



National Transportation Safety Board Aviation Accident Final Report

Location:	SKWENTNA, AK	Accident Number:	ANC95LA126
Date & Time:	08/02/1995, 0910 AKD	Registration:	N4596U
Aircraft:	CESSNA 206G	Aircraft Damage:	Substantial
Defining Event:		Injuries:	4 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

THE PILOT AND THREE PASSENGERS WERE DEPARTING A REMOTE LAKE IN A FLOAT EQUIPPED AIRPLANE ON THE RETURN PORTION OF AN ON-DEMAND CHARTER FLIGHT. THE PILOT PERFORMED A HIGH SPEED STEP TAXI AT THE NORTHWEST PORTION OF THE LAKE, WHICH INCLUDED ABOUT 225 DEGREES OF TURN TO THE LEFT. AT THE COMPLETION OF THE TURN, THE PILOT CONTINUED WITH THE TAKEOFF RUN ON AN EASTERLY HEADING. THE RIGHT FUEL TANK HAD BEEN SELECTED FOR TAKEOFF, AND IT CONTAINED ABOUT 15 GALLONS OF FUEL. ABOUT 45 SECONDS AFTER TAKEOFF, THE ENGINE QUIT, AND THE PILOT PERFORMED AN EMERGENCY LANDING IN AN ADJACENT CREEK. DURING THE LANDING, THE AIRPLANE STRUCK A GRAVEL BAR AND NOSED OVER. A POST-ACCIDENT EXAMINATION OF THE AIRPLANE DID NOT DISCLOSE ANY MALFUNCTION. THE ENGINE WAS STARTED AND DEVELOPED FULL POWER. ACCORDING TO THE PILOT'S OPERATING HANDBOOK, PROLONGED UNCOORDINATED FLIGHT SUCH AS SLIPS OR SKIDS WITH LOW FUEL RESERVES COULD UNCOVER THE FUEL TANK OUTLETS, CAUSING FUEL STARVATION AND ENGINE STOPPAGE. THE STEP TAXI TURN WAS A (PROLONGED) WINGS LEVEL TURN.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S IMPROPER HANDLING OF THE AIRCRAFT (PROLONGED YAWING MANEUVER DURING STEP TAXI TURN), WHICH RESULTED IN UNCOVERING OF THE FUEL TANK OUTLETS AND SUBSEQUENT FUEL STARVATION DURING TAKEOFF.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (C) AIRCRAFT HANDLING - IMPROPER - PILOT IN COMMAND
2. (C) FLUID,FUEL - STARVATION

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings

3. TERRAIN CONDITION - WATER
4. TERRAIN CONDITION - SAND BAR

Occurrence #4: NOSE OVER
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Factual Information

On August 2, 1995, about 0910 Alaska daylight time, a float equipped Cessna 206G, N4596U, crashed after takeoff from a remote lake, about 9 miles east of Skwentna, Alaska. The airplane was being operated as a visual flight rules (VFR) cross-country on-demand charter flight to Anchorage, Alaska, under Title 14 CFR Part 135 when the accident occurred. The airplane, operated by Rust's Flying Service Inc., Anchorage, Alaska, received substantial damage. The certificated commercial pilot and 3 passengers were not injured. Visual meteorological conditions prevailed. Company VFR flight following procedures were in effect. The flight originated at the Lake Hood Seaplane base, Anchorage, about 0745.

The operator reported that the pilot departed Lake Hood with 17 gallons of fuel in each wing fuel tank. He dropped a passenger at a nearby river and then landed at Bulchitna Lake to drop the remaining two passengers. The pilot then loaded three new passengers and their gear for a return flight to Lake Hood. The pilot began a step taxi toward the northwest portion of the lake. The fuel selector was positioned on the right fuel tank that contained about 15 gallons. The left fuel tank gauge indicated that it held 10 gallons. The pilot performed about a 225 degree turn to the left while on the step and began the departure toward the west.

