

No. 7

Olstead Aircraft, D.H. 89A Rapide aircraft, crashed near Hexham,
Northumberland, England, on 19 February 1954. Civil Aviation
Accident Investigation Branch, Report No. C-620

Circumstances

The aircraft took off from Newcastle Municipal Airport at 0850 hours on a charter flight to Dublin Airport. About 10 minutes later when flying in cloud the pilot saw that ice was forming on the wing leading edges and found that the aircraft would not climb above 3,200 feet. He decided to return but a minute or so afterwards lost control of the aircraft, which went into a dive. While the pilot was trying to regain control it levelled out but immediately afterwards struck the ground. None of the occupants was seriously injured. Fire broke out on impact and the aircraft was destroyed.

Investigation and Evidence

During the preparations for the flight the Newcastle control officer gave the pilot a copy of the route forecast and showed him the two weather warnings.

1. The forecast given to the pilot for the route Newcastle-Dublin during the period 0815 hours to 1115 hours on the day of the accident was as follows:

"Inference:

A complex depression centred over the British Isles is slow moving.

Winds:

Surface E. 10-15 kts becoming variable 5 kts becoming W.N.W. at 10 kts.
2,000 feet 120° 15-20 kts becoming variable 10 kts becoming
360° at 10-15 kts.
5,000 feet 130° 15-20 kts becoming variable 10-15 kts becoming
340° at 10 kts.
10,000 feet 140° 15-20 kts becoming variable 10-15 kts becoming
320° at 10 kts.

Weather: Cloudy-occasional rain or drizzle with snow or sleet on hills.

Visibility: 2-3 miles but 1-2,000 yds in precipitation and in hill fog.*

Cloud: 8/8 Sc. and St. 1,200 feet - 1,800 feet base falling to
8/8 at 500 feet - 800 feet in precipitation covering hills,
tops 6-8,000 feet, 8/8 Ac. As. 10,000 feet - 15,000 feet.

Icing Index: Moderate or severe.

Freezing

Level: 1,500 feet.

* The words "and in hill fog" were incorrectly substituted for "much hill fog" in the forecast given to the pilot.

2. The following warnings were shown to the pilot before departure:

a) Issued by Preston MET Station at 1900 hours on 18 February 1954 "Severe icing with moderate or severe turbulence expected in cloud above freezing level* over Northern FIR for next 18 hours."

b) Issued by Watnall MET Station at 0700 hours on 19 February 1954 "Extensive fog and low stratus and icing over Watnall FIR with severe icing above 2,000 feet will persist for a further 24 hours."

After perusal of these documents the pilot filed a flight plan giving inter alia IFR flight at a cruising level of 6,000 feet. He next weighed the passengers and luggage and made out a load sheet.

The pilot then ground tested the engines and after switching on the pitot head heater took off at 0850 hours. Cloud was entered at an altitude of about 500 feet and the pilot set course flying IFR during the climb to his intended cruising altitude of 6,000 feet.

Clearance from Newcastle Control to Preston ATC was then obtained by R/T but contact with Preston could not be made; this the pilot attributed to his low altitude. Approximately 10 minutes after taking off, when an altitude of 3,000 feet had been reached, the pilot saw that the windscreen was becoming opaque and that the airspeed indicator was fluctuating. He immediately opened the side panels to find that thick ice was forming on the wing leading edges and interplane bracing. The aircraft then started to vibrate and would not climb above 3,200 feet. Since control of the aircraft had also become sluggish and the port engine revolution indicator showed a drop of 200 rpm the pilot decided to return to Newcastle and turned on to a reciprocal track. A minute or so later he lost control of the aircraft which went into a dive and lost height rapidly. The pilot tried to regain control by the application of full engine power but as this appeared to have little effect he throttled back. Shortly afterwards the aircraft struck the ground and fire broke out but all the occupants were able to escape without serious injury.

The accident was not seen by any ground witnesses as sleet was falling and visibility was very poor. The occupants did not know their whereabouts so some of them set off in different directions to obtain help. The police were eventually contacted and rescue services were then sent promptly to the scene, the first arriving at 1040 hours.

The aircraft had crashed on soft moorland 750 feet above sea level and was destroyed by fire. Inspection showed that it had struck the ground with little forward speed when in an almost level attitude. On impact the landing wheels had penetrated the ground to a depth of 2-1/2 feet and the undercarriage had collapsed. The aircraft had then bounced forward 20 yds and caught fire. The fire had probably started from petrol spilled from the tanks which were ruptured when the undercarriage collapsed on first impact.

The condition of the propellers indicated that the engines were not under power at the time of striking the ground.

Detailed examination of the burned wreckage did not reveal any pre-crash defect in the aircraft.

The pilot states that he chose a cruising level of 6,000 feet as he thought the freezing level given in the route forecast was 15,000 feet and that the weather given in the warnings would not affect his route. A pilot with a Commercial Pilot's Licence should have sufficient knowledge of meteorology to realize that in mid-February and with a forecast giving snow and sleet on hills a freezing level of 15,000 feet was most improbable. In addition, the warning issued at 0700 hours that morning predicting severe icing above 2,000 feet should have made him suspect there was some mistake.

* The forecasting station gave the freezing level as 2,500 feet. Owing to an error during telephonic transmission the height i.e. "at 2,500 feet" was omitted in the warning shown to the pilot.

The airframe and propellers were not equipped with the means for the removal of ice or the prevention of its formation. In consequence, the flight was made in contravention of the Air Navigation Order, 1949, and the Air Navigation (General Amendment) Regulations, 1950.

Probable Cause

The accident was the result of loss of control by the pilot due to ice accretion on the aircraft.

The pilot must be held responsible for the accident in that he did not exercise care when studying the weather forecasts and in consequence made a flight that should not have taken place.