

Aircraft type and registration: Agusta 109 G-GBCA (light twin engine helicopter)

Year of Manufacture: 1984

Date and time (GMT): 7 June 1985 at 2125 hrs

Location: Glyndeborne, Sussex

Type of flight: Private

Persons on board: Crew — 1 Passengers — 4

Injuries: Crew — Nil Passengers — Nil

Nature of damage: Substantial damage to rotating components and tail boom

Commander's Licence: ATPL

Commander's Age: 56 years

Commander's Total Flying Experience: 11,000 hours (of which 260 were on type)

Information Source: AIB Field Investigation.

The helicopter had flown to Glyndeborne, arriving in good weather at 1600 hours, and had landed on the helipad laid out for the purpose. The pilot knew that his departure would take place in darkness and he therefore positioned the helicopter so that it was orientated in the direction he had chosen for his transition into forward flight.

Later that evening, whilst there was still daylight, the pilot pre-flight checked the aircraft and laid out two reflective cones along the line of his intended departure. He knew from previous experience that the reflective tape would be illuminated by his landing lights and would give sufficient visual reference for the transition and initial climb.

By the time that the passengers were ready to leave it had started to rain. After seating the passengers in the back and securing the luggage bay, the pilot began his start up checks.

The rain was by now more persistent so the pilot delayed take off until the heater, which uses a muff around the engine exhaust to supply heat to the cabin and demisters, became effective. Although the rain was heavy, the pilot could see the two reflective cones through the windscreen area swept by the wipers, and so he considered that he had sufficient visual reference to lift off.

As he lifted into a low hover the main transmission chip warning light illuminated; the pilot operated the 'zap' device which burns off small deposits from the chip detector but the light stayed on. By this time the rain was very heavy and witnesses reported a marked increase in wind strength. Almost simultaneously there was a rapid misting of the windscreen perspex such that the pilot lost visual reference, and co-incidentally the lateral cyclic control became very stiff. The helicopter had a history of an unexplained stiffening of the cyclic control in the lateral plane. The maintenance organisation had previously carried out extensive tests on the control systems but they were unable to reproduce the fault on the ground.

Before the pilot could wipe the windscreen with his hand the helicopter moved backwards and struck some trees. The main rotor blades broke off on contact with some large tree trunks and the fuselage fell on its left side, demolishing a brick wall alongside the road. The pilot immediately cut all electrical power and jettisoned his door to escape from the wreckage. He assisted the passengers out through the right passenger door. There was no fire.

Examination of the wreckage revealed no pre-crash defect in the main transmission. The cyclic control system was extensively investigated but no fault could be found.