Aviation Investigation Final Report

Location:	English Bay, Alaska	**Accident Number:**	ANC03FA075
Date & Time:	July 11, 2003, 11:05 Local	**Registration:**	N505SD
Aircraft:	Cessna 206	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The solo certificated commercial pilot of the Title 14, CFR 135, cargo flight was attempting to land the airplane on a 1,850 foot long by 50 foot wide gravel-covered airstrip. Several witnesses reported gusty east-southeast winds, ranging between 25 and 40 knots, blowing directly across the runway. They reported that as the airplane proceeded on its final approach to runway 19, which required a correction for a left crosswind, the airplane "floated down the runway" after passing over the runway threshold, and eventually touched down about mid-field. As it touched down, the airplane bounced twice, which was immediately followed by the sound of full engine power. As it began to climb, the airplane made a sharp right turn to the west, to avoid terrain at the end of the runway. As the westerly turn continued, the airplane climbed to about 150 feet, over the ocean waters to the south of the airport. The witnesses said that the nose of the airplane then pitched up, and the left wing suddenly dropped. The airplane subsequently descended, struck the surface of the ocean, and sank in 30 feet of water about 200 yards from shore. Examination of the airplane revealed no evidence of any preimpact mechanical anomalies. Pilots who regularly use the accident airport stated that they routinely encounter substantial downdrafts on final approach to runway 19 when the prevailing strong east-southeast winds are present. The pilots added that when the east-southeasterly winds are blowing, the approach requires a significant correction for a left crosswind. A pilot who had recently departed from the accident airport, talked with the accident pilot via radio about 45 minutes before the accident. The pilot told the accident pilot, in part: "Be careful. You've got the typical strong southeast winds blowing right across the runway."

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 an aborted landing, resulting in an inadvertent stall and subsequent collision with water. Factors were the high velocity crosswind conditions, the pilot's inadequate compensation for the wind conditions, and his delay in aborting the landing.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: LANDING - ABORTED

Findings
1. (F) ABORTED LANDING - DELAYED - PILOT IN COMMAND
2. (F) COMPENSATION FOR WIND CONDITIONS - INADEQUATE - PILOT IN COMMAND
3. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
4. STALL - INADVERTENT - PILOT IN COMMAND
5. (F) WEATHER CONDITION - HIGH WIND
6. (F) WEATHER CONDITION - CROSSWIND

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

Findings
7. TERRAIN CONDITION - WATER

Factual Information

HISTORY OF FLIGHT

On July 11, 2003, about 1105 Alaska daylight time, a wheel-equipped Cessna 206 airplane, N505SD, was destroyed when it impacted ocean waters following a loss of control during an aborted landing at the English Bay Airport, English Bay, Alaska. The airplane was operated by Smokey Bay Air, Inc., Homer, Alaska, as a visual flight rules (VFR) cross-country cargo flight under Title 14, CFR Part 135, when the accident occurred. The solo commercial pilot was fatally injured. Visual meteorological conditions prevailed, and a company VFR flight plan was filed. The flight originated at the Homer Airport, Homer, about 1015.

During telephone conversations with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) on July 11, a number of English Bay residents reported that on the day of the accident, strong southeasterly to easterly winds prevailed. A number of witnesses reported gusty wind conditions, estimated to be between 25 and 35 knots, blowing directly across runway 19.

The accident was witnessed by several individuals located at various locations around the community of English Bay. The witnesses consistently reported that as the airplane proceeded on its final approach to runway 19, which required a correction for a left crosswind, the airplane "floated down the runway" after passing over the runway threshold. The witnesses said that the airplane eventually touched down about mid-field on the 1,850-foot long by 50-foot wide gravel-covered runway. The witnesses added that as it touched down, the airplane bounced twice, which was immediately followed by the sound of full engine power. As it began to climb, the airplane made a sharp right turn to the west to avoid terrain at the end of the runway. As the westerly turn continued, the airplane climbed to about 150 feet, over the ocean waters of Cook Inlet. The witnesses said that the nose of the airplane then pitched up, and the left wing suddenly dropped. The airplane subsequently descended, struck the surface of the ocean, and sank in 30 feet of water, about 200 yards from shore.

The witnesses consistently reported that the accident airplane's engine appeared to be producing full power prior to striking the water.

