

No: 9/87

Ref: 1c

Aircraft type and registration: Slingsby T67A G-BJCY

No & Type of engines: 1 Lycoming O-235-L2A piston engine

Year of Manufacture: 1981

Date and time (UTC): 12 June 1987 at 1812 hrs

Location: near Effingham, Surrey

Type of flight: Private (pleasure)

Persons on board: Crew — 1 Passengers — 1

Injuries: Crew — 1 (fatal) Passengers — 1(fatal)

Nature of damage: Aircraft destroyed

Commander's Licence: Private Pilot's Licence

Commander's Age: 49 years

Commander's Total Flying Experience: 420 hours (of which 4 were on type)

Information Source: AIB Field Investigation

The aircraft took off from Redhill at 1800 hrs for a local flight with the pilot and one male passenger on board. The aircraft had been refuelled prior to this flight.

A number of witnesses saw the aircraft flying over a large field south of Effingham and Great Bookham at a height above ground level (AGL) estimated at 500 to 600 feet. The aircraft was seen to pull up into a looping manoeuvre, and as the aircraft became inverted the engine noise ceased. Three witnesses have stated that the propeller was stationary after the aircraft had completed the loop and was pointing towards the ground. The aircraft was seen to "flick", or rock laterally to its left during its descent then disappear behind trees and hedges, and there were no witnesses to the impact. It struck the ground in a steep nose down attitude, the aircraft was completely destroyed, and the occupants killed by the impact forces. The police and emergency services attended the site promptly; there was no fire.

The pilot had flown fifteen individual types of aircraft including five with aerobatic capabilities. There is log book evidence that he had looped a Slingsby T67 a number of times in 1984, but despite extensive enquiries it cannot be established whether he underwent any form of aerobatic training.

The wreckage was contained in a relatively compact area, and it was evident that the horizontal component of the impact velocity was small compared to the vertical component. The aircraft had struck the ground with the right wing tip first, followed in rapid succession by the nose and left wing. The disposition of the ground impact marks indicated that the aircraft had struck the ground in approximately a 70° nose down altitude, and banked steeply to the right. The imprint made by the left wing leading edge was orientated some 40° in a clockwise

direction from that made by the right wing leading edge, indicating that the aircraft had been rotating rapidly to the right about its longitudinal axis at the time of impact.

Fragments of the wooden propeller displayed no leading edge damage or chordwise scoring, suggesting little if any rotational energy at impact. The fuel tank, which is located in front of the cockpit, had burst open on impact. There was considerable fuel staining on the grass, indicating that there was adequate fuel on board.

Following the on-site examination, the wreckage was taken to AIB's facility at the Royal Aircraft Establishment at Farnborough for a detailed examination. No pre-impact failure was found in the engine or flying controls, although the presence of white-coloured deposits on the cylinder head exhaust stubs and piston crowns suggested the engine had been running at a lean mixture setting. Fuel was found in the electrically operated boost pump, the engine driven fuel pump, and the carburettor float chamber.

The Slingsby T67A is an aerobatic aircraft and entry speeds for most aerobatic manoeuvres are placarded in the cockpit. The fuel and oil systems are not capable of sustaining the engine under negative 'g' and inverted flight while under power is prohibited. A momentary engine failure resulting from a lean cut is the likely consequence of keeping power applied when the aircraft is subjected to negative 'g' whilst inverted.