



Aviation Investigation Factual Report

Location:	KELLY RIVER BAR, Alaska	Accident Number:	ANC93LA121
Date & Time:	July 19, 1993, 14:45 Local	Registration:	N756AH
Aircraft:	CESSNA 206G	Aircraft Damage:	Substantial
Defining Event:		Injuries:	5 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Factual Information

HISTORY OF FLIGHT

On July 19, at approximately 1445 Alaska daylight time, a wheel equipped Cessna 206U airplane, N756AH, failed in a takeoff attempt from a gravel river bar, impacted in the water and overturned. The airplane, on a VFR flight plan, was operated by Northwestern Aviation of Kotzebue, Alaska, under 14 CFR Part 135, as an on-demand air carrier. The location of the accident was on the Noatak River, approximately 62 miles north of Kotzebue. Visual meteorological conditions existed. The airline transport rated pilot and four passengers were not injured and the airplane sustained substantial damage.

The pilot told investigators that he had not landed on that part of Kelly Bar previously. After landing, he loaded four sportsmen clients and their equipment. He estimated the takeoff distance to be 750 feet; stating that he had "enough distance to takeoff." The pilot recalled back-taxiing to utilize all of the available run. In a statement provided to the NTSB, he said that he applied full power, with a flap setting of twenty degrees and released the brakes. The pilot also recalled the airplane to have become airborne momentarily and then settle, the main wheels hitting the water of the Noatak River. Upon impact, the aircraft nosed over, shearing the nose gear, propeller, and bending the left wing aft.

The length of that river bar is not shown on maps and investigators could not verify that 750 feet existed at that location.

In a telephone interview, the pilot told investigators, "there was no engine problem, I guess I didn't have enough airspeed." He was asked if the stall warning horn had alerted him to a pending stall, he replied, "this airplane has a wing tank mod, the stall warning horn is always on, on takeoff."

AIRCRAFT INFORMATION

The exact weight of the aircraft at the time of the accident was not available. The pilot did not compute a weight and balance and the weights of passengers and equipment were estimated. A takeoff gross weight of the airplane was estimated to be between 3200 and 3400 pounds.

Short field takeoff data for a 3300 pound aircraft at 15 degrees (C) was used by investigators as computation for performance. The "Short Field" data for a 3300 pound aircraft indicates that a ground run of approximately 740 feet would be required to become airborne from a smooth paved surface. Allowance for degradation of takeoff run is not shown for a gravel or rocky surface. The performance data on the charts has a footnote stating that takeoff ground roll on a dry grass surface must be increased by 15 percent.

Degradation of takeoff performance for a rocky or gravel surface was not estimated by investigators. No rough surface takeoff performance charts or documented flight tests for these conditions were found.

METEOROLOGICAL INFORMATION

The pilot stated that he had excellent visibility and light and variable winds. He recalled the temperature as being in the 50's. The nearest weather facility was a Kotzebue, approximately 75 miles to the south. An observation taken there at 1350 local is entered for information in the accident data for this report. Visual meteorological conditions existed at both locations.

ADDITIONAL INFORMATION

The airplane was equipped with Flint Aero extended wing tip fuel tanks, adding approximately 36 inches of effective wing span to the airplane. The Supplemental Type Certificate (STC SA4366WE) information provided with the modification, as an operational supplement, stated that the wing tip tanks increased the maximum gross weight of the airplane to 3800 (originally 3600). No information was provided regarding possible changes to stall speed, takeoff performance or climb performance. The STC was approved by the Supervisor, Flight Section, FAA Western Aircraft Certification Office, NW Mountain Region.

The STC certification data for the modification revealed that while the approval was issued by the FAA Flight Section, no actual flight performance tests were recorded. No information was recorded regarding possible changes to stall performance or required changes to original position or calibration of the stall warning sensor.

Investigators interviewed pilots of U206 airplanes from other companies that fly the Cessna 206 with the same wing tip tank modification. These pilots also reported that the stall warning horn is regularly heard during normal takeoff runs.

The NTSB contacted the manufacturer of the wing tip tank modification, who reported that they had no empirical or claimed data regarding performance with the STC. The manufacturer also stated that the extended center of gravity envelope (increasing the maximum gross takeoff weight to 3800 pounds) was provided by the Los Angeles office of FAA Certification.

The FAA Certification Office, Anchorage, Alaska, told the NTSB that the Los Angeles Certification Branch had "drawn the envelope larger for the STC holder and issued the CG information in March of 1993."

In a letter to the NTSB, the FAA Anchorage Certification Office also stated, in part, "Rotating to the range of pitch-up angles typically used for takeoff could then cause a U206G airplane modified in accordance with STC No. SA4366WE to experience an aural stall warning activation that an unmodified airplane would not experience."

Pilot Information

Certificate:	Airline transport	Age:	31, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Helicopter; Instrument helicopter	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical—no waivers/lim.	Last FAA Medical Exam:	May 14, 1993
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	3627 hours (Total, all aircraft), 208 hours (Total, this make and model), 3472 hours (Pilot In Command, all aircraft), 208 hours (Last 90 days, all aircraft), 147 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N756AH
Model/Series:	206G 206G	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	U20603932
Landing Gear Type:	Tricycle	Seats:	6
Date/Type of Last Inspection:	June 29, 1993 100 hour	Certified Max Gross Wt.:	3600 lbs
Time Since Last Inspection:	57 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	5879 Hrs	Engine Manufacturer:	CONTINENTAL
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-520-F9
Registered Owner:	NORTHWESTERN AVIATION	Rated Power:	300 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:	NORTHWESTERN AVIATION	Operator Designator Code:	FWHC

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	OTZ ,10 ft msl	Distance from Accident Site:	75 Nautical Miles
Observation Time:	13:50 Local	Direction from Accident Site:	170°
Lowest Cloud Condition:	Scattered / 6500 ft AGL	Visibility	25 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/ None	Turbulence Type Forecast/Actual:	/
Wind Direction:	310°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	13°C / 13°C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	VFR
Destination:	KOTZEBUE (OTZ)	Type of Clearance:	VFR;IFR;Traffic advisory
Departure Time:	00:00 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	4 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	5 None	Latitude, Longitude:	67.240341,-161.190277(est)

Administrative Information

Investigator In Charge (IIC):	Herlihy, Douglas
Additional Participating Persons:	DENNIS D DELO; FAIRBANKS , AK
Report Date:	June 30, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=2383

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).