

Aircraft Type and Registration:	Bolkow BO 105DBS-4, G-ESAM	
No & Type of Engines:	2 Allison 250-C20B turboshaft engines	
Year of Manufacture:	1992	
Date & Time (UTC):	25 December 2002 at 1400 hrs	
Location:	Epping (Theydon Bois), Essex	
Type of Flight:	Air Ambulance	
Persons on Board:	Crew - 3	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Damage to blade trailing edge and trim tab	
Commander's Licence:	Airline Transport Pilot's Licence (Helicopters)	
Commander's Age:	44 years	
Commander's Flying Experience:	2,833 hours (of which 882 were on type) Last 90 days - 56 hours Last 28 days - 15 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

The helicopter was operating in the dedicated air ambulance role and was called to attend a road traffic accident on a country road. The B172 road ran east to west at the scene of the accident and was surrounded by tall trees. The pilot approached the landing site into wind bringing the aircraft into a high hover over a clear area to the north of the road. He then manoeuvred between two small trees on the northern side before descending vertically to land on the road.

Half an hour later a patient had been placed on board for transfer to hospital and the aircraft took off. The pilot raised the aircraft into a high hover and at the same time, slowly moved it backwards along the line of the road below. Guided by a crewman looking out of the open port door, he continued until the aircraft was above the two small trees he had passed between whilst landing and then started to manoeuvre north back into the clear area. In moving backwards, the helicopter was now very close to a large tree on the southern side of the road. On starting to move towards the clearing the main rotors struck a branch in the tree, now in the aircraft's four o'clock position. This resulted in a small vibration and vertical bounce prompting the pilot to land back on the road and shutdown the helicopter.

Inspection revealed damage to the trailing edge of one main rotor blade and a bent trim tab on another. Engineers later carried out minor repairs at the site sufficient for the aircraft to be ferried back to its base with only the pilot on board. The main rotor blades were then replaced and the aircraft returned to service.

The type of departure employed was a helipad vertical takeoff and as such frequently used by the pilot. This type of departure involves deliberately moving rearwards as the helicopter climbs to a safe height from which to begin transition to forward flight. The objective of moving rearwards is to keep the landing site in view so that if an engine fails before the transition begins, the pilot can use the remaining engine to return immediately to the landing site.

The air ambulance pilot stated that after 35 minutes sat with engines running on the road, he had lost some spatial awareness. He was aware of the large tree but not the overhanging branch behind the helicopter. Moreover, he had sub-consciously adopted the helipad departure procedure instead of lifting vertically into a high hover. The crew's attention had also been drawn by the small trees that they needed to clear beside the road, this being compounded by the branches on the tall trees to the south remaining invisible from within the cockpit.