



# **Air Accident Investigation Unit Ireland**

**SYNOPTIC REPORT**

**ACCIDENT**

**Westland Gazelle HT Mk.3 (SA 341), G-BXTH  
Abbeyshrule, Co. Longford, Ireland**

**15 July 2015**



**Ah Roinn Iompair  
Turasóireachta agus Spóirt**

Department of Transport,  
Tourism and Sport

## FINAL REPORT

**Foreword**

This safety investigation is exclusively of a technical nature and the Final Report reflects the determination of the AAIU regarding the circumstances of this occurrence and its probable causes.

In accordance with the provisions of Annex 13<sup>1</sup> to the Convention on International Civil Aviation, Regulation (EU) No 996/2010<sup>2</sup> and Statutory Instrument No. 460 of 2009<sup>3</sup>, safety investigations are in no case concerned with apportioning blame or liability. They are independent of, separate from and without prejudice to any judicial or administrative proceedings to apportion blame or liability. The sole objective of this safety investigation and Final Report is the prevention of accidents and incidents.

Accordingly, it is inappropriate that AAIU Reports should be used to assign fault or blame or determine liability, since neither the safety investigation nor the reporting process has been undertaken for that purpose.

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<sup>1</sup> **Annex 13:** International Civil Aviation Organization (ICAO), Annex 13, Aircraft Accident and Incident Investigation.

<sup>2</sup> **Regulation (EU) No 996/2010** of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation.

<sup>3</sup> **Statutory Instrument (SI) No. 460 of 2009:** Air Navigation (Notification and Investigation of Accidents, Serious Incidents and Incidents) Regulations 2009.



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In accordance with Annex 13 to the Convention on International Civil Aviation, Regulation (EU) No 996/2010 and the provisions of SI 460 of 2009, the Chief Inspector of Air Accidents on 15 July 2015, appointed Mr John Owens as the Investigator-in-Charge to carry out an Investigation into this Accident and prepare a Report.

<b>Aircraft Type and Registration:</b>	Westland Gazelle HT Mk.3 (SA 341), G-BXTH	
<b>No. and Type of Engines:</b>	1 x Turbomeca Astazou IIN2	
<b>Aircraft Serial Number:</b>	WA1120	
<b>Year of Manufacture:</b>	1973	
<b>Date and Time (UTC)<sup>4</sup>:</b>	15 July 2015 @ 20.19 hrs	
<b>Location:</b>	Abbeyshrule, Co. Longford	
<b>Type of Operation:</b>	Private	
<b>Persons on Board:</b>	Crew - 1	Passengers - 1
<b>Injuries:</b>	Crew - Nil	Passengers - Nil
<b>Nature of Damage:</b>	Helicopter destroyed Substantial damage to adjacent building	
<b>Commander's Licence:</b>	PPL <sup>5</sup> (Helicopter) issued by the United Kingdom (UK) Civil Aviation Authority (CAA)	
<b>Commander's Details:</b>	Male, aged 63 years	
<b>Commander's Flying Experience:</b>	3,700 hours, of which 440 were on type	
<b>Notification Source:</b>	Passenger	
<b>Information Source:</b>	AAIU Field Investigation, AAIU Report Form submitted by the Pilot	

<sup>4</sup> **UTC:** Coordinated Universal Time. All timings in this report are quoted in UTC; to obtain the local time add one hour.

<sup>5</sup> **PPL:** Private Pilot Licence.

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### SYNOPSIS

While attempting to land on a canal bank adjacent to a restaurant/guesthouse in Abbeyshrule, Co. Longford, the main rotor blades of the helicopter made contact with a timber-clad wall of the building. This caused the tail of the helicopter to swing rapidly towards the wall and collide with it. The tail boom separated from the helicopter, broke apart, and came to rest in the canal. The helicopter rolled to the right and impacted with the canal bank. Debris was scattered over a large area of the canal and its bank. There was no fire. The Pilot and Passenger evacuated the helicopter and were uninjured. One person, who was in the building at the time of the event, received minor injuries.

### NOTIFICATION

The Passenger advised the AAIU of the accident at approximately 20.30 hrs. Two AAIU Inspectors travelled to the scene and arrived there shortly before midnight to commence the Investigation.

## 1. FACTUAL INFORMATION

### 1.1 Background

The helicopter had recently been flown from the United Kingdom (UK) by the helicopter Owner's regular pilot and was parked in the grounds of a guesthouse located near Mullingar, Co. Westmeath.

