# Aviation Investigation Final Report

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| **Location:** | ANCHORAGE, Alaska | **Accident Number:** | ANC93FA081 |
| **Date & Time:** | June 6, 1993, 14:15 Local | **Registration:** | N70020 |
| **Aircraft:** | Cessna A185E | **Aircraft Damage:** | Substantial |
| **Defining Event:** | | **Injuries:** | 1 Minor |
| **Flight Conducted Under:** | Part 91: General aviation | | |

## Analysis

THE FLIGHT WAS COMMENCED FOR THE PURPOSE OF TRANSPORTING SUPPLIES TO A LODGE IN PREPARATION FOR THE ARRIVAL OF SEASONAL GUEST. THE OWNER OF THE LODGE ALSO OWNED THE AIRPLANE. THE PILOT IN COMMAND REPORTED THAT HE COMMENCED THE TAKEOFF WITH 1 NOTCH OF FLAP (10 DEGREES) IN GUSTY WIND CONDITIONS. THE CESSNA 185 FLOATPLANE OWNER'S MANUAL SUPPLEMENT RECOMMENDS THE USE OF 20 DEGREES OF FLAP. THE TAKEOFF AND INITIAL CLIMB WERE UNEVENTFUL. THE PILOT BEGAN A DOWNWIND TURN AT 500 FEET AND THE AIRPLANE BEGAN TO SETTLE DESPITE THE APPLICATION OF FULL POWER. THE PILOT REPORTED THAT HE EXPERIENCED NO PROBLEMS WITH THE PLANE'S ENGINE. AT THE TIME OF THE ACCIDENT, THE AIRPLANE WAS 252 POUNDS OVER THE MAXIMUM AUTHORIZED GROSS TAKEOFF WEIGHT LIMITATION.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT IN COMMAND EXCEEDING THE MAXIMUM AUTHORIZED GROSS TAKEOFF WEIGHT OF THE AIRPLANE AND HIS FAILURE TO COMPENSATE FOR THE WIND CONDITIONS. A FACTOR IN THE ACCIDENT WAS THE GUSTY WIND CONDITION.

### Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (C) AIRCRAFT WEIGHT AND BALANCE - EXCEEDED - PILOT IN COMMAND
2. (F) WEATHER CONDITION - GUSTS
3. (C) COMPENSATION FOR WIND CONDITIONS - NOT PERFORMED - PILOT IN COMMAND
4. PROCEDURES/DIRECTIVES - NOT USED - PILOT IN COMMAND

## Factual Information

A. HISTORY OF FLIGHT

On June 6, 1993, at 1415 Alaska daylight time (ADT), a float equipped Cessna model A185E airplane, N70020, operated by Stephan Lake Lodge, collided with terrain shortly after departure from the Lake Hood Seaplane Airport in Anchorage, Alaska. The commercial certificated pilot in command, the sole occupant, received minor injuries and the airplane was destroyed. At the time of the mishap, the airplane was being operated as a business flight under 14 CFR Part 91 for the purpose of transporting supplies to the lodge in preparation for the arrival of seasonal guests. Visual meteorological conditions prevailed at the time and a company VFR flight plan was in effect.

The pilot provided the following information to the NTSB investigator in charge during the on scene investigation. In preparation for the departure he conducted a preflight and before takeoff check and found the plane's systems to be in proper working order. Twenty gallons of aviation low lead fuel was added to the plane's left wing fuel tank. He estimated that at the time the takeoff was commenced, the total fuel on board the airplane was approximately 40 gallons - 25 gallons in the left tank and 15 gallons in the right tank. The plane's cargo weighed approximately 700 pounds and was comprised of miscellaneous canned goods, four automobile batteries, one 15 hp outboard motor, one 50 pound bag of flour and 50 pounds of sugar. The cargo was distributed in the passenger and cargo compartments. He commenced an upwind takeoff with one notch of flaps (approximately 10 degrees). The takeoff run and initial climbout was uneventful. At an altitude of about 500 feet above the ground, he began a standard left downwind turn toward the north/northeast. He did not recall specifically what the indicated climb airspeed was, but that based upon the attitude of the airplane it should have been in the neighborhood of 100 miles per hour. During the turn, the airplane began to descend despite the application of maximum engine power. The engine had about 200 hours on it and it ran fine. He turned the airplane back into the wind and selected another notch of flaps (20 degrees total) but the airplane continued to descend and subsequently collided with the tree and scrub covered terrain. .

B. WITNESS INFORMATION

There were no witnesses to the accident.

C. FLIGHTCREW INFORMATION

The pilot, dob 11/10/1937, is the holder of commercial pilot certificate No. 2207905, with ratings and limitations of single engine land and sea, instrument airplane. His second class medical dated 02/22/93, required the possession of corrective glasses for near vision. He

completed a Biennial Flight Review in a Piper PA-11 aircraft on 05/29/93. At the time of the accident, the pilot had accrued a total flight time of 1,530 hours of which 600 hours were in the Cessna 185 aircraft. His flight time during the previous 90 day period was 6.5 hours (2 hours in C185), 30 day period 4.7 hours (2 hours in C185), and 24 hour period 1 hour (in C185).

