

Robinson R22 BETA, G-TCMP

AAIB Bulletin No: 9/2000 **Ref: EW/G2000/06/25** **Category: 2.3**

Aircraft Type and Registration: Robinson R22 BETA, G-TCMP

No & Type of Engines: 1 Lycoming O-320-B2C piston engine

Year of Manufacture: 1988

Date & Time (UTC): 30 June 2000 at 1735 hrs

Location: Thruxton Airfield, Hampshire

Type of Flight: Private

Persons on Board: Crew - 1 - Passengers - 1

Injuries: Crew - None - Passengers - Minor

Nature of Damage: Damaged beyond economic repair

Commander's Licence: Private Pilot's Licence (Helicopters)

Commander's Age: 46 years

Commander's Flying Experience: 538 hours (of which 33 were on type)
Last 90 days - 31 hours
Last 28 days - 8 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

The pilot planned to fly with his passenger on a local flight carrying out hovering, spot turns and transitions. He had discussed the flight with the duty instructor and completed all his pre-flight preparation before his passenger arrived at the airfield. The weather was fine with a light southerly breeze, good visibility, broken cloud at 2,500 feet and a temperature of +20°C.

On arrival, the passenger was escorted to the helicopter, which was parked with other helicopters on either side of it. The passenger was strapped in and briefed on the seatbelts, door operation, emergency procedures and the location of the fuel cock and master electrics switch. After engine start the pilot completed the pre-take-off checks and transmitted to the tower requesting take-off clearance. It was then apparent that the passenger's headset (earlier swapped for the pilot's one) was unserviceable and so it was arranged that the duty instructor would fetch a replacement from the hangar. This was handed to the pilot and in turn to the passenger. While this was taking place the pilot had kept his hands and feet on the controls with the yaw pedals and cyclic pitch control centralised and the collective pitch control held fully down. At the same time the parked helicopter on the right had started its engine and was stationary on the ramp with the rotors turning. A student pilot had also begun an external inspection of the helicopter parked on the left. The pilot had

released the control friction in readiness for his take off but reported that he did not recall re-setting the collective friction during the delay.

The instructor walked away from the helicopter when it became apparent that the replacement headset was fully functional. He walked around the front of the machine and began to exit the rotor disc in the helicopter's 9 to 10 o'clock position. As he walked away, and before he had exited the disc area, the helicopter, still on the ground, began to yaw rapidly to the left. As the rate of rotation increased the pilot applied right pedal but this appeared to have little effect. The pilot, realising that the instructor was close by with the tail rotor turning towards him, instinctively pulled up on the collective pitch lever and applied right cyclic pitch control in order to manoeuvre onto the grass clear of the instructor and the adjacent helicopters. The helicopter lifted a few feet into the air, completed a turn through at least 360° and descended onto its skids before rolling onto its right side and skidding 2 to 3 metres along the ground. When it came to rest the passenger turned off the fuel cock but the pilot was unable to reach the master electrics switch. Both the pilot and passenger vacated the helicopter unaided via the left door. No-one on the ground and neither of the other helicopters were struck by the R22 as it rolled over.

In a comprehensive and frank report to the AAIB the pilot listed several factors which, in his opinion, had contributed to the accident. These included: his distraction caused by the headset problem and when conversing with the instructor with rotors running; his possible failure to re-apply friction to the collective pitch during the delay whilst a replacement headset was obtained; the late application of corrective yaw control once the rotation in yaw had commenced; lifting into a low hover in an uncontrolled manner and failing to stabilise the helicopter before 'snatching' the cyclic pitch control to the right. The instructor commented that rotor RPM could have been reduced from take-off RPM to an idle setting (70 to 80 %) whilst the headset problem was being resolved.