to bring in a bit of power and with that the vibration of the helicopter was just phenomenal. With that I grabbed the controls, the cyclic and collective. He shouted to me to take it and with that she went into a ferocious spin to the left. I remember grabbing the controls and, pressing the pedals, I can't say if there was pressure on the pedals, there was nothing happening, there was no response. I had my feet on the pedals when I took over, I remember pressing both pedals. Because we still had forward speed my main consideration was to keep it back from the wires, this all happened in seconds, and the cyclic vibration was terrible, all over the place. I remember from previous training to clear the swash plate left and right, the main thing was to keep it level, we were coming down and I just remember seeing the trees beside me. I switched off some switches. Fuel was all over the place.'*

The left-seat occupant later indicated to the Investigation that all three approaches were from a direction of 020 degrees to the landing site. Consequently there was no requirement to transition over the HT Cables. He also ascertained that there was negligible crosswind and furnished a report from Met Éireann to support this. He also made the following statement regarding the sharing of handling duties:

*'While we did share handling duties throughout the flight and there was no 'formal handover of control' there was, nevertheless, a clear and distinct separation during the accident. The handover was conducted during a split second emergency with the right-seat pilot clearly relinquishing control at a defined point. There was no occasion where both pilots were 'on the controls' at the same time.*

### 1.7.3 Witness Interview

A witness, situated in his back garden to the west of the accident site, stated that he saw the helicopter approach the landing site at about 600 ft heading in a southerly direction. He then saw it descend and wash off speed, entering a steady rotation to the left, making about six turns before impact. The witness, who was also a helicopter pilot himself, stated that he initially thought that an autorotation was being practiced, but observed the helicopter rotating rapidly and descending without any recovery being evident. He proceeded quickly to the scene and rendered assistance to the injured pilot.

### 1.8 Helicopter handling characteristics

All French built helicopters, including the Alouette II, have the main rotors rotating in a clockwise direction (when viewed from above). However, the majority of helicopters built (American and Italian) have the main rotors rotating in an anti-clockwise direction. For a clockwise main rotor rotation the helicopter will yaw to the left when power is applied.

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To counteract this tendency to yaw left, opposite right pedal (anti-torque) is required to maintain directional control. A reduction of power will induce a yaw to the right, thereby requiring opposite left pedal. For an anti-clockwise main rotor rotation, the anti-torque pedal inputs will be opposite to that described above. While these different handling characteristics are part and parcel of flying different helicopters types, non-type rated or inexperienced pilots flying different types could become confused with regard to the correct use of the rudder pedals, particularly when under high workload or high demand situations.

## 2. ANALYSIS

### 2.1 General

The Investigation did not identify any technical defects with the engine or airframe that could have led to, or contributed to, a loss of control. Weather conditions were good on the day and not an immediate factor in the accident. The Investigation therefore focused on the handling of the helicopter during the final phase of the third and last approach.

### 2.2 Accident Landing Site

The intended landing site would be classified as a confined area as it was relatively small in size, it was surrounded by hedgerows and trees with HT cables in close proximity to the site boundary. To carry out a safe approach and landing, the helicopter would have to establish an out of ground effect (OGE) hover and enter the site vertically.

### 2.3 Handling

A total of three approaches were attempted to the intended landing site. The right-seat occupant thought that the two initial approaches were made from the west followed by the final approach from the northeast. The left-seat occupant maintains that all three approaches were made from the northeast. Radar recording obtained from Dublin ATC confirm that the first two approaches were flown from the southwest, with a small tail wind component, and a requirement to transition near the HT cables. Both these approaches terminated in missed approaches as the helicopter arrived too high over the landing site. The third approach was flown from the northeast, which gave a small crosswind component from the right, but kept the HT cables ahead of the landing site.

As the helicopter transitioned from the approach phase to the flare/OGE hover, there would have been a demand for increased power in order to arrest the descent and establish the hover. The application of power (increase in collective), coupled with the right side wind component would have induced a yawing moment to the left. For the helicopter to establish an out of wind OGE hover, the power demand would have been significant, as would the requirement be to put in opposite rudder (right pedal) to counteract the left yaw and maintain directional control.

