Accident

Aircraft Type and Registration:	Leonardo AW169, G-HHEM	
No & Type of Engines:	2 Pratt & Whitney Canada PW210A turboshaft engines	
Year of Manufacture:	2017 (Serial no: 69049)	
Date & Time (UTC):	28 February 2026 at 1808 hrs	
Location:	Southend, Essex	
Type of Flight:	Emergency Services Operations	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Others - 1 (Serious)
Nature of Damage:	None	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	47 years	
Commander's Flying Experience:	3,796 hours (of which 425 were on type) Last 90 days - 23 hours Last 28 days - 15 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB	

Synopsis

The air ambulance helicopter was departing from a field having been on a Helicopter Emergency Medical Service (HEMS) task. Soon after the aircraft had taken off a member of the public, who was standing outside their house, was blown over by the helicopter's downwash and was seriously injured.

History of the flight

The air ambulance helicopter was dispatched from its base at North Weald Airfield, Essex, on a HEMS task in a residential area to the east of London Southend Airport. On board were two pilots and two paramedics.

Prior to departing North Weald a private green field area was selected as the landing site due to its size and surface. This was adjacent to a train line that bordered the eastern edge of Southend Airport and next to Southend Airport train station (Figure 1). It also had good access onto a public road and was as close to the patient as possible. Its suitability was also confirmed by use of satellite imagery.

Once in the vicinity of the landing site the crew conducted an airborne reconnaissance, which confirmed its suitability. The helicopter landed in the field without event at about 1746 hrs and the paramedics departed to assist with the patient.

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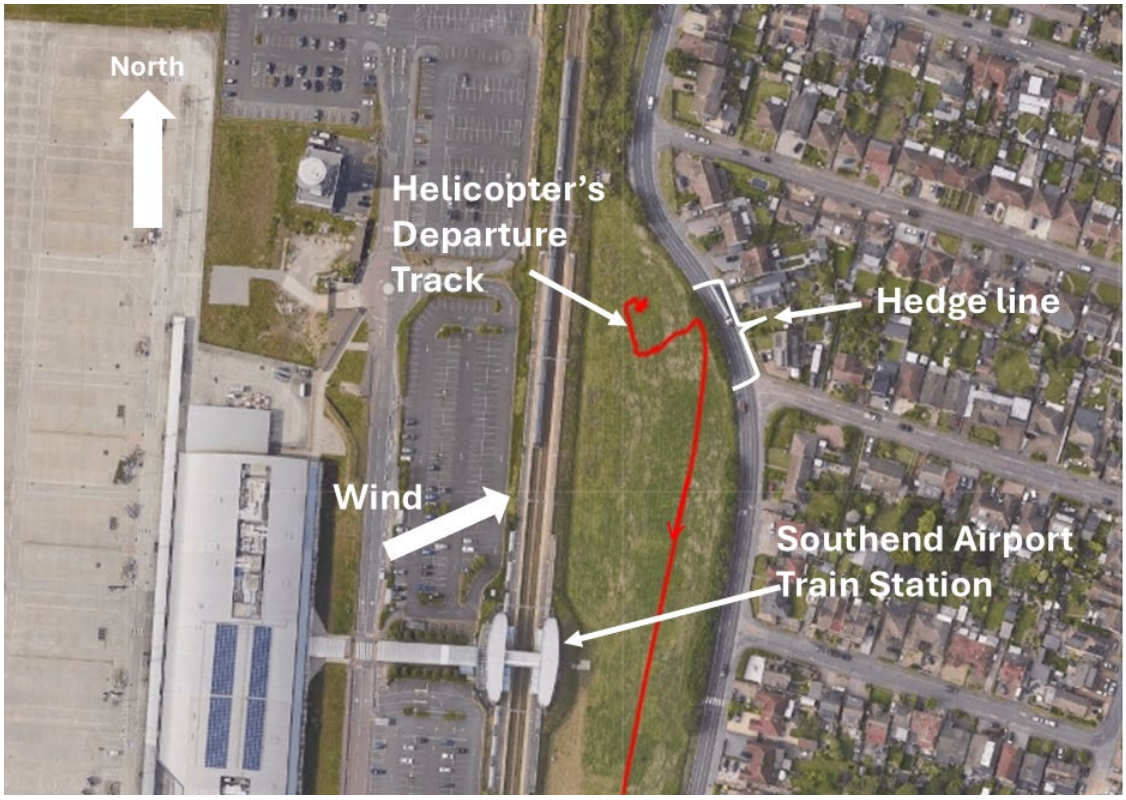


Figure 1

Overview of Accident Area
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With sunset approaching, and because the co-pilot was not night current, the helicopter could not depart the unlit green field site in the dark, they elected to conduct some night flying training at Southend Airport. They then planned to land there, to await the paramedics, before returning to North Weald. At the time the weather was CAVOK and the wind was from about 250° at 7 kt.