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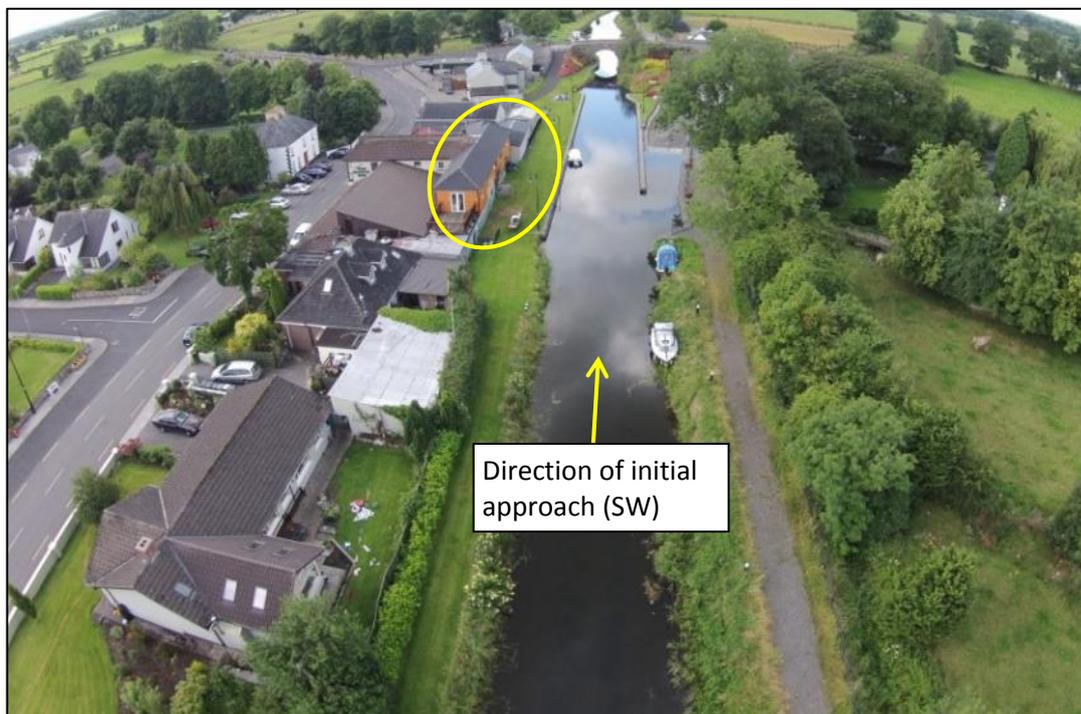
The Pilot who flew the helicopter on the accident flight informed the Investigation that he was asked by the helicopter Owner, who was known to him, to fly the helicopter back to the UK and that the Owner did not query him on his experience or type approval on the helicopter. He said that as a result of the Owner's request for assistance, it was apparent that he had permission to fly the helicopter. However, the Owner stated that his expectation was that he would meet with the Pilot, whom he had previously flown with in the Pilot's own helicopter, to discuss their mutual understanding of any agreement to operate the helicopter and that the Pilot would confirm his qualifications and currency, prior to the commencement of any flight. Further evaluation of this aspect is beyond the scope of this Safety Investigation.

### 1.2 History of the Flight

The helicopter took off from the grounds of the guesthouse located near Mullingar for the flight to Abbeyshrule, which was approximately 3.5 nautical miles to the northwest, with the Pilot and one Passenger on board. The Pilot said it was planned to spend the night in the restaurant/guesthouse in Abbeyshrule, before flying the helicopter to the UK with its Owner. The helicopter Owner was already present in the restaurant/guesthouse. The Pilot stated that he had never been to Abbeyshrule before. However, the Passenger was a pilot who was familiar with the local area.



The helicopter arrived in the vicinity of the restaurant/guesthouse in Abbeyshrule at approximately 20.16 hrs<sup>6</sup>. As it approached the restaurant/guesthouse, the helicopter descended and flew low in a south-westerly direction along the canal (**Photo No. 1**).



**Photo No. 1:** Aerial photograph, showing the restaurant/guesthouse in Abbeyshrule (circled) and the direction of initial approach

The restaurant/guesthouse at the accident site was a two-storey building, approximately 24 metres (m) long. The ground floor wall was of solid construction, whilst the upper storey was timber-framed and timber-clad. A single storey section extended to the northeast. The northwest facing wall of the building ran parallel to the bank of the Royal Canal.

When the helicopter was abeam the restaurant/guesthouse, it turned 90 degrees to the left, to point towards the building. The helicopter was then manoeuvred towards the building, while descending and rotating further to the left. CCTV footage shows that at this point, the helicopter Owner appeared on the canal bank and the helicopter climbed away.

The helicopter Owner moved some garden furniture from the canal bank and the Pilot made a second approach. The final stage of the second approach was flown initially in a nose-in orientation, perpendicular to the canal bank and the northwest facing wall of the building. The Pilot then turned the nose to the left by approximately 30 degrees, before moving closer to the building.

<sup>6</sup> Timings based on local Closed Circuit Television (CCTV) footage obtained by the Investigation.

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As the helicopter was being manoeuvred to align it parallel to the canal bank and the wall of the building (on a north easterly heading), while at the same time descending and moving closer to the building wall, the main rotor blades made contact with the timber-clad section of the wall. This caused the tail of the helicopter to swing rapidly towards the wall and collide with it. The tail boom separated, broke apart and came to rest in the canal. The helicopter rolled to the right and impacted the canal bank, breaking the right hand cockpit canopy. The main rotor blades, although badly damaged, remained attached to the rotor hub. Debris was scattered over the canal and the canal bank adjacent to the building. The helicopter came to rest on its right hand side on the canal bank, on a heading of approximately 320 degrees magnetic (**Photo No. 2**).



**Photo No. 2:** Final position of G-BXTH (Post event date in daylight conditions)

The Pilot and Passenger evacuated the helicopter through the broken cockpit canopy. Emergency services arrived shortly thereafter. Neither occupant reported injuries. There was no fire.

The Investigation was informed that there were three people in a large function room situated on the ground floor of the restaurant/guesthouse at the time of the event. The wall that was struck bounded the function room and a first floor bedroom. One of the persons present in the function room received a small cut below his left eye.