Indications are that in this particular case, insufficient right rudder was applied by the right-seat occupant, while attempting to establish an out of wind OGE hover and control in the yawing axis was lost. The lowering of the collective would have increased the yaw demand and exasperated the situation. Witness accounts provided by both occupants also indicate that handling control of the helicopter was being shared. The basis of controlled flight is such that only one person can be on the controls at any one time, unless it is a 'follow through' exercise with a qualified flying instructor.

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There are clear guidelines associated with handing over control and it is imperative that the term 'You have control' – 'I have control' is used to ensure compliance with any control handover. Outside of instructional details, if two pilots are on the controls at the same time, the sensitivity of control can be lost and, in fact, actual control can be impeded as a result of inputs by the other pilot.

It cannot be ruled out that this sharing control of the helicopter contributed to the initial unset of loss of control or indeed that an inappropriate control input was made by either occupant while attempting to establish the hover.

### **2.4 Flight Crew Licensing/Experience**

#### **2.4.1 Right-seat Occupant**

The right-seat occupant/owner held two Student Pilot Licences, one issued in Ireland and the other in the USA. The Medical certificate pertaining to the Irish Licence had expired, thereby rendering the licence invalid at the time of the accident. The USA issued licence, being a Student Certificate, is not valid in Ireland. Neither does the Class III Medical Certificate pertaining to this licence meet the European JAR-Flight Crew Licensing requirements. To that effect the right-seat occupant was not a qualified pilot and not licensed to conduct the flight. While the right-seat occupant had completed 18 hours dual instruction on type, he did not fly solo and in fact had only achieved 1 hour solo flight time 14 years previously on a different type.

#### **2.4.2 Left-seat Occupant**

The left-seat occupant was a qualified pilot having passed a USA PPL(H) Flight test in June 2004. One of the requirements to continue to operate as Pilot-in-Command is that a Flight Review is undertaken on a biennial (2-yearly) basis to maintain proficiency. This Flight Review was undertaken by this pilot, and an endorsement was entered in his logbook by a CFI to that effect as required under FAR Part 61. The left-seat occupant acknowledged that he was aware of the fact that the right-seat occupant had only a Student Licence. As the right-seat occupant's licence was not valid, the left-seat occupant became the Pilot-in-Command. However, as the left seat occupant was not a qualified instructor he should have been occupying the right-hand seat. The left-seat occupant had accumulated approximately 85 hours on different helicopter types, but he had only carried out one previous flight in the Alouette II three days prior to the accident.

### **2.5 Comment**

This accident clearly demonstrates the risks associated with individuals who do not adhere to the laid down training and licensing requirements. The purpose of a Student Pilot's Licence is to allow the Student to gain proficiency in the operation of the aircraft under the supervision of a duly qualified Flight Instructor. This supervision includes both dual instruction and solo flight by the student. Before authorising the Student to fly solo the instructor must be satisfied that the Student has the necessary skills and experience to deal with situations, which could be encountered including normal and emergency procedures and adverse weather etc. Following a period of training (40 hours) if the student has achieved the required standard, he/she may apply to the IAA for a flight examination. Successful candidates will be awarded a Private Pilot's Licence (PPL). Licensing requirements for pilot licences are set out in SI No. 333 Irish Aviation Authority (Personnel Licensing) Order, 2000.

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This document details the requirements for, and privileges of each category of Flight Crew licence. The privileges of an Irish Student Pilot Licence are set out in **Appendix A**. The right-seat occupant's FAA Student Certificate was not valid in Ireland. However, he chose to fly regardless and asked a qualified pilot to accompany him. The role of the left-seat occupant would appear to have been to 'keep an eye' on the right seat occupant. However the left-seat occupant was not entitled to do this as he was not a Flight Instructor.

With regard to helicopter licensing generally, the IAA requires a type rating for each helicopter to be flown, while the FAA does not have such a requirement. The left-seat occupant took advantage of the FAA licensing system and acquired some experience on a number of different types. However, the disadvantage of such a system is that the pilot does not have an in-depth knowledge of each particular type as would be required through a specific type rating.

The AAIU has investigated a number of accidents to American registered aircraft operating in Ireland where significant issues relating to licensing and regulatory matters have been identified. A recent initiative developed between the IAA and the FAA now allows for IAA Inspectors to check on American registered aircraft and licence holders as part of their national surveillance programme (**Appendix B**). The AAIU fully supports this initiative.

