ACCIDENT

Aircraft Type and Registration:	Agusta Bell 206A JetRanger, G-OJEF
No & Type of Engines:	1 Allison 250-C18B turboshaft engine
Category:	2.3
Year of Manufacture:	1969
Date & Time (UTC):	27 May 2005 at 1600 hrs
Location:	Haverfordwest Airfield, Dyfed
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - None
Nature of Damage:	Main rotor head and blades detached, fuselage severely damaged
Commander's Licence:	Private Pilot's Licence
Commander's Age:	49 years
Commander's Flying Experience:	161 hours (of which 18 were on type) Last 90 days - 18 hours Last 28 days - 18 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot plus eyewitness accounts

History of the flight

The pilot and his wife had completed an uneventful flight from a private site near Southampton to Haverfordwest Airfield. The weather was good with a south-westerly wind at about 20 kt, visibility in excess of 10 km and broken cloud at about 2,000 ft. The helicopter was positioned on the downwind leg for a left hand circuit to Runway 21. A normal approach was made to Runway 21 with the surface wind from 220°/10-15 kt. The helicopter was hover taxied along the runway and turned right along the taxiway/parking area, towards the refuelling point. As the helicopter neared the hangars it turned sharply which the pilot tried to correct with some effect. He could not recall in which direction the helicopter turned but decided to try to turn it into wind and takeoff. On raising the collective lever, the helicopter did not respond and suspecting there may be a technical problem, the pilot elected to perform an immediate landing. The landing gear contacted the ground and the helicopter bounced rolling to the left. The main rotor blades contacted the grass surface to the east of the taxiway which sheared the main rotor mast. The main rotor head and blades detached and the fuselage came to rest on its left side. There was no fire and the pilot carried out the emergency shut down drills. Both occupants were uninjured and

vacated the helicopter through the pilot's door on the right side of the aircraft. The airfield Rescue and Fire Fighting Service promptly attended the scene.

Eyewitnesses

An instructor pilot in a Cessna 150 had been in radio contact with the pilot of the Bell 206 and had just landed when the helicopter accident occurred. Although at some distance, he described the helicopter as in a hover taxi when it became unstable, pitching up and down and rising and descending. Although he could not be certain he believed that the helicopter yawed rapidly to the left before impacting the grass.

A second witness was a private pilot who also flew a Bell 206. He saw the helicopter hover taxiing along the taxiway and described the same unstable pitching and rolling motion. He saw the helicopter descend rapidly from a high hover taxi and the right skid touch before the helicopter bounced some five feet back into the air before descending onto its left side, the main rotor blades striking the ground. During these manoeuvres, the helicopter rotated through approximately 180° to the right.

Analysis

No definite cause for the accident could be identified but when turning right off the runway the helicopter hover taxied in a northerly direction along the taxiway. The surface wind was then from the left rear quarter direction. The weather-cocking effect induced a yawing motion which, when combined with the airflow under the horizontal stabiliser pitching the helicopter nose down, created difficult flying conditions for the pilot.

In attempting to maintain control, the pilot was probably making large control movements associated with the pitching and rolling reaction of the aircraft described by the witnesses. His attempt to take off by raising the collective pitch control did not produce any significant climb or acceleration from the helicopter. This was probably due to using a high power setting in the downwind condition which did not produce the normal take-off reaction. The bounce occurred due to a positive lowering of the collective pitch control in order to land immediately. This produced a high rate of descent and the excessive left roll angle permitted the main rotor blades to strike the ground.