FINAL REPORT

AAIU Synoptic Report No: 2008-007
AAIU File No: 2007/0075
Published: 09/05/2008

In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Air Accidents, on 20 August 2007, appointed Mr. Paddy Judge as the Investigator-in-Charge to carry out a Field Investigation into this Incident and prepare a Synoptic Report.

Aircraft Type and Registration:	Hughes H369HS, N239MW
No. and Type of Engines:	1 x Allison T63-A-5A
Aircraft Serial Number:	110288-S
Year of Manufacture:	See Section 1.5
Date and Time (UTC):	07 July 2007 @ 12.30 hrs UTC
Location:	Athlone, Co. Westmeath.
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - Nil Passengers - Nil Other - 1 (Minor)
Nature of Damage:	Nil
Commander's Licence:	PPL(H), issued by FAA
Commander's Details:	Male, aged 48 years
Commander's Flying Experience:	See Section 1.4
Notification Source:	Irish Aviation Authority (IAA)
Information Source:	AAIU Field Investigation

SYNOPSIS

The single engine helicopter landed on the upper floor of a multi-story car park in the centre of Athlone town. A Car Park Attendant claimed he had attempted to wave the aircraft away as it did not have permission to land. The Attendant stated, as the helicopter continued to land, he then took refuge behind a door where he was injured by the helicopter's main rotor downwash.

The landing, at an elevated site in the centre of a large town, by the single engine helicopter was contrary to the Rules of the Air.

FINAL REPORT

1. FACTUAL INFORMATION

1.1 History of the Flight

The pilot was getting some keys cut for the door of his helicopter at a shopping centre located in the centre of Athlone town, which has a population of over 15,000. He landed on the roof floor of the adjacent multi-story car park. He was accompanied by a passenger, his brother.

1.2 Site information

The landing site was the unoccupied upper floor/roof of a multi-story car park. The edge of the roof is protected by a fixed metal railing 1.5 metres high. This floor is on two levels interconnected by a car ramp. The aircraft landed on the lower of the two levels. The lower area measures 34 metres by 27 metres. The dimensions of the stairwell access, 10 metres by 6, intrude into the space.

Photo No. 1: Supplied by Car Park Manager

The photograph above was taken from the upper section and faces east. To the right is the entrance and doors to the stairwell where the attendant stated he took refuge. Behind the tail of the helicopter (out of view) is the spire of a local church. The roof of the shopping centre and it's 'A' framed glass skylights can be seen over the tail boom of the aircraft. The car park was formerly owned by the owner of the shopping centre, who sold it on to a car parking company. It was not an IAA approved heliport.

1.4 Licensing Information

The Pilot had a valid Private Pilot's Licence - Rotorcraft Helicopter with no restrictions. The USA Federal Aviation Authority (FAA) issued this license, in March 2007, after he had completed his helicopter training and checkout. He had previously commenced training in Ireland and had completed 40 hours before beginning his training in the USA. He possessed a valid Second Class medical issued by an FAA approved medical facility.

The pilot stated that he has about 150 hours helicopter flying experience but was unable to supply a logbook, which he stated was lost in a subsequent accident.

He did, however provide copies of his logbook that showed, that at the time of the incident in July 2007; the Pilot had 131.6 hrs total, 24.2 hrs as pilot in command (P1) and 107.4 hrs as Dual. The Pilot had 8.6 hrs P1 on the Hughes H369HS.

Despite repeated requests, both by phone and letter, the Pilot did not complete and return an AAIU Accident/Incident Report Form on the incident.

1.5 Aircraft Information

The Hughes H369HS is the civilian version of the US Army's OH-6A and is also marketed as a Hughes 500. Details are:

Length Overall: 9.2m
Rotor Diameter: 8m
Weight (empty): 560 kgs
Weight (max): 1,090 kgs
Max speed: 130 KIAS
Year Of Manufacture: Unknown

The helicopter, being equipped with a single turbine engine, is designated as Performance Class 3, as in the event of an engine failure, a forced landing results.

1.6 USA Aircraft Ownership

Under the law of the United States of America only USA citizens are permitted to own US registered general aviation aircraft. To comply with this requirement, and yet still facilitate a non-US citizen owning such an aircraft, there is a widespread practice whereby the aircraft is registered with the FAA in the name of a *Trustee*. The non-US citizen, or *beneficial owner*, (known as the Trustor) then enters an agreement with the Trustee. The helicopter registry showed that N239MW, at the time of the incident, was owned by a Trustee based in the United States but the beneficial owner was Irish.

