

C I V I L A E R O N A U T I C S B O A R D
ACCIDENT INVESTIGATION REPORT

Adopted: July 23, 1957

Released: July 29, 1957

ALASKA AIRLINES, INC., STINSON AT-19, N 79069,
NEAR NOME, ALASKA, OCTOBER 2, 1956The Accident

Alaska Airlines Flight 701, a Stinson AT-19, N 79069, crashed during a snowstorm near Nome, Alaska, at approximately 1825 B. s. t., ^{1/} October 2, 1956. All five occupants were killed and the aircraft was demolished.

History of the Flight

Alaska Airlines Flight 701 is a scheduled operation between Unalakleet and Nome with intermediate Alaskan stops at Shaktoolik, Haycock, Moses Point, Golovin, White Mountain, and Council. The operation is restricted to day visual flight rule conditions and the company principally utilizes single-engine Stinson AT-19 aircraft.

On October 2, 1956, Flight 701, piloted by John D. Hutchinson, departed Unalakleet at 1221. The VFR flight plan estimated a cruising true airspeed of 90 miles per hour and showed there were 74 gallons of fuel aboard, enough for about 4 hours, 30 minutes. The flight was routine to Council. When takeoff was made at Council the flight time was 2 hours, 25 minutes and the elapsed time (including ground time at Council and other intermediate stops) was 4 hours, 24 minutes.

Flight 701 departed Council with four passengers at 1745 on the last leg of the operation to Nome. The estimated

1/ All times herein are based on the 24-hour clock and are Bering standard.

flying time to Nome was 40 minutes and the departure time of the flight indicated that it would not be completed before the end of civil twilight, which was of approximately 48 minutes duration, beginning at 1727. The aircraft was observed after takeoff taking up a southwesterly heading toward the coastline route over low terrain to Nome.

At 2023 Flight 701 was overdue and unreported. When it could not be contacted search procedures were initiated.

Investigation

At 1500 on October 3, 1956, the wreckage of N 79069 was located on Cape Nome, at a point about 15 miles east-southeast of Nome. Initial impact was on level ground at an altitude of 25 feet m. s. l. at the eastern base of a 650-foot ridge of high ground running north and south. The southern end of this ridge is three-tenths of a mile north of the shoreline to which it descends in a steep slope. This ridge lies across the flight path between the point of impact and Nome. The point of impact is within the intersection of airways Amber 1 and Green 7.

Examination of the terrain disclosed no trace of impact by the plane against the higher ground of the ridge. The wreckage itself showed that it had struck the ground at a downward angle of more than 45 degrees while heading approximately 157 degrees true. The bearing from this point toward Nome is 284 degrees true.

Impact occurred while the left wing was low. A gouge in the ground 12 feet long at right angles to the centerline of the fuselage ended at the left wing. This wing, the nose, and the landing gear which had separated, had absorbed most of the impact forces.

The left wing remained attached to the fuselage by the aileron cables only, the structural attachments having failed in an upward and rearward direction. The aileron, although severely damaged, remained attached to the left wing as did the flap. The left wing tip was demolished by forces which included dragging contact with the ground. The leading edge of the wing was flattened along its length into a plane almost normal to its chordline.

With the exception of impact damage the fabric covering of both right and left wings, ailerons, and flaps was found in good condition with no evidence of tearing or fraying prior to impact. Both fuel tanks, located in the wing butts, were severely buckled and ruptured by impact. Stains on the ground and on the structure immediately adjacent to the ruptured fuel tanks indicated that considerable fuel spillage had occurred. The attachment of the right wing and of its aileron and flap was distorted but unbroken. Flaps were in the retracted position with controls still connected.

The powerplant was completely imbedded in the frozen ground. Gouges in the earth showed that the propeller was rotating at high r. p. m. at impact.

The elevator tab was set slightly to trim the nose downward.

Because of severe impact damage the only cockpit control positions that could be determined were: Fuel tank selector on "Right Tank," ignition switch "On Both," radio receiver set at 250 kc. Equipment included a complete set of blind flight instruments with artificial horizon, directional gyro, and bank and turn indicator, all operated from an engine-driven vacuum pump.

