

No: 9/89

Ref: EW/G89/07/18

Category: 2c

Aircraft Type and Registration: Bell 47 G5, G-AZMB

No & Type of Engines: 1 Lycoming VD 435 BIA piston engine

Year of Manufacture: 1961

Date and Time (UTC): 13 July 1989 at 0928 hrs

Location: Holcot Farm near Cranfield, Bedfordshire

Type of Flight: Training

Persons on Board: Crew - 2 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Damage to skids, tailboom and tail rotor driveshaft

Commander's Licence: Air Transport Pilot's Licence (Helicopters)

Commander's Age: 56 years

Commander's Total Flying Experience: 9,206 hours (of which 85 were on type)

Information Source: Aircraft Accident Report Form submitted by pilot

The aircraft was engaged in practising operations in confined areas. The student flew the aircraft to the exercise area and the instructor then took control to demonstrate an approach before bringing the aircraft to the hover at 3 feet above ground level. Up to this point he had not been aware that any especially heavy up force was required to hold the collective lever but, as soon as he relaxed his grip, the lever slammed down to its stop before either pilot could stop it. The aircraft dropped heavily to the ground and, suspecting structural damage, the instructor shut down the engine.

The instructor had not flown the aircraft since its return from maintenance on 27 June and said that, although the aircraft was serviceable, he suspected that the rotor was balanced in a way that produced an unusually strong tendency to throw off pitch¹ at high power settings. He explained that students and other instructors who had recently flown the aircraft would not necessarily have noticed this tendency unless they had relaxed their hold on the collective lever in the hover, as he had done. The operating company had notified a requirement to their maintenance organization for rotors to be trimmed so that they did not tend to throw on pitch in autorotation, a requirement that would normally produce acceptable trim in all normal operating modes.

¹A natural tendency for rotor blades to reduce pitch, which is normally partly compensated for when rotors are balanced.