For the departure from the field the co-pilot was the PF. While the co-pilot prepared the helicopter for departure, the commander saw some bystanders with children, that had come to see the helicopter, standing by a fence on the western side of the road that bordered the field. He went over to them and asked them to move to the other side of the road for their own safety. He then boarded the helicopter and its engines were started. At this time a member of the public, who lived across the road from the field, behind the hedge line, heard the helicopter start. She went outside to film it depart and stood close to her house by a car that was parked on the drive. A relative of hers stood on the pavement. This was about 30 m from the helicopter as it lifted from the field.

After start, the crew delayed lifting by a few minutes as there was a train in the station which they wanted it to leave first to avoid it causing a distraction. Also, the departing passengers would no longer be on the platform. The helicopter flew a 'variable TDP' (takeoff decision point) Performance Class (PC) 2 departure from the field. This type of departure involved

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the helicopter climbing rearwards and almost vertically to 200 ft agl, before transitioning into forward flight (Figure 2). During the climb the helicopter drifted east towards the road before transitioning to forward flight.

About 50 seconds after the helicopter commenced its vertical climb, the observer that was outside her house was blown over by the helicopter's downwash and was seriously injured. Her relative quickly came to her aid and the injured person was subsequently taken to hospital.



Figure 2

Stills from the observer's film of the helicopter soon after lifting into the hover and just before the observer was blown over

The helicopter departed with no knowledge that anyone had been injured and eventually returned to North Weald without further event. The helicopter's takeoff weight was about 4,300 kg.

The operator was subsequently informed about the seriously injured observer by a relative, four days later. No other persons were believed to have been affected by the helicopter's departure.

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Commander's comments

The commander commented that the hedge on the eastern side of the field obstructed his view towards the houses where the observer was standing. Had he seen her, he would have briefed her on the potential for downwash from the helicopter. However, in his opinion, and from previous experience, the distance did not pose a high level of threat.

The commander added that they calculated and flew a variable TDP PC 2 departure because, in the event of an engine failure, this allowed the PF to reject the takeoff back onto the area of ground they had just taken off from, where they knew the surface and slope conditions for the subsequent landing. A clear area PC 1 takeoff (ie a low-level accelerating departure) could not have been flown as the field was not a prepared surface and the obstacles had not been formally measured and published, as would have been the case for an airfield runway, and therefore a safe forced landing could not be assured.

The commander commented that they didn't move south towards the middle of the field for the departure as they were at the widest part of the field. Also, access stairs to the railway station would have been closer to the departing helicopter, presenting a hazard from the downwash during the departure. The drift to the east during the climb was possibly due to no frontal markers in the long field in front of them, that would have assisted their position keeping as the helicopter climbed.

Helicopter takeoff performance

The crew calculated a TDP of 200 ft agl. This was equal to the height of the nearest obstacle (Ho), 50 ft, plus the clearance height, (H_C), 30 ft, plus 80 ft. An additional 40 ft was added to give some additional separation for the downwash over the built up area, and to reduce any potential startle effect for the users of the road, at the end of the field.

Operator's operations manual

The operator's Air Operations Manual Part A (OMA), stated in '*Assessment Procedure for Unlicensed Sites'* that pilots are to consider the potential effects of helicopter downwash on property and third parties.

After this accident the operator issued a Flying Staff Instruction on 29 May 2026 to all of its pilots reminding them of the hazards associated with downwash, highlighting that these are present on takeoff as well as landing. It also included links to other AAIB reports involving downwash.

Analysis

The air ambulance helicopter was operating from a green field site. Prior to departure the commander saw some bystanders with children, standing by the fence on the western side of the road and asked them to move across the road, as required by the operator's OMA. As the injured observer was not outside their house at this time, she was not visible to the commander. She would also have not seen him warn the bystanders who were in the vicinity. When the injured observer came out to film the helicopter the commander was already in the helicopter which was behind a hedge and so she was not visible to the crew.

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While the helicopter initially climbed to about 200 ft agl, as the wind was from about 250° at 7 kt, its downwash would have been blown towards the injured observer. It is also possible that the speed of the downwash accelerated, due to the funnel effect, as it interacted with the hedge, the observer's house and/or the parked car, thus increasing the risk to anyone affected by it. It is believed the bystanders and children that had been advised to move to the eastern side of the road were not unduly affected by the downwash.

As the helicopter climbed it drifted east towards the road, which the commander commented was due to their imperfect position keeping. The fading daylight and surface wind may also have contributed to this. This movement towards the road, and the observer, may have increased the severity of the downwash she experienced.

Conclusion

An observer of the helicopter departing from a field was blown over by its downwash as she stood outside her house. The speed of the downwash may have been greater due to the funnel effect when it was affected by nearby buildings and a car.

Safety actions

As a result of this accident the operator took the following safety action:

The operator issued a Flying Staff Instruction on 29 May 2026 to all its pilots reminding them of the hazards associated with downwash, highlighting that this can occur on takeoff as well as landing. It also included links to other AAIB reports involving downwash.

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