

AVIATION OCCURRENCE REPORT

**FLIGHT INTO ADVERSE WEATHER
GROUND IMPACT**

**TRANSPORTAIR
CESSNA 182RG C-GBXO
BÉGIN, QUEBEC 3.5 nm N
17 JUNE 1995**

REPORT NUMBER A95Q0104

The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

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Summary

The Cessna 182RG, with the pilot as the sole occupant, took off from Roberval Airport, Quebec, at 1031 eastern daylight time (EDT) for a local forest fire surveillance patrol in visual flight rules (VFR).

About 10 minutes after take-off, an eyewitness saw the aircraft flying northwards at very low altitude. According to the witness, the aircraft was heading towards a mountain covered in a cloud layer. A few moments later, the witness heard a noise and heard the aircraft's engine stop. He immediately reported the incident to the police. The Flight Service Station (FSS) at Roberval picked up the signal of an emergency locator transmitter (ELT) and reported the matter to the police authorities. The local civil air search and rescue services (SERABEC) were advised, and a search was undertaken.

The aircraft was located at 1212 EDT. It had struck some trees and crashed on the south side of a mountain about 3.5 nautical miles north of Bégin, Quebec. The pilot had sustained fatal injuries.

Ce rapport est également disponible en français.

¹ All times are EDT (Coordinated Universal Time (UTC) minus four hours) unless otherwise stated.

Other Factual Information

The pilot was certified and qualified for the flight according to existing regulations. He had accumulated a total of 342 flying hours. He held an instrument (IFR) rating and had a total of 50 hours dual-control instrument flight.

The pilot had been hired by the company to make surveillance flights for the Société de protection des forêts contre le feu and had completed ground and flight training on the Cessna 182RG for that purpose. The Society had given its pilots a briefing to familiarize them with surveillance flights, the global positioning system (GPS), and the procedures to be followed. It was suggested to the pilots that they make all surveillance flights in VFR conditions with a minimum ceiling of 2,000 feet above ground level (agl). They were also asked to avoid any dangerous manoeuvres, including low-level flying.

After the initial training, six pilots and their aircraft were based at Roberval Airport. For most of them, this was their first job as a professional pilot. Every day, a patrol was assigned to the pilots, and they took off at their discretion. There was no chief pilot or flight supervisor at the Roberval base. The pilots operated on their own and made their decisions without consultation or approval.

The patrol area lay north of the base in a mountainous area. Two aeroplanes and a helicopter had taken off that morning to fly over the same area, but had turned back after encountering adverse weather.

The accident occurred at an altitude of 750 feet above sea level (asl) on the south side of a mountain near Bégin, Quebec. A few moments prior to the accident, witnesses located at the foot of the mountain and in the surrounding area had observed the aircraft flying northwards at an altitude about 100 feet above the trees. It was found that the aircraft had hit trees over 100 feet tall while making a steep turn to the right. Several trees were severed and uprooted. There were large propeller marks on the trees. Both wings had come away from the fuselage, and other parts of the aircraft were heavily damaged by the impact with the trees and the ground. The aircraft left a trail approximately 400 feet long running southwards, that is, in the direction opposite to the intended track.

The pilot had passed his last civil aviation medical examination on 10 April 1995. The medical investigation did not reveal any evidence to suggest that incapacitation or physiological factors might have affected the pilot's behaviour. The investigation revealed that the aircraft hit the ground at high speed.

The examination of the aircraft carried out at the scene of the accident did not reveal any failure or malfunction prior to impact that might have reduced the aircraft's performance. The flaps were retracted. The aircraft's weight and centre of gravity were within prescribed limits, and the aircraft was carrying sufficient fuel to make the flight. The aircraft was equipped with the necessary instrumentation for IFR flight and was also equipped with GPS.

The pilot had told other pilots that he had had intermittent problems with the aircraft's attitude and course indicators, but he had not mentioned the problem to the company's aircraft maintenance personnel. The aircraft technical log was recovered and checked, and no defect of this kind was recorded. A check of the aircraft's vacuum pump determined that it was in working order at the time of the accident.

The pilot had not requested a weather briefing from the Roberval FSS specialist. The weather conditions on take-off at Roberval were as follows: scattered clouds at 6,000 feet; ceiling 8,000 feet overcast; and visibility 30 miles. An analysis of the weather conditions by Environment Canada indicated that the forecast for the area of the flight reported a front moving through the area. There were cloud layers and fog over the accident site. The search and rescue pilot, who took off from the airport at Saint-Honoré, Quebec, at 1137 EDT, was unable to fly over the accident site because the mountain was covered in a thick layer of fog. He was compelled to wait until about 1212 EDT before he could fly over the area where he found the wreckage. According to him, the front reported in the forecasts moved slower than estimated, and it took some time for the cloud layers at low altitude to dissipate.

Analysis

As no failure or malfunction prior to impact could have reduced the aircraft's performance, the analysis deals with the weather conditions, the flight planning, and the pilot's decision-making.

The weather forecasts, observations, and the morning flights in the area indicate that the weather conditions over the intended track were not favourable for the flight. Low stratus accompanied by drizzle and fog, as reported by the search and rescue pilot, prevailed over the route and in the mountainous area.

The pilot did not request a pre-flight weather briefing from the FSS specialist, and, although conditions at the departure aerodrome were favourable for VFR, the evidence indicates that the pilot encountered adverse weather. As there was no supervision at the base, the flight planning was not checked prior to departure.

The pilot encountered adverse weather in flight. Probably not fully trusting the aircraft instruments, the pilot may have tried to maintain visual contact with the ground. Although the pilot was qualified for IFR, the evidence indicates that he first tried to keep visual contact with the ground by decreasing the flight altitude. Later, at low altitude, he may have made a steep turn to turn back. The damage to the aircraft indicates that it hit the trees at a banked attitude and high speed. The Cessna quite likely hit the mountain in the turn without the pilot's being aware of the situation.

In 1990, the Transportation Safety Board of Canada published a safety study on VFR flight under adverse weather conditions. Among other things, this study says that lack of planning and decision-making are recurring contributing factors, regardless of the pilots' level of experience.

Findings

1. There was no chief pilot and no supervision of operations at the base.
2. The pilot did not request a weather briefing for the flight undertaken.
3. The weather conditions on the intended track were unfavourable for VFR flight.
4. The pilot encountered adverse weather en route and tried to turn back.
5. The pilot probably did not fully trust the aircraft's instruments and tried to maintain visual contact with the ground.
6. The accident site was obscured by fog throughout the morning.
7. The aircraft was flying at high speed when it hit the trees.
8. The aircraft did not show any evidence of failure prior to impact.

Causes and Contributing Factors

The pilot continued VFR flight under adverse weather conditions. Contributing factors to the occurrence were the fact that the pilot probably did not trust the instruments and the fact that he did not request weather information for the intended track prior to departure.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson John W. Stants, and members Zita Brunet and Maurice Harquail, authorized the release of this report on 18 March 1996.