

**ACCIDENT**

<b>Aircraft Type and Registration:</b>	Bell 206B Jet Ranger III, G-CODE	
<b>No &amp; Type of Engines:</b>	1 Allison 250-C20J turboshaft engine	
<b>Year of Manufacture:</b>	1985	
<b>Date &amp; Time (UTC):</b>	30 April 2007 at 1400 hrs	
<b>Location:</b>	Bredbury, Stockport, Cheshire	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - 1	Passengers - 1
<b>Injuries:</b>	Crew - None	Passengers - 1 (Minor)
<b>Nature of Damage:</b>	Damage to the main rotor blades, main gearbox, transmission, fuselage, tail boom and engine	
<b>Commander's Licence:</b>	Private Pilot's Licence	
<b>Commander's Age:</b>	53 years	
<b>Commander's Flying Experience:</b>	93 hours (of which 20 were on type) Last 90 days - 18 hours Last 28 days - 10 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

**Synopsis**

The pilot reported that, while carrying out a spot turn to the right prior to taking off, the wind gusted and he experienced a sudden loss of tail rotor effectiveness. The helicopter struck the ground and came to rest on to its right side. It was severely damaged but there was no fire. The pilot and his passenger, who sustained minor injuries, exited the helicopter through the left windscreen.

The wind speed at the time of the accident was probably in excess of the demonstrated maximum sideways and rearwards airspeeds to which the helicopter had been cleared.

**History of the flight**

The helicopter was departing from the centre of a field, a private landing site, where it had landed some three hours earlier. Having lifted into the hover, approximately into wind, the pilot turned and hover-taxied the helicopter downwind, in order to give himself the full length of the field for the takeoff. As he was carrying out a spot turn to the right, to point back into the wind, he reported that the wind gusted and he experienced a sudden loss of tail rotor effectiveness (LTE). The helicopter began to spin to the right and after about one and a half turns, before the pilot could recover control, one of the skids struck the ground and G-CODE rolled onto its right side.

Despite extensive damage to the helicopter, the engine

was still running. The pilot shut it down and made the helicopter safe, before he and his passenger exited the aircraft through the left windscreen, which the passenger had kicked out. During the impact the passenger received a cut on the top of his head but, the pilot was uninjured. Once outside the helicopter the pilot disconnected the battery. A witness immediately reported the accident to the emergency services, who arrived about 20 minutes later. There was a fuel leak, but no fire ensued. The passenger subsequently received treatment for his minor head injury.

The weather at the time was fine but the surface wind at Manchester International Airport, 10 miles away, was recorded as being from 075° at 16 kt gusting to 27 kt. The aircraft flight manual advises that the helicopter has been demonstrated in sideways and rearwards flight

up to 17 kt. Therefore, the surface wind at the accident site may well have been in excess of the wind speeds in which the helicopter's sideways and rearwards controllability has been proven.

The pilot concluded that, in the conditions, he could have taken off from the position where he had initially lifted into the hover. Also, although he would normally have carried out the spot turn to the left, on this occasion he was keen to keep some nearby power cables in sight whilst he manoeuvred the helicopter. Carrying out a spot turn to the right involved reducing the thrust produced by the tail rotor. Furthermore, he appreciated that carrying out the manoeuvre in wind conditions in excess of the maximum speeds for which the Jet Ranger has been demonstrated in sideways and rearwards flight contributed to the accident.