Responding search and rescue personnel from the Alaska State Trooper's Tactical Dive Unit (TDU), U.S. Coast Guard, and various residents of English Bay, conducted an extensive search for survivors. At approximately 1315, divers located the submerged airplane wreckage, and discovered the pilot's body inside, still restrained within the pilot's seat.

CREW INFORMATION

The pilot held a commercial pilot certificate with airplane single-engine land, and single-engine sea ratings. He also held a flight instructor certificate with airplane single-engine, and instrument airplane ratings. The most recent second-class medical certificate was issued to the pilot on May 5, 2003, and contained the limitation that he must wear corrective lenses.

The pilot was hired by the company on July 1, 2002. On July 10, 2002, the pilot completed his initial Part 135 check ride.

According to the NTSB Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1) submitted by the operator, the pilot's total aeronautical experience consisted of about 3,203 hours, of which 1,185 were accrued in the accident airplane make and model. In the 90 and 30 days prior to the accident, the pilot had flown a total of 146 and 46 hours, respectively.

According to the operator, in the two days preceding the accident, the pilot accrued 10.7 hours of flight time.

AIRCRAFT INFORMATION

The airplane had accumulated a total time in service of 11,628.0 hours. The airplane's most recent 100 hour inspection was accomplished on June 17, 2003, 80.0 hours before the accident.

The engine had accrued a total time in service of 2,818.0 hours. The maintenance records note that a major overhaul was accomplished 1,641 hours before the accident.

METEOROLOGICAL INFORMATION

The closest official weather observation station is Homer, located about 26 miles northeast of the accident site. On July 11, 2003, at 1053, an Aviation Routine Weather Report (METAR) was reporting in part: Wind, variable at 5 knots; visibility, 10 statute miles; clouds, 1,100 feet overcast; temperature, 61 degrees F; dew point, 48 degrees F; altimeter, 29.93 inHg. The remarks section of the report noted that winds in the area of the Homer Spit were from 140 degrees at 15 knots, with peak gusts to 22 knots. The Homer Spit is a narrow peninsula of land that extends about 5 miles southward, into the ocean waters of Kachemak Bay.

Witnesses located at the accident site consistently reported strong southeasterly gusting winds. One witness, in a boat located about one-half mile from the accident site, reported that just before the accident took place, his boat encountered very strong east-southeasterly winds, with peak gusts from 35 to 40 knots.

COMMUNICATIONS

During a telephone conversation with the NTSB IIC on July 14, a pilot, reported that he talked with the accident pilot via radio about 45 minutes before the accident. The pilot, who was

flying another Smokey Bay Air Cessna 206, which had recently departed from the English Bay Airport, related that the accident pilot inquired as to the current weather conditions, specifically the wind conditions, at the English Bay Airport. The pilot of the other company airplane said that he told the accident pilot, in part: "Be careful. You've got the typical strong southeast winds blowing right across the runway."

AERODROME AND GROUND FACILITIES

The English Bay Airstrip is equipped with a single, gravel-covered surface on a 010 and 190 degree magnetic orientation. The airstrip is 1,850 feet long by 50 feet wide. The airstrip elevation is sea level, adjacent to the ocean waters of Cook Inlet. The airstrip is surrounded by upsloping mountainous terrain to the north, east, and south. The village of English Bay is built on the northerly slopes, overlooking the airstrip. The waters of Cook Inlet surround the west side of the airstrip. English Bay is often frequented by southeasterly onshore storms with associated strong east-southeasterly winds. A significant number of the storms originate in the Gulf of Alaska, then move southwesterly towards the Cook Inlet.

During telephone conversations with the NTSB IIC, pilots who regularly fly into English Bay reported that while on approach for a landing on runway 19, while flying over the village of English Bay, flights routinely encounter substantial downdrafts when strong, east-southeast winds are present. The pilots added that when east-southeasterly winds are blowing, the approach to runway 19 requires a significant correction for a left crosswind.

The Federal Aviation Administration's Airport/Facility Directory, Alaska Supplement, airport remarks for the English Bay Airstrip, state, in part: "Airport remarks, Unattended. Runway not regularly maintained; visually inspect runway for conditions prior to use." "...Runway 19 approach restricted by village on hillside. Runway 01 approach restricted by abrupt mountain face .21 nautical miles off runway end."

