

SA341G Gazelle 1, G-BCHM

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Aircraft Type and Registration:	SA341G Gazelle 1, G-BCHM
No & Type of Engines:	1 Turbomeca Astazou 3A turboshaft engine
Year of Manufacture:	1974
Date & Time (UTC):	5 July 1997 at 1120 hrs
Location:	Springfield Farm, Melton Mowbray, Leicestershire
Type of Flight:	Private
Persons on Board:	Crew - 1 - Passengers - 1 adult, 2 children
Injuries:	Crew - None - Passengers - None
Nature of Damage:	Fuselage beyond economic repair; engine and dynamic components to be transferred to a donor fuselage
Commander's Licence:	Private Pilot's Licence
Commander's Age:	50 years
Commander's Flying Experience:	68 hours (H) (of which 29 were on type), 130 hours fixed wing Last 90 days - 18 hours (H), 11 hours fixed wing Last 28 days - 4 hours (H), 1 hour fixed wing
Information Source:	Aircraft Accident Report Form submitted by the pilot

The pilot and owner of the helicopter intended to hover-taxi it from its usual parking spot in a grass paddock, where it had been standing for three weeks, to a newly-prepared concrete hard standing, 60 metres to the west. Weather conditions were good with a light wind from the south-west. A temperature of 24°C was indicated on the helicopter's temperature gauge, and the paddock was wet following extensive rain over the previous three week period. A friend, the pilot's daughter and a neighbour's son were passengers.

The pilot carried out a thorough pre-flight inspection before embarking his passengers and giving them a safety brief, including the need for the front-seat (adult) passenger to keep clear of the flying controls. He then carried out the engine start and rotor procedures by reference to a military checklist (AP 101C- 0901 - 14 Issue 2, Feb 81, AL5 Nov 1989). All actions and indications were normal and he particularly noted that the right pedal was forward of the left, as would normally be

required at lift-off and in the hover. Following hydraulic system and 'FREDA' checks, the pilot advised his passengers to prepare for take off and commenced a lift-off to the hover. The wind was from the 20° to 30° left of the nose.

The initial lift-off was normal but at a height of about 3 feet the helicopter yawed to the left. The pilot believes that he took the necessary corrective actions with the yaw pedal but the left yaw continued through approximately 2 revolutions with the helicopter climbing to about 9 feet and rolling to the right. The pilot elected to carry out an immediate landing by lowering the collective lever. Ground contact was firm but the helicopter remained upright and came to rest on the original take-off heading. Engine and rotor shutdown was carried out and the passengers and pilot evacuated through the passenger (left) door as the pilot's door was jammed. There were no injuries.

Inspection revealed that the port skid had dug into the soft ground and there was extensive damage to the rear cross member and the floor pan. The tail skid and the starboard vertical stabilising fin had been damaged by contact with a heavy traffic cone which had been used to mark the edge of the grass landing area during hard standing construction.

An experienced Gazelle flying instructor, who examined the helicopter after the accident, reported that there was mud on the left-hand (passenger side) yaw pedals. However, the passenger had been briefed carefully about keeping clear of the controls and he confirmed, after the accident, that his feet had been together and away from the pedals. The passenger reported that he felt a vibration through the helicopter as it started to turn. The pilot had not been aware of abnormal vibration and commented that, as this was his passenger's first flight in a helicopter he would not have had a 'bench-mark' against which to judge vibration levels.

The pilot reported that he examined the helicopter after the accident and that the yaw control and fenestron drive system seemed to be intact and this was confirmed by the maintenance organisation which undertook repair. The latter also reported that there was no evidence of unserviceability or damage other than that attributable to the heavy landing.

It is therefore most likely that the helicopter suffered the sudden loss of yaw control which can occur in the Gazelle in light wind conditions.

A similar accident occurred to another Gazelle a few weeks after this one and was the subject of an AAIB Field Investigation (EW/C97/7/9). The report is published in this bulletin and makes recommendations which are also relevant to this accident.