Several onlookers had gathered to the southwest of the restaurant/guesthouse on the canal bank as the helicopter was attempting to land. The onlookers ran away as the helicopter collided with the building and at least one of them fell as he ran.

### 1.3 Video Evidence

Mobile phone video footage and CCTV recordings provided to the Investigation showed the attempted landing, the collision and the onlookers.



## 1.4 Interviews and Statements

### 1.4.1 The Pilot

The Pilot was interviewed on the night of the event and provided an account of the accident. He said he had arrived in Ireland earlier that day, having been asked by the Owner of the helicopter to fly it back to the UK.

When asked about the flight to Abbeyshrule, he stated *“we flew here with the express purpose of landing here and spending the night ‘cause that’s where the owner was staying”*. He stated that he was *“very familiar with landing in close proximity [to other objects], I do it on a regular basis”*. The Pilot remarked that he knew the landing site was *“very tight, but it was certainly do-able”*. He mentioned that he performed two approaches and noted that *“there was a lot of wires around too and there’s of course the lamp posts”*.

Regarding the final moments of the attempted landing, the Pilot stated that *“I was very aware of where my blades were in relation to the wooden wall of the hotel building. I was completely aware of it and just in the last couple of seconds, when I was at a skid height of say six inches, I allowed [...] the machine to drift into the side of the wall. I am just being frank and forthright with this. There was never any question about the machine being defective in any way. It was just simply a momentary lapse of my concentration [...]”*. He said that he was *“concentrating on a bollard, which I knew was there for tying down the boats on the side of the canal and I was concentrating [on] where that was to the skid”* and that he *“turned over to look for it and lost concentration”*.

He described the weather conditions as being calm.

### 1.4.2 The Passenger

The Passenger was also interviewed. He said he collected the Pilot earlier that day to bring him to the guesthouse near Mullingar, Co. Westmeath, where the helicopter was situated. When asked if it was intended to fly from there to the guesthouse in Abbeyshrule, he said that the original intention was to drive there.

Concerning the accident flight, the Passenger stated that *“we were going to land in a field close, just the north side of the canal, and then he [the Pilot] saw the possible landing site outside the [restaurant/guesthouse]”*. The Passenger said that *“within a foot of the ground [...] I think his attention was caught on the buoy [mooring bollard] that was used for tying the ropes to the boat on the edge of the concrete portion of the banks of the canal, and drifted very slightly south and probably within a foot of the ground and clipped, probably the eave<sup>7</sup> first, I think that’s when we noticed it was the eave of the gutter and then within three seconds, I was climbing out of [...] the helicopter”*.

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<sup>7</sup> Video evidence indicates that the first contact was with the timber-clad wall of the property, not the eave.

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### 1.4.3 Witness Interview

The owner of the restaurant/guesthouse was in the building at the time of the accident. He said that when he heard the noise of the helicopter, he *“attempted to go out the exit door down at the far corner [of the function room] and was obviously under a bit of pressure trying to open it because of the force of the helicopter outside blowing the wind”*. He said that another person appeared behind him and then they went back inside and that someone else entered the function room at that time. The witness stated that then there was a *“bang”* and that the *“window blew in”*. He also said that *“I think the three of us ended up on the floor”*. He informed the Investigation that he was aware that additional guests were due to arrive, but that *“there was nothing to suggest that they would be coming by helicopter”*.

### 1.5 Personnel Information

The Pilot held a PPL (Helicopter) and a valid Class 2 Medical Certificate, both of which were issued by the UK CAA. The SA 341 helicopter type was listed in *‘Ratings to be Revalidated’* section of the licence. No remarks or restrictions were included. There were no entries on the *‘Certificate of Revalidation’* page. The CAA subsequently advised the Investigation that the SA 341 helicopter type rating was issued to the Pilot on 19 August 2011 and was subject to an annual revalidation. The last revalidation was issued on 30 May 2014 and according to the CAA, the type rating was expired at the time of the accident. The Pilot’s flying experience is detailed in **Table No. 1** below.

Total all types:	3,700 hours
Total rotary wing:	1,300 hours
Total on type:	440 hours
Last 90 days:	9.7 hours (all types)
Last 28 days:	8.1 hours (all types)
Last 24 hours:	0.25 hours