D. METEOROLOGICAL INFORMATION

The pilot characterized the weather as sky clear, visibility unrestricted, and a southeast wind with light turbulence. The 1418 local surface weather observation (SA) for the Anchorage International Airport was sky condition 5,000 scattered, ceiling estimated 14,000 broken, visibility 60 miles, temperature 57F, dewpoint 40F, wind 160 degrees magnetic, wind speed 18 knots, gust 24 knots. No Airmets or Notams were issued or received for the area during the period in which the accident occurred.

E. WRECKAGE & IMPACT INFORMATION

The accident site is approximately 1/4 mile north of the approach end of runway 31 at the Lake Hood Strip. The plane's structure was found intact and all parts and components were accounted for. The fuselage came to rest in a near horizontal plane with the right wing up approximately 45 degrees (see photographs). Continuity was established with the respective flight control and powerplant systems. The flap control lever was found in the second notch detente (approximately 20 degrees) and the flap surfaces coincided with the setting selected. An examination of the powerplant showed no evidence of external damage. The engine exhibited no sight of having sustained either internal or external damage. The engine was turned through with the aid of the propeller. The only resistance felt was the resistance produced by the piston compression cycles. A subsequent cylinder compress check and magneto timing check revealed the engine to be within the required limits and specification. A light odor of aviation fuel permeated the accident site. The left and right wing tanks appeared to have remained intact. No visible sign of fuel was evident in the right wing tank. While removing the left wing fuel cap, fuel began flowing out around the cap so the process was halted and the cap was secured. The cargo was strewn throughout the interior of the plane.

F. WEIGHT & BALANCE INFORMATION

The cargo was removed and weighed by the NTSB and FAA investigators on scene. The total weight of the cargo was 849 pounds. It was not possible to ascertain the exact location of each cargo item. The following information was used to determine the weight of the airplane at the time of the accident.

| Item | Weight/Lbs. |
|---|---|
| Acft. Empty Wt. With Edo 3430 Floats From June 03, 1992 Acft Log Book Entry: | 2,376 |

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|---|---|
| Pilot Wt. | 137 |
| Fuel (40galx6lb.p/gal) | 240 |
| Cargo | 849 |
| Total Wt. Of Acft. | 3,602 The maximum allowable gross takeoff weight of the airplane was 3,350 pounds. |

## Pilot Information

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|---|---|---|---|
| **Certificate:** | Commercial | **Age:** | 56,Male |
| **Airplane Rating(s):** | Single-engine land; Single-engine sea; Multi-engine land | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | |
| **Instrument Rating(s):** | Airplane | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | No |
| **Medical Certification:** | Class 2 Valid Medical--w/ waivers/lim | **Last FAA Medical Exam:** | February 22, 1993 |
| **Occupational Pilot:** | Yes | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 1530 hours (Total, all aircraft), 600 hours (Total, this make and model), 1530 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft) | | |

## Aircraft and Owner/Operator Information

| | | | |
|---|---|---|---|
| **Aircraft Make:** | Cessna | **Registration:** | N70020 |
| **Model/Series:** | A185E A185E | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 18501895 |
| **Landing Gear Type:** | Float | **Seats:** | 1 |
| **Date/Type of Last Inspection:** | May 23, 1993 Annual | **Certified Max Gross Wt.:** | 3350 lbs |
| **Time Since Last Inspection:** | 5 Hrs | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | 2054 Hrs | **Engine Manufacturer:** | CONTINENTAL |
| **ELT:** | Installed, not activated | **Engine Model/Series:** | IO-520 |
| **Registered Owner:** | BAILEY, JAMES K. | **Rated Power:** | 300 Horsepower |
| **Operator:** | BAILEY, JAMES K. | **Operating Certificate(s) Held:** | None |
| **Operator Does Business As:** | | **Operator Designator Code:** | |

## Meteorological Information and Flight Plan

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| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | ANC ,144 ft msl | **Distance from Accident Site:** | 1 Nautical Miles |
| **Observation Time:** | 14:18 Local | **Direction from Accident Site:** | 360° |
| **Lowest Cloud Condition:** | Scattered / 5000 ft AGL | **Visibility** | 60 miles |
| **Lowest Ceiling:** | Broken / 14000 ft AGL | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 18 knots / 24 knots | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 160° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 29 inches Hg | **Temperature/Dew Point:** | 14°C / 4°C |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | (LHD ) | **Type of Flight Plan Filed:** | Company VFR |
| **Destination:** | STEPHEN LAKE , AK | **Type of Clearance:** | VFR |
| **Departure Time:** | 14:14 Local | **Type of Airspace:** | Class D;Class E |

## Wreckage and Impact Information

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| **Crew Injuries:** | 1 Minor | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 1 Minor | **Latitude, Longitude:** | 61.209014,-149.889694(est) |

## Administrative Information

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| **Investigator In Charge (IIC):** | Borson, Timothy |
| **Additional Participating Persons:** | DEBORAH K. COVIC BEU; ANCHORAGE , AK |
| **Original Publish Date:** | May 17, 1994 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=2304 |