All components of the aircraft were accounted for in the wreckage and there was no evidence found to indicate fire, structural failure, or malfunction of equipment in flight.

A check of the weights of the aircraft, crew, passengers, fuel, and cargo on board gave the computed gross weight at takeoff from Council as 4,163 pounds, 167 pounds below maximum allowable. The weight distribution was within allowable limits.

The U. S. Weather Bureau forecast for the period 1400, October 2, 1956, to 0200, October 3, 1956, was available to the pilot before his takeoff from Nome eastbound and before his takeoff from Unalakleet westbound (returning to Nome) at 1321. The forecast for the southern Seward Peninsula (which included the scene of the accident), the remainder of the Koyukuk Valley, and the middle Yukon Valley west of Ruby, was: Ceiling 3,000 and scattered to broken clouds.

On October 15, 1956, an aftercast was made by the U. S. Weather Bureau Airport Station at Anchorage, Alaska. This

aftercast is quoted below:

"AFTERCAST OF WEATHER CONDITIONS IN THE VICINITY
OF CAPE NOME, ALASKA, DURING THE AFTERNOON AND
EARLY EVENING OF OCTOBER 2, 1956

"The weather maps for October 021830Z, 030030Z, and 030630Z showed an elongated trough of low pressure oriented north-south along a line from Bettles to Anchorage, with a complex low pressure system to the southeast of Kodiak Island. While the trough was moving slowly eastward during the day, a cold front that had passed over the Seward Peninsula the night before was moving southward over southwestern Alaska in the strong northerly flow behind the trough. By evening the front had passed to the south of Bristol Bay.

"The air mass in the vicinity of Cape Nome was cold and unstable, and there was scattered snow shower activity in the area. A study of available evidence indicates that there were broken to scattered clouds with bases at 3500 to 4000 feet, mean sea level, tops general 6000 feet, but with occasional cumulus build-up to 10,000 feet. The weather at the scene of the accident could have ranged from the above described condition to as low as 500 feet obscured, one half mile visibility, in moderate snow showers. The surface winds were very likely from the northwest at about 15 mph, but could have been as strong as 25 mph. The freezing level was at the surface, and light icing could have occurred in the clouds. Some low level turbulence undoubtedly existed; this would have resulted from the unstable air mass and the fairly strong low level winds."

On October 2, 1956, atmospheric conditions made radio communications difficult, and no message was received from N 79069 although it was equipped with two-way radio.

A professional aircraft pilot was driving in the area of the accident about 1745 on the day of the accident. He reports that he: ". . . noticed a snow shower moving toward us from the northwest. I believe the ceiling and visibility would have been below minimums even if it hadn't been getting dark at the time.

"The next morning, October 3, I left Nome in a Piper Apache looking for the lost plane. I went directly to Council and talked with a partner of one of the passengers (a Mr. Anderson, who is with Northern Mining Company). He said that the flight left Council at 1745 and headed in 'a southwesterly direction.'"

The pilot had logged proposed details of this flight as a (day) VFR flight plan. He was not certificated to fly under instrument flight rules, nor was the company authorized to conduct instrument flight over this route with light aircraft. Also, as far as can be learned, Hutchinson had had no training or experience with instrument flight.

Analysis

From Council to Nome along the coast is 74 miles, or 17 miles longer than the direct route. At the planned true cruising airspeed of 90 m. p. h. it would require some 11 minutes more than the direct route. The coastal route could be flown

at near sea level whereas the 11-minute shorter direct route passed over rugged terrain. Also, the coastal route offered an occasional ground light.

When the flight departed Council at 1745 the weather there, and reported weather ahead, was above VFR minimums. Sunset at Council on that date was at 1719; at Nome it was at 1726. Official civil twilight on that date and for that area lasted from 1727 to 1815. The operations specifications of the air carrier restricted its operation over this route to day only. By definition "day" ends at the end of civil twilight. There was an overcast in the crash area and it is probable that total darkness existed at the time of the crash. This condition is confirmed by a qualified witness who was in the area of the crash at 1745.

The restriction against night or IFR operations contained in the air carrier's operations specifications is provided in order to prevent the type of situation which occurred in this instance. The judgment of the pilot in planning and executing a flight under these circumstances is open to serious question. Having departed Council for Nome so short a time before sunset, he was committed to complete the flight at Nome since the lack of lighting facilities at Council made it impossible to return to his point of departure and no other suitable airports were available along the route for use as alternates.

