Aviation Investigation Final Report

Location:	Bettles, Alaska	**Accident Number:**	ANC06LA074
Date & Time:	June 21, 2006, 18:35 Local	**Registration:**	N94204
Aircraft:	Cessna 185F	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airline transport certificated pilot and the sole passenger were departing to the south from a seaplane base in a float-equipped airplane, under Title 14, CFR part 91. Winds were reported to be 230 degrees (true) at 8 knots, with gusts to 14 knots. A witness who saw the airplane begin the takeoff run said that as the airplane continued its takeoff run towards the south, it "staggered into the air near the south end of the lake, then turned east, away from an area of slight rising terrain, and downwind." She said that the nose of the airplane then pitched sharply to the right, then to the left, and descended nose first, behind several trees. Postaccident investigation revealed that the airplane came to rest nose down in swampy terrain. No mechanical anomalies were noted with the airframe, engine, or engine accessories. The pilot noted in his written statement to the NTSB that just after takeoff, he began a slight turn to the east to avoid the rising terrain, and encountered a decreasing windshear. He said that the airplane stalled, and crashed at a point between the waterline and the trees. He stated that there were no preaccident mechanical problems with the airplane, and noted that he believed the four-point seat and shoulder harness restraint system in the airplane saved their lives.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain adequate airspeed during takeoff, which resulted in an inadvertent stall and collision with terrain. Factors contributing to the accident were the inadvertent stall, and an unfavorable wind.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (F) WEATHER CONDITION - UNFAVORABLE WIND
2. TERRAIN CONDITION - RISING
3. (C) AIRSPEED(VS) - NOT MAINTAINED - PILOT IN COMMAND
4. (F) STALL - INADVERTENT - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
5. TERRAIN CONDITION - SOFT

Factual Information

On June 21, 2006, about 1835 Alaska daylight time, a float-equipped Cessna 185F airplane, N94204, sustained substantial damage following a loss of control, and subsequent collision with tundra-covered terrain, after takeoff from the VOR Lake Waterlane Seaplane Base, Bettles, Alaska. The airplane was being operated as a visual flight rules (VFR) cross-country personal flight under Title 14, CFR Part 91 when the accident occurred. The airplane owner/pilot operated the airplane. The airline transport certificated pilot and the sole passenger were seriously injured. Visual meteorological conditions prevailed at the time of the accident, and no flight plan was filed. The flight originated about 1825, and was en route to an undisclosed remote location.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) on June 22, a witness reported that she first saw the accident airplane attempt a westerly departure from the seaplane base, but that departure was aborted when the airplane neared the west shoreline of the lake. The airplane then taxied to the north end of the lake, and started a south-southeasterly takeoff run. She said that the airplane appeared to be "slow in getting up on the step" as it passed by her location on the west shoreline. She said that as the airplane continued its takeoff run towards the south, it "staggered into the air near the south end of the lake, then turned east, away from an area of slight rising terrain, and downwind." The nose of the airplane then pitched sharply to the right, then to the left, and descended nose first behind several trees.

The accident pilot provided a written statement included within his NTSB Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1/2). The pilot wrote, in part: "After liftoff, began a slight turn to the east to avoid the rising terrain and encountered a decreasing windshear. The aircraft stalled, and without enough altitude to recover, crashed at a point between the waterline and the trees." The pilot also noted that there were no preaccident mechanical anomalies with the accident airplane.

Additionally, in the section of the NTSB Pilot/Operator Aircraft Accident Report provided for recommendations on how the accident might have been prevented, the pilot wrote, in part: "With slightly higher density altitude and winds gusting over the hills, the flight could have been delayed until the temperature cooled, and the winds stabilized to avoid any windshear.

The closest weather observation station is at the Bettles Airport, about 2 miles northwest of the accident site. On June 21, at 1905, an Aviation Routine Weather Report (METAR) was reporting in part: Sky conditions and ceiling, 6,500 scattered, 9,500 scattered, 20,000 scattered; visibility, 10 statute miles; wind, 230 degrees (true) at 8 knots, with gusts to 14 knots.

A Federal Aviation Administration (FAA) airworthiness inspector, Fairbanks Flight Standards

District Office, examined the airplane at the accident scene on June 22. He reported the airplane came to rest vertically, nose down in soft, marsh-covered swampy terrain. The engine cowling, fuselage firewall, and the instrument panel were crushed and displaced aft. The main/cockpit cabin area of the fuselage was extensively crushed and distorted. The primary crush zones extended from the firewall area back to about the forward doorpost, and encompassed the pilot and front seat passenger area. The wing fuel tanks were breached from impact damage. The propeller blades sustained slight aft curling.

In the pilot's written statement to the NTSB he credited his survival, as well as his passenger's survival, to a recently installed BAS, Inc., four-point shoulder harness and lap belt restraint system. He wrote, in part: "The BAS seat and shoulder harness [system] installed saved our lives, and we escaped without any internal injuries."

The airplane was retrieved from the accident site and transported to Wasilla, Alaska.

On July 18, 2006, an engine tear down and inspection was conducted under the direction of the NTSB IIC, at Alaskan Aircraft Engines, Inc., Anchorage, Alaska. Also present at the engine tear down and inspection was an aviation safety inspector from the FAA's Fairbanks Flight Standards District Office, along with representatives from Teledyne Continental Motors. No preimpact mechanical anomalies were noted during the examination of the engine or engine accessories.

Pilot Information

Certificate:	Airline transport; Flight engineer; Flight instructor	**Age:**	47,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):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	August 1, 2004
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	October 1, 2004
Flight Time:	6500 hours (Total, all aircraft), 270 hours (Total, this make and model), 3700 hours (Pilot In Command, all aircraft), 14 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N94204
Model/Series:	185F	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	18503289
Landing Gear Type:	Float	**Seats:**	4
Date/Type of Last Inspection:	April 1, 2006 Annual	**Certified Max Gross Wt.:**	3350 lbs
Time Since Last Inspection:	20 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	6757.3 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-520
Registered Owner:	James C. & Anita L. McMillin	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PABT,631 ft msl	**Distance from Accident Site:**	2 Nautical Miles
Observation Time:	19:05 Local	**Direction from Accident Site:**	355°
Lowest Cloud Condition:	Scattered / 6500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots / 14 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	21°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Bettles, AK (2A4)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	18:25 Local	**Type of Airspace:**	

Airport Information

Airport:	VOR Lake Waterlane Seaplane 2A4	**Runway Surface Type:**	
Airport Elevation:	631 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	66.889167,-151.484725

Administrative Information

Investigator In Charge (IIC):	Johnson, Clinton
Additional Participating Persons:	Kenneth C Thomas; Federal Aviation Administration; Fairbanks, AK
Original Publish Date:	April 25, 2007
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=63958