### 3. **CONCLUSIONS**

#### **(a) Findings**

1. The right-seat occupant/owner undertook flight in a helicopter without an appropriate licence or the supervision of a duly authorised Flight Instructor. As a result, the right-seat occupant/owner was not licensed to conduct the flight.
2. As the right-seat occupant was not licensed to conduct the flight, the left-seat occupant became the Pilot-in-Command. The left seat occupant was not a qualified instructor and therefore he should have been occupying the right-hand seat.
3. There were no pre-impact technical defects found on N577AG that could have led to, or contributed to, a loss of control.
4. The general weather conditions were not an immediate factor in this accident.
5. Control of the helicopter was lost during the third attempt to land in a confined area.
6. Both occupants of the helicopter were sharing handling duties during the course of the flight. No formal 'handover of control' was carried out and it is possible that both individuals were 'on the controls' at the same time during the final moments of the flight.
7. While attempting to achieve an out of wind/out of ground effect (OGE) hover, the right-seat occupant lost yaw control and relinquished this loss of control to the left-seat occupant.
8. The left-seat occupant did not have sufficient experience on type or the appropriate qualification to carry out a safe recovery in the circumstances.
9. During the descending rotation about the yaw axis, the main rotor blades struck trees on the perimeter of the landing site. The helicopter impacted the ground heavily with consequential serious damage.
10. The right-seat occupant sustained serious injuries.

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### (b) Probable Cause

Control of the helicopter was lost while attempting to land in a confined area.

### (c) Contributory Factors

1. Neither occupant of the helicopter had sufficient type experience to conduct a landing into such a confined area.
2. It is possible that both individuals were 'on the controls' at the same time during the final moments of the flight.
3. The left-seat occupant, who was not a qualified instructor, did not have sufficient experience on type, or the appropriate qualification, to carry out a safe recovery following loss of control.

### 4. **SAFETY RECOMMENDATIONS**

This Report does not sustain any Safety Recommendations.

## Appendix A

### Irish Aviation Authority

#### Privileges pertaining to a Student Pilot's Licence

The holder of this licence may act as pilot-in-command of an aircraft under the following conditions only: -

the holder shall be at least 16 years of age;

all flights shall be individually authorised by, made under the supervision of, and in accordance with instructions given by a duly authorised instructor;

all flights shall be made within the territorial limits of the state unless otherwise permitted by the authority;

no passenger may be carried in the aircraft;

flight at night shall be in accordance with the IAA Rules of the Air currently in force and in accordance with JAR-FCL 2.125 (c) (2) – (rule for IR(A) holders only);

radio-telephony and radio navigation equipment on board the aircraft may only be used for such purposes and to such extent as is authorised by a duly authorised flight instructor;

no solo flight (aerodrome circuit), solo cross-country flight (navigation) or solo night flight shall be undertaken unless and until a duly authorised instructor has, by signing and dating in ink the appropriate certificate attached to this licence, certified that the holder of the licence has received the required flight training and theoretical knowledge training to undertake the type of flight proposed and has demonstrated that such holder is competent to do so.

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## Appendix B



**IRISH AVIATION AUTHORITY**  
ÚDARÁS EITLÍOCHTA NA HÉIREANN

# US Registered Aircraft and FAA Licence Holders

- The Irish Aviation Authority (IAA) is pleased to announce that it has agreed new surveillance procedures for N (US) registered aircraft operating in Ireland.
- These procedures also apply to Federal Aviation Administration (FAA) licence holders.
- The FAA has agreed that IAA inspectors may now check all N registered aircraft and licence holders as part of our national programme.
- All ATC incidents, airspace violations, airworthiness and operating issues, and discrepancies relating to N registered aircraft will be reported by the IAA on a monthly basis to the FAA New York office for follow up.
- The IAA will review follow up actions with the FAA periodically.
- It is IAA policy that aircraft based substantially in this State should be on the Irish (EI) register.

For further information on registering general aviation aircraft, contact:  
Flan Garry, Aircraft Registration, Irish Aviation Authority,  
Aviation House, Hawkins Street, Dublin 2.  
Tel: 01 603 1186 Fax: 01 679 2934 Email: [registration@iaa.ie](mailto:registration@iaa.ie)



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