

ACCIDENT

Aircraft Type and Registration: Westland Bell 47G-3B-1, G-BFYI

No & Type of Engines: 1 Lycoming TVO-435-B1A piston engine

Year of Manufacture: 1965

Date & Time (UTC): 4 August 2009 at 1130 hrs

Location: Bagby Airfield, North Yorkshire

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - 1

Injuries: Crew - None Passengers - None

Nature of Damage: Tips of both tail rotor blades damaged

Commander's Licence: Private Pilot's Licence

Commander's Age: 45 years

Commander's Flying Experience:
179 hours (of which 44 were on type)
Last 90 days - 13 hours
Last 28 days - 3 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

Synopsis

The helicopter was lifted into the hover in a strong and gusting tailwind. It yawed rapidly to the right and, before a stable hover could be re-established, the tail rotor struck the ground. Due to significant vibration through the tail rotor control pedals, the pilot carried out a running landing on to a grass area and shut down the helicopter.

History of the flight

The pilot and his passenger had flown from Windemere to Bagby Airfield. The weather was good, with a strong surface wind at Bagby from 100° at 20 kt, gusting 30 kt. The pilot approached into wind and came to a normal hover before executing a turn to the right and hover-taxiing downwind to the refuelling point.

He experienced no difficulties during the hover-taxi and, having landed facing the fuel pump, shut down G-BFYI. After refuelling the helicopter, he and his passenger visited the clubhouse for refreshments.

Before re-boarding the helicopter, the pilot considered the possible effects of the tailwind on his departure from the pump area. Given his uneventful downwind hover taxi to the fuel pump, he believed that conditions were within his personal limits and those of the helicopter. The pilot started the helicopter for the return flight to his home base and completed the normal checks. He lifted the helicopter into the hover and, when stable, initiated a sideways hover-taxi to the right. At this point, the wind seemed to catch the vertical tail

surface of the helicopter and the nose yawed rapidly to the right. The pilot applied full left pedal, to try and control the yaw whilst applying more collective pitch to increase his height above the ground. At the same time, he attempted to maintain the helicopter in a level pitch attitude but, despite these actions, the tips of the tail rotor blades contacted the concrete surface of the parking area. As the helicopter's nose pointed into wind, the yaw stopped. The pilot felt a severe vibration through the tail rotor control pedals and carried out a running landing on to the grass area ahead and shut down the helicopter.

Pilot's Notes

The Pilot's Notes for the helicopter type contain the following information regarding windspeed:

'Operation Vs Allowable Wind'

'Helicopter flight and landing operations can be safely accomplished with wind conditions up to 20 mph (32 kph) however this is not to be considered a limiting value as maximum operating wind velocities have not been established.'

Analysis

The pilot considered that the cause of the accident was the strong and gusting wind acting on the vertical tail surface of the helicopter which resulted in it yawing to the right. The suddenness and rapid nature of the event surprised him and he was unable to control the yaw or maintain the tail rotor clear of the ground, despite using significant control inputs.