

Aircraft type and registration: Slingsby T67M G-FFLY

No & Type of engines: 1 Lycoming AE10-320-DIB piston engine

Year of Manufacture: 1983

Date and time (UTC): 5 May 1986 at 1426 hrs

Location: Cranfield Aerodrome, Bedfordshire

Type of flight: Display

Persons on board: Crew — 1 Passengers — None

Injuries: Crew — 1 (fatal) Passengers — N/A

Nature of damage: Aircraft destroyed

Commander's Licence: Commercial Pilot's Licence

Commander's Age: 39 years

Commander's Total Flying Experience: Approximately 3200 hours (of which 580 were on type)

Information Source: AIB Field Investigation.

History of the flight

The aircraft was engaged in a display flight in front of a crowd attending a flying display and radio controlled model aircraft "Expo" at Cranfield. The display axis was roughly based on runway 22/04.

The pilot had flown the aircraft the previous day, flying parallel to the crowd line. At the end of each run the aircraft pulled up vertically into what appeared to be a half barrel roll and pull through, so that the aircraft was then heading in the opposite direction. These manoeuvres were carried out at a height and distance from the crowd line that was acceptable to the organisers and knowledgeable witnesses.

On the day of the accident, after a slight adjustment to the timing by the organisers, the pilot flew a similar display sequence, but witness statements indicate that the aircraft was lower and closer to the crowd line than on the previous day. The aircraft's final manoeuvre was to fly low past the crowd from their right to left, enter a steep left turn, then roll level and pull up into what witnesses describe as a half barrel roll and pull through manoeuvre. A video recording shows the aircraft pulling up (unfortunately missing the top of the manoeuvre), but then records the aircraft in a steep nose down attitude heading away from the crowd. Witnesses and the video tape indicate that the aircraft then pitched significantly nose-up, flicked to the right and descended in a nose down, right wing down attitude until striking the ground. The pilot was killed instantly by a head injury although his full harness held on impact. There was no fire and the fire and rescue services arrived within a very short period of time.

Examination of the Wreckage

The aircraft made its initial impact with the ground with its right wing tip which was followed by the right main landing gear and then the right underside of the engine. The aircraft then rapidly rotated to the right severely disrupting the right wing and rear fuselage area and came to rest after travelling rearwards for approximately 40 feet. At the initial impact the attitude of the aircraft was approximately 30° rightwing low and 12° nose down. The speed at impact was assessed as being in the region of 65 mph. Examination of the wreckage at the accident site established that at the initial contact with the ground the aircraft was structurally intact and that all the flying control surfaces were attached and the flaps were retracted. Evidence from the damage to the propeller and marks in the ground caused by the propeller indicated that at impact the engine was providing power to the propeller. The fuel cock and magneto switches were found to have been selected ON at impact. All the cockpit instrumentation and switch selections were consistent with the flight that was being undertaken. The fuel tank was totally destroyed by the impact but a strong smell of fuel was present some 6 hours after the accident and a large area of fuel affected grass was noted 2 days after the accident.

Detailed examination of the wreckage showed that all the flying control circuits were intact at impact and that there was no evidence of a control jam or restriction having occurred. A strip examination of the engine was carried out and no failure or defect was found that would have caused a loss of power. Fuel was found to be present in a number of the engine fuel system components.