**Table No. 1:** Operating experience of Pilot

### 1.6 Aircraft Information

#### 1.6.1 General

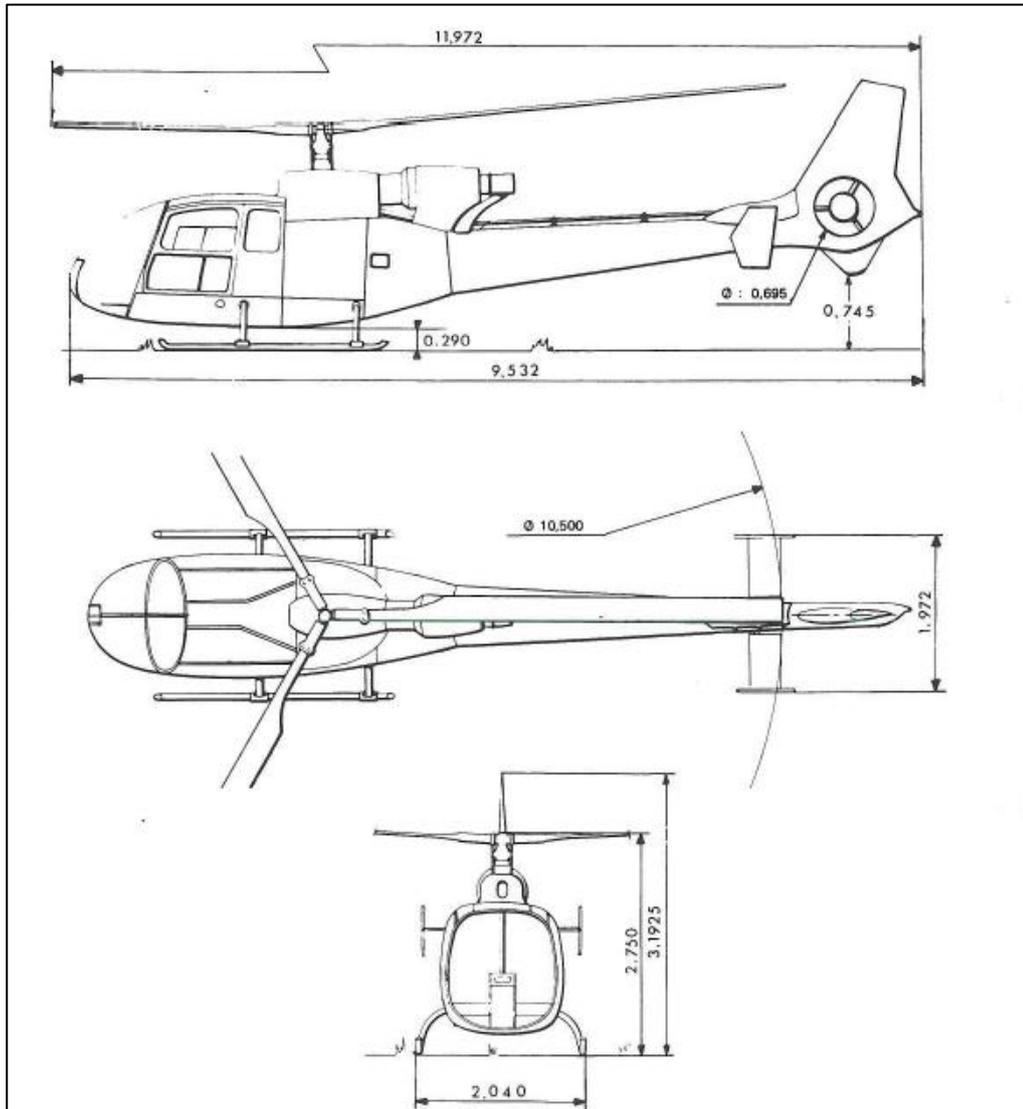
The helicopter, a Gazelle HT Mk.3 (SA 341), was manufactured in 1973 by Aérospatiale through a joint production agreement with Westland Helicopter. It was fitted with a single Turbomeca Astazou IIN2 gas turbine engine, which powered a three-blade composite main rotor and a Fenestron<sup>8</sup> tail rotor. It was initially operated as a military helicopter, before being placed on the civil register as G-BXTH in 1998. Airbus Helicopters is now the type certificate holder.

The last scheduled maintenance inspection carried out prior to the accident was a *‘25 hour’* inspection, which was performed on 13 May 2015. Following this maintenance inspection, a *‘Permit Maintenance Release Certificate’* was issued by the CAA-approved maintenance organisation. The helicopter had a total operating time of 9,577.7 hours at the time of the maintenance inspection.

<sup>8</sup> Fenestron: A shrouded tail rotor.



**Figure No. 1**, as provided by Airbus Helicopters, contains the principal dimensions of the helicopter. The overall length is 11.972 m and the main rotor diameter is 10.5 m.



**Figure No. 1:** Principal dimensions of Gazelle SA 341 (Courtesy of Airbus Helicopters)

### 1.6.2 Airworthiness Certification

A Certificate of Airworthiness is not required for the aircraft type. Instead, it operates in accordance with a 'Permit to Fly', which was issued by the UK CAA on 16 December 2011. It is stated on the Permit that it "permits the aircraft to fly within United Kingdom Airspace only, without a Certificate of Airworthiness being in force in respect thereof". However, it is further stated that this restriction for UK-only flights does not apply if permission is obtained from the appropriate authority of the country where it is intended to fly.

One of the conditions included in the conditions of operation document associated with the Flight Permit is that "the aircraft shall not be flown over any assembly or persons or any congested area of a city, town or settlement, except to the extent necessary in order to take off or land at a Government or licensed aerodrome in accordance with normal aviation practice".

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## 1.7 Damage to Aircraft

The helicopter was destroyed. The main rotor blades were badly damaged following contact with the building and the canal bank. However, they were still attached to the rotor hub and remained intact. The main rotor gearbox mountings were damaged and the engine was torn from its attachment points. The tail boom separated from the helicopter and broke into two main pieces when it impacted the building. One of these pieces included the Fenestron tail rotor, which sustained damage to its blades and shroud, but did not disintegrate. The right hand side of the cockpit canopy was shattered.

## 1.8 Other Damage

A section of the timber-clad portion of the building wall sustained substantial damage (**Photo No. 3**). A window in the ground floor function room was broken, with glass and debris being thrown into the function room. A radiator in a first floor bedroom was torn from its wall mounts by the force of the impact.

