



Aviation Investigation Final Report

Location:	Pilot Point, Alaska	Accident Number:	ANC05LA142
Date & Time:	September 9, 2005, 19:30 Local	Registration:	N1592F
Aircraft:	Cessna 185E	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airline transport certificated pilot was conducting a personal cross-country flight. He said during landing at a sod covered, off airport site, the left main landing gear collapsed. Upon inspection, he discovered that the left main landing gear strut attachment bolt had broken. He reported that a witness told him he initially bounced 12-18 inches on landing before settling onto the landing area a second time. The pilot said there were no known mechanical anomalies with the airplane prior to the accident. The airplane sustained structural damage to the gear box, left wing, aileron, and horizontal stabilizer. An examination of the landing gear attachment bolt, and new, exemplar bolts, by a metallurgist at the NTSB materials laboratory in Washington, D.C., revealed that the bolt had broken in a "ductile overstress separation in bending and shear mode." The laboratory report notes that the bolt was made of the appropriate material, and was of the proper dimensions.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's misjudged landing flare, which resulted in a hard landing and an overload failure of the main landing gear during the landing touchdown.

Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

1. (C) FLARE - MISJUDGED - PILOT IN COMMAND

Occurrence #2: GEAR COLLAPSED

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

2. (C) LANDING GEAR,MAIN GEAR ATTACHMENT - OVERLOAD

3. LANDING GEAR,MAIN GEAR - SEPARATION

Factual Information

On September 9, 2005, about 1930 Alaska daylight time, a Cessna 185E airplane, N1592F, sustained substantial damage when the left main landing gear collapsed during an off airport landing, about 30 miles southeast of Pilot Point, Alaska. The airplane was being operated by the pilot as a visual flight rules (VFR) personal cross-country flight under Title 14, CFR Part 91, when the accident occurred. The solo private pilot was not injured. Visual meteorological conditions prevailed, and no flight plan was filed. The flight originated at the Pilot Point Airport, Pilot Point, about 1900.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) on September 10, the pilot said during landing at a sod covered, off airport site, the left main landing gear collapsed. The airplane sustained structural damage to the gear box, left wing, aileron, and horizontal stabilizer. The pilot said that upon examination of the main landing gear strut, he found the main landing gear attachment bolt had broken. He said there were no known mechanical anomalies with the airplane prior to the accident.

In a written statement to the NTSB dated October 10, the pilot wrote that a by-stander told him that upon initial contact during landing, the airplane bounced 12-18 inches off the ground before settling onto the runway area a second time.

The broken bolt, along with new, exemplar bolts, from the same production lot, were sent to the NTSB materials laboratory in Washington, D.C., for examination. The examination revealed that the landing gear retention bolt had broken in a "ductile overstress separation in bending and shear mode." The examining metallurgist concluded the bolt was made of the appropriate material, and was of the proper dimensions.

Pilot Information

Certificate:	Airline transport	Age:	51, 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 With waivers/limitations	Last FAA Medical Exam:	August 1, 2005
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	August 1, 2005
Flight Time:	6800 hours (Total, all aircraft), 3500 hours (Total, this make and model), 6700 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N1592F
Model/Series:	185E	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	0974
Landing Gear Type:	Tailwheel	Seats:	6
Date/Type of Last Inspection:	May 1, 2005 Annual	Certified Max Gross Wt.:	3300 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	4050 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	IO-520
Registered Owner:	Frederick Reynolds	Rated Power:	300 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Dawn
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 5000 ft AGL	Visibility	24 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	10 knots / 15 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	90°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	7°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Pilot Point, AK (PNP)	Type of Flight Plan Filed:	None
Destination:	Pilot Point, AK	Type of Clearance:	None
Departure Time:	19:00 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	57.210094,-153.320251(est)

Administrative Information

Investigator In Charge (IIC):	Lewis, Lawrence
Additional Participating Persons:	Jack Devlin; Anchorage FSDO-03; Anchorage, AK
Original Publish Date:	June 28, 2006
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=62462

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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](#).