WRECKAGE AND IMPACT INFORMATION

The airplane's wreckage sank in 30 feet of water about 200 yards from shore. Responding members from the Alaska State Trooper's Tactical Dive Unit reported to the NTSB IIC that when the submerged wreckage was located, they noted that the engine assembly had been torn from the airplane's firewall, the left wing was severely damaged, and the entire empennage was separated from the fuselage at the forward vertical stabilizer attach point. They said that the airplane's empennage was only being held by the control cables. The airplane's right wing remained attached. The engine was eventually located within close proximity to the submerged airplane wreckage.

The airplane's wreckage was retrieved from the waters of Cook Inlet late in the day on July 11, and was pulled onto an adjacent beach. On July 15, the engine assembly was located by salvage divers and returned to the beach. On July 21, the airplane and engine were retrieved from English Bay and transported to Homer by barge. The wreckage was then transported to

the operator's facility in Homer, and placed in an outdoor storage area.

The NTSB IIC examined the airplane wreckage at the operator's facility in Homer on July 23, 2003. The operator reported that during recovery efforts, the left wing was removed to aid in loading the airplane on the barge. All of the airplane's major components were found at the main wreckage storage area.

The outboard half of the left wing had significant spanwise leading edge aft hydraulic crushing, with more crushing evident along the outboard portion of the leading edge. The left wing lift strut was attached to the wing, but was separated from its fuselage attach point.

The outboard half of the right wing had spanwise leading edge aft hydraulic crushing, with more crushing evident along the outboard portion of the leading edge. The right wing lift strut remained attached to the wing and its fuselage attach point.

All flight control surfaces remained connected to their respective attach points. Due to impact damage and disassembly, the flight controls could not be moved by their respective control mechanisms, but the continuity of the flight control cables was established to the cabin/cockpit area.

The flap jackscrew was not extended.

Due to the extended time that the engine assembly was submerged in saltwater, and the advanced stages of salt water corrosion of the engine and engine accessories, hand rotation of the engine crankshaft was not possible.

The propeller remained attached to the engine crankshaft. All three blades were loose in the hub. The first propeller blade exhibited about 70 degree aft bending about 8 inches outboard from the hub, and slight torsional twisting. The second propeller blade exhibited about 20 degree aft bending about 14 inches outboard from the hub, and substantial torsional twisting. The third propeller blade exhibited about 30 degree aft bending about 12 inches outboard from the hub, with substantial torsional twisting.

According to the NTSB Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1) submitted by the operator, the airplane had 468 pounds of mail/cargo aboard at the time of the accident. The cargo had been removed prior to the NTSB's wreckage examination in Homer.

There were no preaccident engine or airframe anomalies noted during the wreckage examination.

MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination of the pilot was conducted under the authority of the Alaska State Medical Examiner, 4500 South Boniface Parkway, Anchorage, Alaska, on July 14, 2003. The

examination revealed that the cause of death was salt water drowning.

A toxicological examination conducted by the FAA's Civil Aero Medical Institute (CAMI) on October 30, 2003, was negative for alcohol or drugs.

ADDITIONAL DATA / INFORMATION

The Safety Board did not take custody of the wreckage, and no parts or components were retained.

Pilot Information

Certificate:	Commercial	**Age:**	49,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	May 5, 2003
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	July 10, 2002
Flight Time:	3203 hours (Total, all aircraft), 1185 hours (Total, this make and model), 146 hours (Last 90 days, all aircraft), 46 hours (Last 30 days, all aircraft), 11 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N505SD
Model/Series:	206	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	2060947
Landing Gear Type:	Tricycle	**Seats:**	6
Date/Type of Last Inspection:	June 17, 2003 100 hour	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	80 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	11628 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-520
Registered Owner:	Smokey Bay Air, Inc.	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:		**Operator Designator Code:**	X53A

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Overcast / 8000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	20 knots / 40 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	120°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.94 inches Hg	**Temperature/Dew Point:**	15°C / 10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Homer , AK (HOM)	**Type of Flight Plan Filed:**	Company VFR
Destination:	English Bay , AK (KEB)	**Type of Clearance:**	None
Departure Time:	10:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	English Bay KEB	**Runway Surface Type:**	Gravel
Airport Elevation:	0 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	19	**IFR Approach:**	None
Runway Length/Width:	1850 ft / 50 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	59.35361,-151.930831

Administrative Information

Investigator In Charge (IIC):	Johnson, Clinton
Additional Participating Persons:	John P Jones; Federal Aviation Administration; Anchorage, AK
Original Publish Date:	March 30, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=57482