

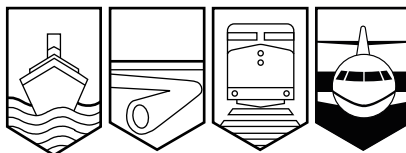
Transportation Safety Board
of Canada



Bureau de la sécurité des transports
du Canada

AVIATION INVESTIGATION REPORT

A01W0186



COLLISION WITH TERRAIN

GULF AIR TAXI INC.

CESSNA A185F N3800Q

HAINES JUNCTION, YUKON TERRITORY, 25 NM SW

26 JULY 2001

Canada

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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Report Number A01W0186

Summary

The wheel/ski-equipped aircraft, a Cessna A185F, registration N3800Q, serial number 18502196, departed Yakutat, Alaska, to pick up two glacier climbers who had been dropped on the Kennedy Glacier, Yukon Territory, several days earlier. When the pilot aerially inspected the base camp, located at the 8500-foot level, he noted that the climbers were not there. After searching the area where the climbers intended to climb, he found them at the 12 000-foot level. Because of inclement weather, they had become stranded, ran low on food and fuel, and were unable to descend to the base camp. The pilot landed close to the climbers. Once all were on board, the pilot commenced a take-off run. Before the aircraft could become airborne, the ski struck snow drifts and ridges associated with crevasses in the glacier. The aircraft then nosed over and dropped about 80 feet into a crevasse. When the aircraft did not return to base, a search was initiated. The aircraft, which was substantially damaged, was found the following day. Both climbers sustained serious injuries. The pilot sustained a fatal head injury.

Ce rapport est également disponible en français.

Other Factual Information

The pilot of the Gulf Air Inc. Cessna A185F had dropped off the two climbers on the Kennedy Glacier in Kluane National Park, Yukon Territory, on 10 July 2001. The two climbers planned to climb Mount Kennedy and then make their way back to their base camp. Arrangements had been made with the pilot to be picked up on 26 July 2001. Because of inclement weather, the climbers did not return to the base camp; instead, they set up camp in a conspicuous location at the 12 000-foot level on Cathedral Glacier to await pickup.

On the scheduled day of the pickup, the pilot flew to the base camp but could not find the climbers. After a brief search of the area, he found the climbers at the higher elevation. He then landed nearby and loaded the climbers and their equipment at approximately 1800 Pacific daylight time.¹ The pilot and the climbers discussed glacier conditions and crevasses nearby, some of which were covered with snow.

The temperature was approximately 5°C and the winds calm. The snow on the glacier was described as firm and having 12 to 15 cm of new snow in the previous two days.

The take-off began at about 1815, opposite to the direction the aircraft had landed, at approximately 12 000 feet above sea level (asl). The initial portion of the take-off run was down a 10° to 15° slope before it flattened out. This flat area was composed of smaller crevasses that had been covered with snow and had the appearance of shallow depressions. When the aircraft contacted the smaller depressions, it began to skip and turned approximately 10° to the left, as shown by the tracks in the snow.

The aircraft eventually came into contact with the lip of an open crevasse, then with a large drift of compacted snow. The propeller and the skis separated from the aircraft and were found at this location. Shortly after contacting this drift, the aircraft nosed over and fell into the next open crevasse. The aircraft came to rest on its back at the bottom of the crevasse, in a nose-down attitude, at approximately 11 500 feet asl. The initial ski tracks indicated that the aircraft would have bypassed the crevasse if the original take-off heading had been maintained throughout the take-off run.

When the aircraft did not return, the company initiated search-and-rescue procedures on the evening of July 26. Canadian and American search aircraft found the downed aircraft at 1145 on July 27 at 60°10' N 139°00' W. Search-and-rescue parties were able to medevac the two mountain climbers from the site by 1730. TSB personnel did not attend the wreckage site.

Glacier flying requires the pilot to identify the take-off path and to ascertain reference landmarks that will be visible from the ground before landing. This would prepare the pilot for the likelihood that distant portions of the take-off surface would not be visible during the initial take-off run, due to surface undulations.

The pilot co-owned Gulf Air Inc. and had been with the company for about 20 years. He was the owner of the accident aircraft. The pilot was certified and qualified for the flight in accordance with existing regulations. It was reported that he had over 14 000 hours' flight time, more than 10 years' flying experience on Cessna A185F's, and was experienced in landing and taking off

¹ All times are Pacific daylight time (Coordinated Universal Time minus seven hours).

from high-altitude glaciers. The pilot was found with only the lap belt fastened; the available shoulder harness was not attached. The investigation could not determine how the shoulder harness was being worn at the beginning of the take-off run.

Records indicate that the aircraft was certified, equipped, and maintained in accordance with existing regulations and approved procedures. Because of the location of the wreckage, no technical examination was performed on the aircraft.

The aircraft was fitted with a Continental IO-520-D engine that had been modified with the installation of a turbo charger, in accordance with supplemental type certificate (STC) No. SA1750NM. This STC enabled the engine to maintain sea-level performance to an unspecified higher altitude. The aircraft flight manual supplement for the STC did not include take-off performance information. This lack of information, combined with the steep decline of the take-off run and the undetermined snow conditions, precluded a post-accident calculation of an anticipated take-off distance.

Analysis

During the take-off run, the aircraft's acceleration was likely impeded by the depressions formed by snow-covered crevasses that prevented the aircraft from getting airborne before reaching the larger crevasses. The aircraft deviated slightly to the left, toward the crevasses, during the take-off run. The aircraft lost the skis and the propeller after contacting a compacted snowdrift. The pilot most likely lost control at this point. The high altitude contributed to the length of the take-off run, and the pilot might not have been able to see the lip of the crevasse during the take-off run.

The injuries sustained by the pilot might have been reduced had the shoulder harness been attached at the time of the impact.

Findings as to Causes and Contributing Factors

1. The series of small depressions in the glacier surface and the 12 000-foot altitude most likely prevented the aircraft from becoming airborne before reaching the larger open crevasses and the associated drifts of compacted snow.

Findings as to Risk

1. At the time of impact, the pilot was not wearing the shoulder harness provided. This lack of physical restraint contributed to his fatal injuries when the aircraft struck the bottom of the crevasse.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board authorized the release of this report on 12 August 2002.