Robinson R22 Beta, G-UESY

AAIB Bulletin No: 6/2004	Ref: EW/G2004/01/05	Category: 2.3
Aircraft Type and Registration:	Robinson R22 BETA, G-UESY	
No & Type of Engines:	1 Lycoming O-360-J2A piston engine	
Year of Manufacture:	1998	
Date & Time (UTC):	17 January 2004 at 1135 hrs	
Location:	Elstree Aerodrome, Hertfordshire	
Type of Flight:	Training	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Moderate damage to rotor blades and cockpit area	
Commander's Licence:	Airline Transport Pilot's	
Commander's Age:	49 years	
Commander's Flying Experience:	4,550 hours (of which 235 were on type)	
	Last 90 days - 10 hours	
	Last 28 days - 6 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

The student pilot was assessed by his instructor as competent in hovering, spot turns, hover taxiing, ascending and descending. He had also 'followed through' on the controls, on many occasions, while the instructor had demonstrated takeoffs and landings. It was now considered time to allow the student to practice takeoffs and landings under supervision using the helicopter manoeuvring area; an area on the airfield of soft, waterlogged and undulating mown grass.

For the first practice landing the instructor elected to position the helicopter so that the student could approach 'down-sun' avoiding a possible distraction from the glare. This meant that the helicopter would be subjected to in a light quartering tailwind from the left. The resultant landing, although firm, was controlled. During the student's first takeoff the helicopter rocked forward due to incorrect positioning of the rotor disc. The instructor re-briefed the correct technique in the air emphasising the need to apply a corrective cyclic input during the takeoff, as the Robinson R22 has a tendency to lift right skid first. The following landing was again firm but carried out under control.

On the second takeoff the student allowed the helicopter to once again rock forward as it became light on its skids. As it did so the instructor applied a slight rearward correction to the cyclic control to prevent the helicopter from tipping forwards. During this correction the helicopter rolled rapidly to the left. Before any further corrective action could be taken, the rotor blades hit the ground and the

helicopter yawed to the right, hitting the ground on its left side. Both the instructor and student, who were wearing lap and diagonal harnesses, were able to vacate the cockpit through the broken windscreen without injury.

Marks in the soft ground indicated that the rear of the left skid may have dug into the ground on the previous landing. It was also noticed that the uneven ground placed the left skid lower than the right prior to the attempted lift off. The instructor assessed that these factors, exacerbated by possible incorrect disc attitude and the slight crosswind, lead to a dynamic rollover event.