## 1.9 Meteorological Information

Met Éireann, the Irish meteorological service, was asked to provide details of the weather conditions prevailing in the area at the time of the occurrence. The meteorological report stated that there were isolated rain showers in the vicinity. The surface level wind was 230 degrees at 7 knots (kts), the surface temperature was 14<sup>o</sup> Centigrade (C), the Mean Sea Level Pressure was 1010/11 hPa<sup>9</sup> and the visibility was 10+ km (kilometres).

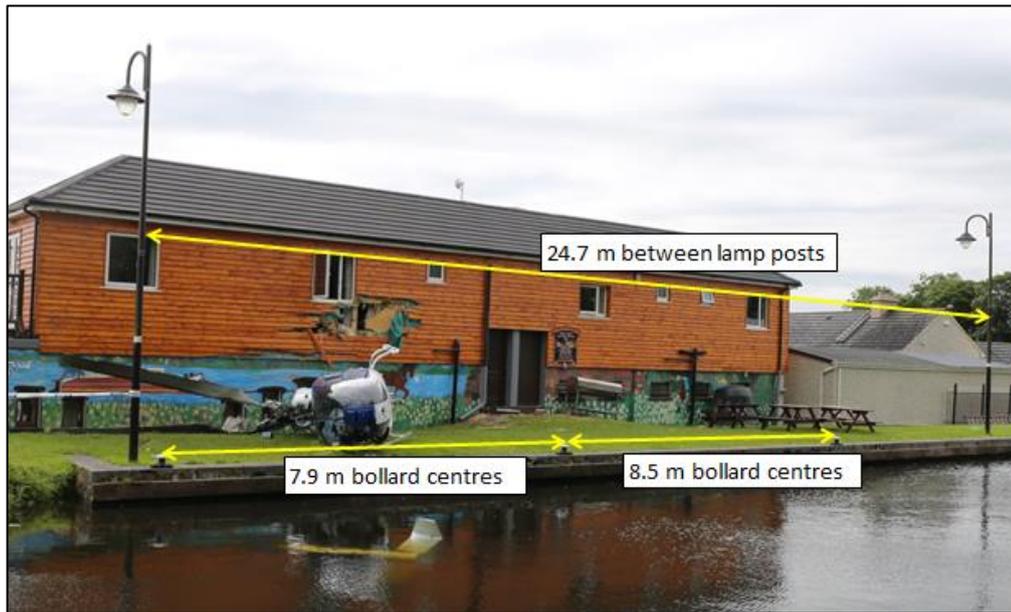
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## 1.10 Site of the Attempted Landing

The AAIU carried out a detailed survey of the accident site (**Photo No. 3**). The canal bank adjacent to the restaurant/guesthouse at the site of the attempted landing was grass-covered and reasonably level. However, the ground rose in the vicinity of the emergency exit doors situated in the middle of the northwest facing wall of the property. This wall was parallel to the canal. Two lamp posts 24.7 m apart, framed the site. A paving strip 0.55 m wide ran along the edge of the canal bank. Mooring bollards, 0.2 m in height, were fitted to this paving strip. The distance between the two bollards at the site of the attempted landing was 7.9 m. The bollard to the right (southwest) was a further 8.5 m away. The inner edges of the bollard mounting plates were approximately 0.225 m from the edge of the canal bank (**Photo No. 4**).

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<sup>9</sup> hPa: Hectopascal – A unit of pressure.