About 45 seconds after the airplane became airborne and about 150 feet above the ground, the engine suddenly quit. The pilot lowered the nose of the airplane, moved the fuel selector to the left fuel tank, and selected a forced landing area in Lake Creek which is adjacent to the lake. The airplane touched down on the water and the floats struck a gravel/sandbar and logs in the creek and then nosed over. The pilot indicated that the engine boost pump switch was "OFF" and he did not remove his hand from the control yoke to activate the switch during the emergency.

After the airplane was recovered, an inspection of the engine and airframe was conducted on August 11, 1995, at Alaska Aircraft Sales, Anchorage, Alaska. The fuel selector was positioned on the left tank. Both wings containing the fuel tanks were removed from the airframe during the recovery of the airplane. Small flakes of grey colored tank sealant material were noted around the forward and aft fuel supply line screens in the left wing fuel tank, but were not blocking the screens. The right wing fuel tank contained similar flakes of tank sealant material. No fuel supply line screens were installed on the forward or aft fuel lines in the right fuel tank.

The right reservoir tank was drained into a bucket. It contained blue colored fuel, a small amount of sediment, and a slight amount of water. Draining of the left reservoir tank produced similar results. The right reservoir tank drain was removed and air pressure was applied to the right wing tank fuel supply line at the airframe fitting. A small amount of sediment and small flakes of sealant material were collected. Removal of the left reservoir tank drain and application of air pressure produced a larger amount of sediment. Examination of the fuel strainer bowl and screen revealed no contamination. The fuel control inlet screen contained a slight amount of lint material but was otherwise clear. The fuel manifold screen was free of contaminants.

Examination of the engine revealed that upon hand rotation, it exhibited gear and valve train continuity, thumb compression, and produced spark at each spark plug. Activation of the fuel boost pump produced fuel pressure.

Fuel was added to the right wing fuel line and a small external fuel can was attached at the

same point. The fuel selector was positioned on the right tank and the engine was started. The engine operated from engine idle to full power. A magneto check produced a drop of 75 RPM on each magneto. The engine continued to operate with and without the boost pump operating.

The airplane pilot's operating handbook, Section 7, Airplane and Systems Description, Fuel System, contains a note that states:... "Unusable fuel is at a minimum due to the design of the fuel system. However, with 1/4 tank or less, prolonged uncoordinated flight such as slips or skids can uncover the fuel tank outlets, causing fuel starvation and engine stoppage. Therefore, with low fuel reserves, do not allow the airplane to remain in uncoordinated flight for periods in excess of one minute."

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	53, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
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 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	09/26/1994
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	9120 hours (Total, all aircraft), 2950 hours (Total, this make and model), 9020 hours (Pilot In Command, all aircraft), 220 hours (Last 90 days, all aircraft), 115 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N4596U
Model/Series:	206G 206G	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	U20604990
Landing Gear Type:	Float	Seats:	6
Date/Type of Last Inspection:	07/21/1995, 100 Hour	Certified Max Gross Wt.:	3600 lbs
Time Since Last Inspection:	36 Hours	Engines:	1 Reciprocating
Airframe Total Time:	8057 Hours	Engine Manufacturer:	CONTINENTAL
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-520F
Registered Owner:	RUSTAIR INC.	Rated Power:	300 hp
Operator:	RUST'S FLYING SERVICE	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	ERHA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0000	Direction from Accident Site:	0°
Lowest Cloud Condition:	Scattered / 600 ft agl	Visibility	20 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	14° C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	Company VFR
Destination:	ANCHORAGE, AK (LHD)	Type of Clearance:	None
Departure Time:	0910 ADT	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	3 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC): SCOTT R ERICKSON **Report Date:** 02/14/1996

Additional Participating Persons: TERRY BATEMAN; ANCHORAGE, AK
CLINT SWANSON; ANCHORAGE, AK

Publish Date:

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).