A subsequent amendment to the FAA registry showed that the helicopter was transferred to a corporation based in the UK on 27 September 2007. The FAA was therefore requested to clarify the requirements of the pertinent USA regulations regarding USA aircraft registration by non-USA corporations. The FAA replied that this is governed by Title 14 of the Code of Federal Regulation, Part 47, which states:

PART 47—AIRCRAFT REGISTRATION
Subpart A—General
§ 47.9 Corporations not U.S. citizens
(a) Each corporation applying for registration of an aircraft under 49 U.S.C. 44102 must submit to the FAA Registry with the application—

(1) A certified copy of its certificate of incorporation;
(2) A certification that it is lawfully qualified to do business in one or more States;
(3) A certification that the aircraft will be based and primarily used in the United States; and
(4) The location where the records required by paragraph (e) of this section will be maintained.

(b) For the purposes of registration, an aircraft is based and primarily used in the United States if the flight hours accumulated within the United States amount to at least 60 percent of the total flight hours of the aircraft during—

(1) For aircraft registered on or before January 1, 1980, the 6-calendar month period beginning on January 1, 1980, and each 6-calendar month period thereafter; and
(2) For aircraft registered after January 1, 1980, the period consisting in the remainder of the registration month and the succeeding 6 calendar months and each 6-calendar month period thereafter.

(c) For the purpose of this section, only those flight hours accumulated during non-stop (except for stops in emergencies or for purposes of refueling) flight between two points in the United States, even if the aircraft is outside of the United States during part of the flight, are considered flight hours accumulated within the United States.

(d) In determining compliance with this section, any periods during which the aircraft is not validly registered in the United States are disregarded.

(e) The corporation that registers an aircraft pursuant to 49 U.S.C. 44102 shall maintain, and make available for inspection by the Administrator upon request, records containing the total flight hours in the United States of the aircraft for three calendar years after the year in which the flight hours were accumulated.

(f) The corporation that registers an aircraft pursuant to 49 U.S.C. 44102 shall send to the FAA Aircraft Registry, at the end of each period of time described in paragraphs (b)(1) and (2) of this section, either—

(1) A signed report containing—

(i) The total time in service of the airframe as provided in §91.417(a)(2)(i), accumulated during that period; and
(ii) The total flight hours in the United States of the aircraft accumulated during that period; or

(2) A signed statement that the total flight hours of the aircraft, while registered in the United States during that period, have been exclusively within the United States.

1.7 Car Park Attendant Interview

The Car Park Attendant said that as the helicopter approached for landing he attempted to wave it away. The helicopter pilot ignored him and he had to duck into the doorway, which gave stairway access to the roof level, as space on the roof is restricted. The downwash from the main rotor caused the door to slam back against him hitting his hand. Words were exchanged between the Car Park Attendant and the Pilot. The Gardaí were called, however by the time the Gardaí arrived the helicopter had departed. Later his hand was sore and he visited a doctor. An x-ray subsequently showed no fractures to this hand although it was sore for some time afterwards. He stated that the helicopter had landed on the roof some months previously and his supervisor told him afterwards that this was not allowed. That was why he had tried to wave it away.

1.8 Pilot Comments

The Pilot stated he had landed at the location previously accompanied by the owner of the shopping centre who had given him permission to land on the car park roof. The car park roof was always unoccupied. He rang the duty manager of the shopping centre that day before taking off to confirm that he had permission to land. He was unaware that the duty manager no longer had authority to grant him permission to land.

The pilot subsequently stated that he had landed short of the access door. He submitted that the Car Park Attendant was not on the roof while he was landing and that the Attendant only approached the aircraft on engine shut down. He said that the Attendant could not have given signals, as he was not present until after landing. The passenger, who was his brother, when later interviewed supported this version of events.

1.9 Managers of Texas Centre and Department Store

The manager of the Texas Centre stated that he had not given the pilot permission to land his helicopter on the roof of the adjacent car park. He further stated that the car park was not owned by the shopping centre.

The duty manager of the Texas Department Store, a shop unit within the Texas Centre, confirmed that he had given the Pilot permission to land but he was unaware at the time that he did not have that authority.

1.10 Manager of Car Park

The Manager of the car park stated that an independent company owned the car park and that neither he nor anybody in his company had given the Pilot permission to land there. The Car Park Attendant later reported that a door had crushed his hand during the helicopter landing whereupon he was sent to a doctor who diagnosed him as having "soft tissue/tendon bruising" to his hand.

1.11 Rules of the Air

Civil helicopter operations are primarily regulated by the IAA Operations Order S.I. No. 61 of 2006 and the Rules of the Air, S.I. No. 72 of 2004. Heliport operations are regulated by the IAA Aerodromes Standards Order, S.I. No. 26 of 2000 and the Aerodromes and Visual Ground Aids Order, S.I. No. 334 of 2000, as amended by S.I. 216 of 2005.

In this case of particular relevance is S.I. 61 of 2006 The IAA Operations Order; Article 51(3)(b) *Only a helicopter operated in Performance Class 1 shall be permitted to operate from elevated heliports in congested areas.*

S.I. 216 of 2005 further states:

(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.

