

Hughes 369HS, G-NIPY

AAIB Bulletin No: 6/2003	Ref: EW/G2003/03/22	Category: 2.3
Aircraft Type and Registration:	Hughes 369HS, G-NIPY	
No & Type of Engines:	1 Allison 250-C20 turboshaft engine	
Year of Manufacture:	1975	
Date & Time (UTC):	23 March 2003 at 1124 hrs	
Location:	Blackpool Airport	
Type of Flight:	Training	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Substantial damage to main rotor and tail boom	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	50 years	
Commander's Flying Experience:	2,898 hours (of which 137 were on type) Last 90 days - 38 hours Last 28 days - 17 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

An instructor pilot was carrying out 'engine-off' landing practice with a student pilot. The student was the owner of the helicopter and in the final stages of his PPL training. The weather was good with a surface wind of 100° at 9 kt, 9 km visibility and the sky was clear of cloud. The landings were being conducted on Area 'B', a hard grass area in the airfield specifically used for helicopter training and engine-off landings. Prior to the flight a full briefing had been given to the student by the instructor on the exercises to be carried out which included: wind speed and direction; run on landings; flare recovery; and landings from a zero speed hover.

The instructor was cleared by ATC to Area 'B' to carry out his training not above a height of 800 feet. The instructor demonstrated four autorotations, which included three power recoveries and one run on landing. During the run on landing, the aircraft demonstrated a marked tendency to tip forward and so the instructor elected to perform only zero speed landings. For the next demonstration he rolled the throttle to the idle position and entered autorotation. The helicopter was flared at the normal height and the cabin floor levelled at a height of approximately six feet with a low forward speed as intended. A high rate of descent developed which could not be arrested by application of the collective lever. As the helicopter touched down it began to tip forward and the instructor applied aft cyclic control in an attempt to contain the forward movement; as a result the main rotor blades struck the tail boom, severing it. The instructor shut down the engine and requested the emergency services which attended immediately.

After the accident, the instructor inspected the area at the front of the helicopter and noted that the forward 2.5 feet of the skids were overhanging a hollow in the ground, which was approximately 8 inches deep. It was not visible from the air and it had increased the forward pitching motion of the helicopter.

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The instructor's assessment of the cause of the accident was that the front of the skid landing gear had entered the depression in the grass surface, which had allowed the aircraft to tip forward. In attempting to prevent the helicopter pitching further forward, he made a large, rapid, aft cyclic control input, which had caused the main rotor blades to contact the tail boom, severing it.