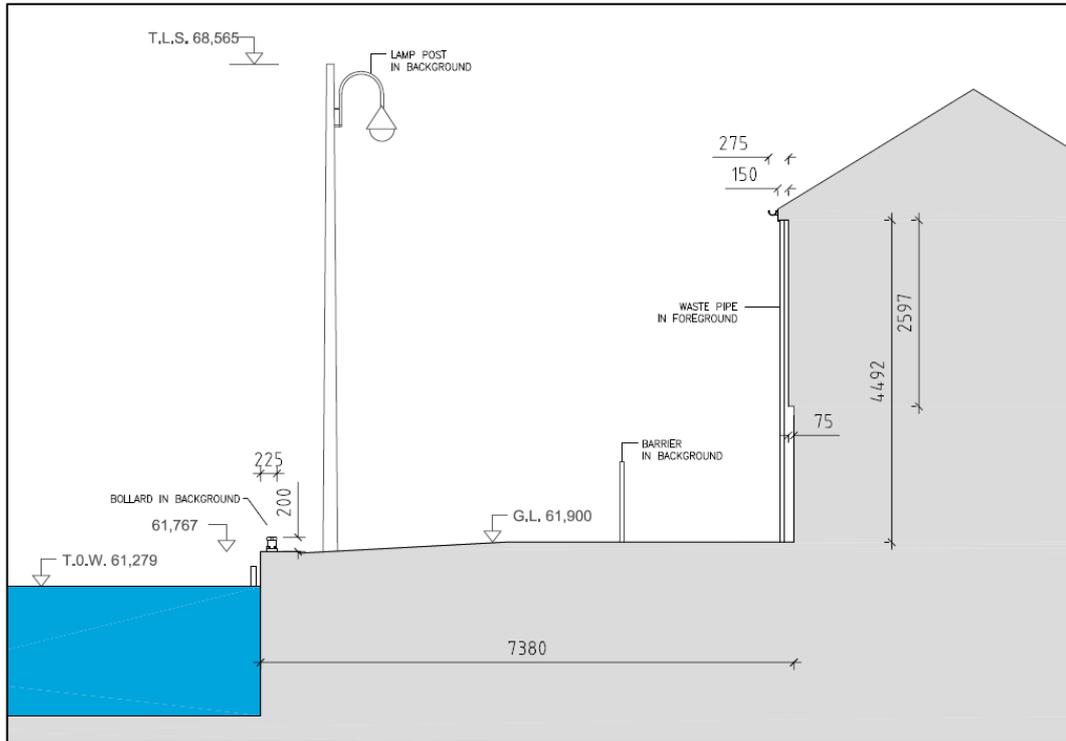


**Photo No 3:** Damage to building wall, distance between lamp posts and distance between mooring bollards



**Photo No 4:** Inner edge of mooring bollard 0.225 m from edge of canal bank

The AAU also commissioned an architectural firm to carry out a site survey. **Figure No. 2** below is based on the architectural survey. It shows that at the accident site, the width of the canal bank from the edge of the bank to the lower part of the building wall was 7,380 millimetres (mm) (7.38 m). The depth of the timber cladding was 75 mm (0.075 m). The eave of the roof is shown to overhang the timber-clad wall by 150 mm (0.15 m). The drawing also shows a gutter, attached to this eave, which increased the overhang to 275 mm (0.275 m).

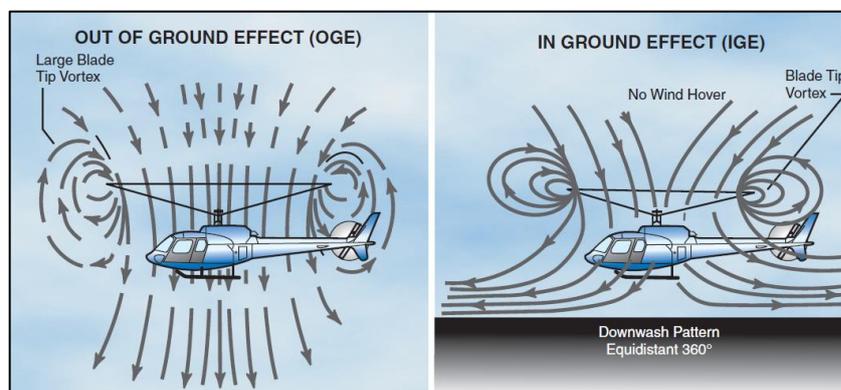


**Figure No. 2:** Dimensions of building and canal bank at site of attempted landing

### 1.11 Helicopter Aerodynamics

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When a helicopter hovers, blade tip vortices are generated which can adversely affect hover performance. When the hover is near the ground (usually at a height equal to or less than the main rotor diameter), a phenomenon known as ‘*Ground Effect*’ occurs. Ground effect results in the generation of more lift for a given blade angle and a reduction in the magnitude of the blade tip vortices (**Figure No. 3**). According to the ‘*Rotorcraft Flying Handbook*’, published by the Federal Aviation Administration (FAA) in 2000, “*Ground effect is at its maximum in a no-wind condition over a firm, smooth surface. Tall grass, rough terrain, revetments<sup>10</sup>, and water surfaces alter the airflow pattern causing an increase in rotor tip vortices*”.



**Figure No. 3:** Effects on airflow due to hovering (*FAA Rotorcraft Flying Handbook*)

<sup>10</sup> **Revetment:** Sloping structures placed on banks or cliffs to absorb the energy of incoming water.  
*Air Accident Investigation Unit Report 2017-004*



Furthermore, hovering in ground effect (IGE) close to a structure such as a building can lead to a phenomenon known as ‘*Wake Recirculation*’, whereby the downwash after it strikes the ground can be deflected upwards along the wall of the building and back down through the rotor. This can produce a non-uniform in-flow pattern, adversely affecting helicopter control.

The Pilot advised the Investigation that he considered that “*downwash/wake recirculation did not adversely affect helicopter control*”.

## **1.12 Legislation and Guidance Material relating to Helicopter Operations**

### **1.12.1 Landing Permission**

The IAA’s (Irish Aviation Authority) ‘*Aerodromes and Visual Ground Aids Order*’ (SI 355 of 2008), states in paragraph (1) of Section 5 (*Place of take-off etc. of aircraft*):

*An aircraft shall not take-off from or land at any place in the State save at:*

- (d) *in the case of a rotorcraft or balloon, not being used for public transport, any place where the aircraft may take-off or land without undue hazard to persons or property and in respect of which the owner or occupier of that place shall have given permission for such use, except that, in the case of a rotorcraft, where that place is of an elevated construction, located on the roof of a building or a structure, it shall also be licensed by the Authority under this Order for such use by that rotorcraft.*

Waterways Ireland manages the canals and canal banks of the State. They advised the Investigation that they did not receive a request for permission to land on the canal bank.

### **1.12.2 IAA Requirements for Operating Visiting Aircraft in Ireland**

The IAA’s Aeronautical Notice A.19, Issue 5, dated 3 July 2014, relates to ‘*Visiting aircraft not holding ICAO compliant Certificates of Airworthiness*’. It allows such aircraft to operate in Ireland for up to 28 days without prior permission from the IAA. However, according to the Notice, this exemption does not apply to ex-military aircraft. The IAA advised the Investigation that it would normally be the helicopter owner who would apply for permission to operate in Ireland, but that an application for such permission was not received. The Owner informed the Investigation that he was unaware of this requirement.

