Safety Regulation Group
Safety Investigation and Data Department

Follow-up Action on Occurrence Report

ACCIDENT TO ROBINSON R22, G-WRLY, AT CRANFIELD AIRFIELD ON 4 MAY 2003
(HELICOPTER CRASHED DURING LIFT OFF)

CAA FACTOR NUMBER	:	F32/2003
FACTOR PUBLICATION DATE	:	14 October 2003
OPERATOR	:	Patriot Aviation (Charter)
CAA OCCURRENCE NUMBER	:	2003/02647
AAIB REPORT	:	Bulletin 10/2003

SYNOPSIS

(From AAIB Report)

The student pilot had been authorised to carry out the pre-flight checks, start the aircraft, as he had done on over 30 previous occasions, and wait for his instructor to join him. Having engaged the rotors and accelerated them to 100% RPM, he was checking that the low RPM horn and caution light came on as the RPM decreased through 97%. To achieve this the pilot had to raise the collective level slightly before reducing the amount of throttle because the horn and caution light are disabled with the collective lever in the fully down position. The pilot stated that he followed this procedure with the cyclic and collective frictions ON and the governor OFF.

Having decreased the RPM to 90% the horn and caution light had still not activated. The pilot lowered the collective and opened the throttle to regain 100% RPM. Suspecting that he may not have raised the collective sufficiently, the pilot decided to repeat the procedure. He again raised the collective and stated to reduce the amount of throttle. As the RPM was approaching 97% the pilot noticed that the aircraft had begun to rotate, as he recalls, in an anti-clockwise direction and he visually checked the position of the yaw pedals to ensure that the rotation was not the result of an input by him. He observed that the yaw pedals were centralised. By this stage the rate of rotation had increased and the pilot became aware that the aircraft was lifting off the ground. In what he described as a rapid sequence of events, the aircraft spun around three or four times, lifted into a two feet hover and, as he attempted to lower the collective, rolled right and descended on to the ground coming to rest on its right side. The pilot heard the low RPM horn sounding and noticed fuel spilling on to the apron from behind his right shoulder. He switched off the fuel shut off valve and the master switch and exited the aircraft through the left door. He had suffered minor injuries but there was no fire.

ATC became aware of the accident when they were advised by the pilot of a single engine light aircraft which was carrying out engine checks prior to take off. This pilot did not see the accident occurring, only the aftermath.

The accident was witnessed by a passenger in a helicopter which was hover taxiing towards the apron where the R22 was starting up. She recalled seeing the R22 on the ground facing the hangar building. With its skids still on the ground, the R22 started to rotate in a clockwise direction at an increasing rate. It spun around two-and-a-half times and then lifted into an estimated 10 feet hover. It was then seen to rotate while haphazardly pitching forwards and backwards and rolling left and right in a 'shaking and snaking' fashion. It then lifted a bit further before appearing to lose energy and, simultaneously, fall and roll onto the ground on its right side. The pilot of the witness's helicopter did not have a clear recollection of the accident because his concentration was devoted to manoeuvring his aircraft away from the vicinity of the R22.

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The weather was warm and dry with the surface wind from 160° at 13 kt. The aircraft was on a heading of approximately 240° when it was starting up on the apron.

FOLLOW UP ACTION

The one Safety Recommendation, made by the AAIB following their investigation, is reproduced below, together with the CAA's response.

Recommendation 2003-74

It is recommended that Patriot Aviation amend their procedure for checking the Low RPM Horn and Caution Light during the STARTING ENGINE checks to reflect Robinson Helicopter Company's procedure, for the same check, in the R22 Pilot's Operating Handbook.

CAA Response

This Recommendation is not addressed to the CAA.

CAA Status - Closed