IAA Memorandum (OAM) No: 08/00:23/05/05 provides guidance for operations into Heliports. This defines heliports as divided into permanent and temporary categories, with a *'Temporary Heliport'* being defined as *any temporary helicopter landing site, other than an aerodrome, intended for occasional landing use.*

It further states:

Provided a heliport site is not located within a congested area, or close to an open air assembly of 1,000 or more people, it is only necessary that the heliport site owner/occupier grants prior permission to a helicopter operator intending to use the heliport.

The provisions regarding a congested area state:

3.5 Landings and take-offs by single-engine helicopters should not be attempted at heliport sites located within congested areas unless the helicopter operator concerned has established that sufficient open spaces are contained within the heliport site and, in the vicinity of the site (and along the transit routes to and from the heliport), to carry out a safe forced landing, during the landing and take-off segments, taking into account the performance capabilities of the helicopter type in use. It follows that heliport sites, suitable for single-engine helicopters, are rarely available within a congested area.

The provisions regarding an elevated site state:

4.1 By virtue of the siting of the vast majority of elevated heliports within congested areas with the associated perceived risk to the heliport building, third parties and to nearby structures, only helicopters with Performance Class 1[1] *capability are permitted to land at or take-off from elevated heliports. The helicopter type, intended to be used, must possess a Flight Manual performance profile demonstrating that, in the event of engine failure occurring at any time during the take-off or landing manoeuvres, the helicopter can safely land back on to the elevated heliport or safely fly away, avoiding all obstacles by a vertical margin of at least 35 feet…*

In addition:

4.3 The provision of Rescue and Fire Fighting Services (RFFS) at elevated heliports is mandatory and must be provided to the scales laid down in Chapter 6 of ICAO Annex 14, Volume 2, (Heliports). Close liaison with the local Fire Brigade during the heliport planning and construction stages must be established and maintained thereafter to ensure a viable emergency plan is agreed, maintained and monitored.

[1] A twin-engine helicopter having, performance such that, in the case of critical power unit failure, it is able to land on the rejected take-off area or safely continue the flight to an appropriate landing area depending on when the failure occurs.

.

2. ANALYSIS

Despite the appearance of **Photo No: 1** of open space the area is quite congested as it is in the central shopping area of Athlone, a large town. It is unclear to the Investigation where the helicopter could have been safely force landed in the event of an engine failure during landing or take off. It is also probable that the approach was made over the unstressed roof of the shopping centre due to the location of the church to the north of the landing site. The shopping centre was open for business at the time, and for obvious safety reasons, the area should have been completely avoided. In landing at such a site the pilot displayed poor airmanship.

The IAA Operations Order, S.I. 61 of 2006; Article 51(3)b states that only helicopters certificated in Performance Class 1 are allowed to operate to elevated helipads. These helicopters have two engines and can climb away with one engine failed. The Hughes 369HS is a single engine helicopter and, as such, is only certificated for Performance Class 3. S.I. 61 of 2006 prohibits the operation of a single engine helicopter to an elevated site in a congested area. In addition, S.I. 216 of 2005 requires that an elevated site be specifically licensed by the IAA for operations by helicopters, which the roof of the car park was not. The landing was therefore contrary to the Rules of the Air and Irish legislation.

The landing site is in a congested area and furthermore, and importantly, it is an elevated site where Rescue and Fire Fighting Services are mandatory. Neither was available.

The pilot believed he had permission to land. Nevertheless, the person, whom he had obtained permission from, did not have the authority to issue it as he neither controlled nor owned the car park. This resulted in the pilot, inadvertently, not having permission to land.

The Car Park Attendant stated that he had attempted to wave the aircraft away. This statement is in direct contradiction to that of the Pilot who stated that the Car Park Attendant was not on the roof. The Car Park Attendant stated that, due to the pilot continuing to land, he had to take shelter in the stairwell, as there was limited space on the roof. This resulted in the rotor downwash forcing the door to slam back into the stairwell where he had taken refuge. The door injured his hand when it hit him.

3. CONCLUSIONS

(a) Findings

1. The helicopter landed on the roof of an elevated multi-story car park.
2. A Car Park Attendant stated that he attempted to wave the aircraft away but the Pilot continued to land.
3. The Pilot stated that he did not see the Car Park Attendant on the roof and that he was not there.
4. The Car Park Attendant stated that he was injured during the landing, due to the main rotor downwash affect on the roof access door.
5. The manager of the Texas Department Store incorrectly gave the pilot permission to land.
6. The landing on an elevated site was in violation of Irish Air Law.

(b) Cause

A Car Park Attendant reported suffering minor injuries from rotor downwash when a helicopter landed on a car park roof.

(c) Contributory

The helicopter landed at an elevated site in violation of Irish Air Law.

4. SAFETY RECOMMENDATIONS

This Report does not sustain any Safety Recommendations.

- END -