### **1.12.3 Guidance Material relating to Helicopter Landing Sites**

The IAA’s Operations Advisory Memorandum (OAM) No. 08/00, dated 23 May 2005, contains guidelines for heliport sites. Although the ‘*Applicability*’ section of the document states that it applies primarily to commercial operations, it also states that it is intended to provide practical guidance for other helicopter operators. Section 4.5 of Appendix 4 of the document includes the layout and minimum dimensions of a helipad suitable for use by a Bell 206, a helicopter similar in size to the subject helicopter type. It states that the minimum permitted distance from buildings/obstacles is 1.5 times the main rotor diameter and that “*it is strongly recommended that the TLOF [Touchdown and Lift Off area] should be located 30 metres or more away from buildings to avoid downwash effects on the building and noise disturbance/annoyance to persons in the building*”.

In the UK, the British Helicopter Association (BHA) promotes the compliant, safe and considerate use of rotorcraft. A BHA guidance leaflet entitled 'Setting up an Unlicensed Helicopter Site' includes a formula for calculating the recommended landing area.

$$\text{Radius of Landing Area} = ((\text{Helicopter length} \times 1.5)/2) + (3 \text{ m or } 0.25 \times \text{main rotor diameter, whichever is greater}).$$

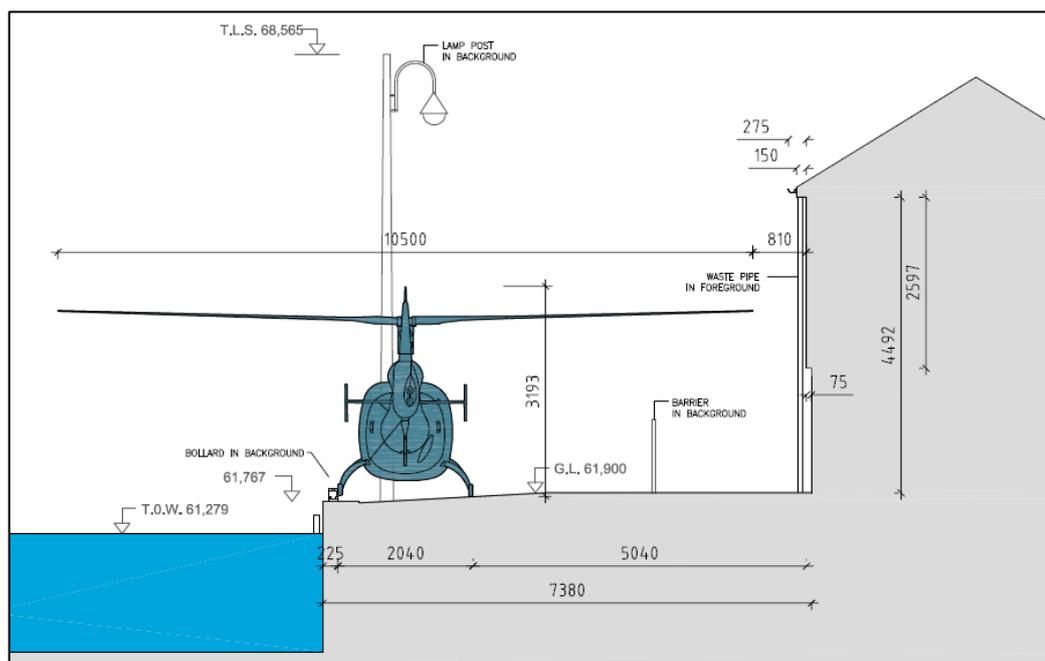
The guidance leaflet states that "there should be no obstructions in this area".

## 2. ANALYSIS

### 2.1 General

At the site of the attempted landing, the canal bank from the edge of the bank to the lower part of the wall of the adjacent restaurant/guesthouse was 7.38 m wide. The depth of the timber cladding on the upper part of the wall was 0.075 m. The eave and gutter of the building extended over the canal bank by approximately 0.275 m. The site was framed by two lamp posts 24.7 m apart. Mooring bollards were fitted to the paving strip on the edge of the canal bank. The inner edges of the bollard mounting plates were approximately 0.225 m from the edge of the canal bank

In the latter stages of the attempted landing, the Pilot was trying to ensure that the left hand landing skid of the helicopter was clear of the mooring bollards, while at the same time trying to maintain adequate blade tip clearance between the main rotor blades and the wall of the building. If the helicopter was positioned with the left hand skid just touching the inside edge of the bollard mounting plate, the maximum clearance available, between the main rotor blades and the timber-clad section of the wall of the building, would have been 0.81 m (810 mm), excluding the overhang of the eave and gutter (**Figure No. 4**).



**Figure No. 4:** Maximum blade tip clearance available (810 mm), if landing skid of helicopter was placed touching the inside edge of the bollard mounting plate



The Pilot said that he was concentrating on the location of the bollards with reference to the helicopter's left hand skid, and lost concentration regarding the position of the main rotor blades. The helicopter moved towards the building and due to the limited clearance available, the main rotor blades made contact with the timber-clad wall, and control of the helicopter was lost.