It appears that the pilot, aware of the failing light, flew directly to the coastline and then proceeded westward

along it toward Nome. He may well have seen no evidence of snow showers approaching from the northwest because of the overcast and failing light. As the flight, now in near total darkness, approached Cape Nome snow showers may have been encountered which further reduced visibility. However, the flight continued with the pilot probably attempting to fly contact by reference to the road or coastline. It appears likely that Hutchinson was not completely sure of his position when he reached a point near the scene of the accident. It is believed that at this time he completely lost visual contact, and without instrument training, lost control and struck the ground in a steep spiral. It is also possible that he had a fleeting glimpse of the ridge while at low altitude and in attempting to avoid it lost control of the aircraft.

Since the only icing conditions mentioned in the aftercast were " . . . and light icing could have occurred in the clouds" and since the flight was limited to day VFR conditions, it seems improbable that the icing conditions could have contributed to this accident.

Findings

On the basis of all available evidence the Board finds that:

1. The carrier, the aircraft, and the pilot were properly certificated for day VFR operations over the route involved.
2. The gross weight and its distribution were within authorized limits.

3. The flight was routine to Council.

4. The area forecast indicated weather conditions between Council and Nome would be better than VFR.

5. The official civil twilight for Nome on October 2 was between 1727 and 1815. The flight departed Council at 1745 and crashed at approximately 1825.

6. En route, Flight 701 lost visual reference with the ground.

7. The pilot, inexperienced in instrument flying, lost control of the aircraft and crashed.

Probable Cause

The Board determines that the probable cause of this accident was the action of the pilot in flying into conditions of darkness and adverse weather in which he could not maintain adequate control of the aircraft.

BY THE CIVIL AERONAUTICS BOARD:

/s/ JAMES R. DURFEE

/s/ CHAN GUPNEY

/s/ HARMAR D. DENNY

/s/ G. JOSEPH MINETTI

/s/ LOUIS J. HECTOR

S U P P L E M E N T A L D A T A

Investigation

The Civil Aeronautics Board's Anchorage, Alaska, office was notified about 2030 on October 2, 1956, that the aircraft was missing. The wreckage was found about 1500 October 3, 1956. Investigation was started immediately in accordance with the provisions of Section 702 (a) (2) of the Civil Aeronautics Act of 1938, as amended.

Air Carrier

Alaska Airlines, Inc., is a scheduled air carrier. It holds Civil Aeronautics Administration operating certificates and Civil Aeronautics Board certificates of convenience and necessity which authorize it to operate both main line and feeder line services. The operation involved in this accident is a feeder line authorized by permanent certificate of convenience and necessity (No. 128) and by an air carrier operating certificate issued by the Civil Aeronautics Administration pursuant to Part 42 of the Civil Air Regulations

On this feeder line the carrier is authorized to operate light planes under day VFR conditions only and no clearance from dispatchers is required.

Flight Personnel

Pilot John D. Hutchinson, age 25, was employed by Alaska Airlines as a bush pilot on January 25, 1956. He was based at Nome, Alaska, during his entire employment. He held a valid airman certificate with commercial pilot and single-engine land ratings. Company records indicate that he had flown 5,000

plus hours, all in single-engine aircraft, in various parts of the United States and Alaska. While employed by Alaska Airlines he flew 492 hours out of Nome in Stinson AT-19 and Norseman UC-64 aircraft. Most of that time was over the route involved. His last route check was dated July 27, 1956. His last physical, second-class, was successfully passed on November 15, 1955, without waivers or limitations.

The Aircraft

N 79069, Stinson AT-19, manufacturer's serial No. FK 975, had been flown a total of 2,484 hours, 336 hours of which were subsequent to its last annual inspection, 44 hours since its last 100-hour inspection, and 5 hours 40 minutes since its last line maintenance. The powerplant, Lycoming R-680-13, manufacturer's serial No. 12676, was equipped with a Hamilton Standard 2B20 propeller, manufacturer's serial No. T14399. The powerplant and propeller had each been operated 98:45 hours since overhaul.