

No: 3/85

Ref: EW/C901/01

Aircraft type and registration: Grumman American AA5A Cheetah G-BHZL (light single engined fixed wing aircraft)

Year of Manufacture: 1978

Date and time (GMT): 5 February 1985 at 0715 hrs

Location: Near Elstree Aerodrome

Type of flight: Private (Business)

Persons on board: Crew — 1 Passengers — 2

Injuries: Crew — None Passengers — None

Nature of damage: Severe damage to wings, nose and aft fuselage. Fin and right tailplane damaged

Commander's Licence: Private Pilot's Licence, with IMC, Night and Full Instructor's Ratings

Commander's Age: 41 years

Commander's total flying experience: 5072 hours (of which 4200 were on type)

Information Source: AIB Field Investigation and Aircraft Accident Report Form submitted by pilot

After taking off from Elstree on runway 08, en route for Luton and Dublin, the aircraft failed to climb and crashed in a forest approximately $\frac{1}{3}$ of a mile east of the airfield. The pilot and two passengers escaped serious injury and were able to vacate the aircraft immediately. Also on board the aircraft were six boxes which the pilot had estimated were some 17—20 lbs each in weight. These boxes were subsequently found to weigh some 36—37 lbs each, giving a total weight of 219 lbs. Three of the boxes had been placed on the right aft seat and three on the floor in front of the seat. When added to the combined weight of the three occupants and the 30 gallons of fuel on board, the six boxes had introduced an overload of about 160 lbs above the maximum gross weight of 2200 lbs. In addition, weight and balance calculations showed that the centre of gravity was outside the aft limits, although the pilot reported no adverse handling problems.

The pilot also stated that his aircraft had been covered in thick frost with an underlying ice layer as he had started his pre-flight preparations and that he had found this impossible to completely clean from wings and tailplane using only a 'scraper'. He had carried out fuel-drain checks for water before flight quite satisfactorily and reported no symptoms of carburettor icing or power loss before or after take-off.

Inspection of the crash site revealed many small diameter (1—1½ diameter) branches from a large conifer tree, the top of which had been "felled" by the aircraft's impact, which had clear evidence of propeller blade cuts. The engine spark-plugs were in good condition and the engine driven fuel pump was removed and functioned satisfactorily. Analysis of a sample of the aircraft's 80 octane fuel showed it to be satisfactory.

In his accident report the pilot suggested that, in addition to weighing the load before flight, he should have used de-icing fluid to ensure 100% de-icing of the aircraft.