Regarding aerodynamic hazards, as the helicopter descended and approached the building, approximately half the diameter of its main rotor was over the water and the remainder was over the canal bank. In addition to the surfaces being two different types, they were not at the same level, with a possible net result of a non-uniform ground effect. A further adverse aerodynamic effect in the form of wake recirculation due to the close proximity of the helicopter to the building itself may have also been present. However, it should be noted that the Pilot considered that *"downwash/wake recirculation did not adversely affect helicopter control"*.

## 2.2 The Site of the Attempted Landing

The site of the attempted landing was very confined; it was situated on a narrow canal bank, adjacent to an occupied building located in a small village and contained numerous physical obstacles and aerodynamic hazards. Furthermore, several people had gathered nearby to watch the helicopter as it attempted to land. In addition, neither Waterways Ireland nor the owner of the restaurant/guesthouse received a request for permission to land. It should also be noted that the conditions of the helicopter's Flight Permit prohibit flight over a congested area of a town or settlement.

During the attempted landing, the helicopter's main rotor blades, followed by the Fenestron, struck the upper half of the building's northwest facing wall. This section of the wall was not of solid construction, in that it was timber-framed and timber-clad. If the main rotor blades had impacted with a solid structure, it is likely that they would have disintegrated, increasing the likelihood of serious injury from a high speed projectile. Also, impact with a solid structure would have caused greater destruction of the helicopter and possible injury to its occupants.

The IAA's Operations Advisory Memorandum No. 08/00 recommends that an object should not be closer than a distance of 1.5 times the helicopter's main rotor diameter or 30 m to the centreline of the helicopter, whichever is greater, while a helicopter is manoeuvring in close proximity to the surface. Similarly, a formula is included in a guidance leaflet from the British Helicopter Association for calculating the recommended landing area for a given helicopter. Applying the formula to the subject helicopter results in a recommended landing area radius of almost 12 m, which, the guidance leaflet states, should contain *"no obstructions"*.

It is the opinion of the Investigation that the chosen location was inappropriate and wholly unsuitable for a helicopter landing.

## 2.3 The Pilot's Licence

The Pilot's licence contained a type rating for the SA 341 helicopter, which had been issued by the UK CAA on 19 August 2011. It was required to be revalidated annually and was last revalidated on 30 May 2014. The type rating had not been revalidated when due and was therefore expired at the time of the accident.

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### 2.4 Permission to Operate in Ireland

The helicopter was issued with a Permit to Fly by the UK CAA. It is a requirement of the Permit that to operate the aircraft in another State, specific permission must be obtained from that State. Ordinarily, in accordance with the provisions of its Aeronautical Notice A.19, the IAA allows such aircraft to operate in Ireland for up to 28 days without specific permission. However, G-BXTH was an ex-military helicopter and the IAA's Notice states that this exemption does not apply to ex-military aircraft. Therefore, permission to operate the helicopter in Ireland was required. The IAA advised the Investigation that a request for permission to operate the helicopter in Ireland was not received. According to the IAA, it would normally be the helicopter owner who would apply for such permission. However, the Owner informed the Investigation that he was unaware of this requirement.

### 2.5 Injuries

The two occupants of the helicopter reported no injuries; however, the Investigation was informed that one of the people present in the building received a small cut below his left eye. This may have been as a result of flying debris.

## 3. CONCLUSIONS

### (a) Findings

1. The helicopter was operating on a valid Permit Maintenance Release Certificate.
2. The Pilot's medical certificate was valid.
3. The Pilot's type rating for the helicopter type was not valid at the time of the accident.
4. The helicopter was operating on a Permit to Fly issued by the UK CAA, which was only valid for operating in the UK, unless permission was received from another State to operate in that State.
5. Because the helicopter was an ex-military aircraft, permission to operate the helicopter in Ireland was required from the IAA. The IAA advised the Investigation that a request for such permission was not received.
6. The location of the attempted landing on a narrow canal bank was very confined. It contained a number of obstacles and potential aerodynamic hazards.
7. The chosen location was inappropriate and wholly unsuitable for a helicopter landing.
8. Prior permission to land on the canal bank was not sought from either Waterways Ireland or from the owner of the restaurant/guesthouse.
9. During the attempted landing, the main rotor of the helicopter contacted the timber-clad section of the wall of an adjacent building.



10. Following main rotor contact, the tail of the helicopter swung towards and collided with the timber-clad wall of the building. The tail boom, including the Fenestron tail rotor, separated from the helicopter, broke apart, and came to rest in the canal. The helicopter rolled and impacted with the canal bank. There was no fire.
11. The two occupants reported no injuries to the Investigation.
12. It was reported that one person who was in the building when the accident occurred, received a small cut below his left eye. This may have been a result of flying debris.
13. Members of the public were situated in close proximity to the helicopter while it attempted to land.

**(b) Probable Cause**

Loss of clearance between the main rotor blades and an adjacent building during an attempted landing at a confined site.

**(c) Contributory Cause(s)**

The selection of an inappropriate and unsuitable site for a helicopter landing.

#### **4. SAFETY RECOMMENDATIONS**

The Investigation does not sustain any safety recommendations.

- END -

In accordance with Annex 13 to the Convention on International Civil Aviation, 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 this investigation is to prevent aviation accidents and serious incidents. It is not the purpose of any such 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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