

No: 10/91

Ref: EW/C91/8/4

Category: 4

Aircraft Type and Registration: BAe ATP, G-BMYK

No & Type of Engines: 2 Pratt & Whitney 126 turboprop engines

Year of Manufacture: 1987

Date & Time (UTC): 11 August 1991 at 1445 hrs

Location: 10 miles north of COWLY near Oxford

Type of Flight: Public Transport

Persons on Board: Crew - 4 Passengers - 59

Injuries: Crew - None Passengers - None

Nature of Damage: None

Commander's Licence: Airline Transport Pilot's Licence

Commander's Age: 46 Years

Commander's Flying Experience: 8,710 hours (of which 1,325 were on type)

Information Source: AAIB Field Investigation

The aircraft was on a scheduled flight from East Midlands Airport to Jersey. At take-off it was only 356 kg below its maximum take-off weight of 22,930 kg. The take-off and climb were uneventful until approaching 14000 feet. It was company procedure to limit the propeller rpm to 82½% and the ITT to 720°C for the climb. The aircraft had entered cloud approaching 13000 feet. The climb speed was 160 kt and the rate of climb was calculated to be about 500 feet per minute. Over the next four minutes the IAS gradually reduced to 142 kt and the rate of climb decayed, at times falling to zero. The commander requested the lower level of FL 140 but ATC were unable to approve immediately as they were co-ordinating the handover of the aircraft to the next sector. The aircraft continued the climb to FL 160. At the time, although sleet was seen, the only indication of ice on the aircraft was a narrow band of what appeared to be rime ice along the leading edge of the wing and three eighths of an inch of ice on the windscreen wiper, described by one pilot as rime ice and by the other as being slightly translucent. The commander considered that the indications were insufficient to warrant the use of the airframe de-icing boots at that time. The engine anti-icing had been switched ON from take-off and the autopilot was controlling the aircraft in the heading and pitch modes. The actual outside air temperature was recorded as -5°C and the total air temperature was calculated to be -2°C.

At FL 156 the aircraft developed severe vibration which, although more extreme than either pilot had ever experienced, was put down to propeller icing. Almost immediately the left wing dropped and the aircraft began to descend. The commander said that at this point he disengaged the autopilot and flew the aircraft manually. The aircraft appeared to be slow to respond to aileron control inputs and at one stage a bank angle of nearly 70° was reached. The rate of descent was over 3000 feet per minute until the aircraft was stabilised at FL 120. During the descent the first officer selected the airframe de-icing system to HEAVY, transmitted a PAN call and changed the SSR squawk to 7700. The aircraft broke cloud just below FL 130 and the vibration ceased. As the wings were finally levelled there was a large nose pitch up to 10° which required considerable force to overcome, at which point the commander noticed that 4 units of nose up trim had been applied by the autopilot.

The commander opted to maintain FL 120 for the remainder of the flight to Jersey which was uneventful.

At the time of the incident there was a cold front lying across the aircraft's path moving in a south easterly direction. The freezing level was forecast to be at FL 105 and there was altostratus and altostratus cloud along the front with large water drops present. Severe icing was forecast. Two other aircraft to the west but at the same position relative to the front reported severe icing prior to and subsequent to the incident, one of which suffered a loss of control and height. The latter is the subject of an investigation by the Irish Authorities.

The Chief Inspector of Air Accidents has ordered a Formal Investigation into this accident under the provisions of The Air Navigation (Investigation of Air Accidents) Regulations 1989.