



Aviation Investigation Final Report

Location:	LUFKIN, Texas	Accident Number:	FTW99LA145
Date & Time:	May 21, 1999, 14:00 Local	Registration:	N5500C
Aircraft:	Bellanca 8KCAB	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The left main landing gear separated from the airframe following a normal wheel landing on runway 15. The separation resulted from failure of the 'U-bolt' attaching the left main landing gear to the fuselage. The left wing contacted the ground and the airplane came to rest on the west side of the 4,550 foot runway. A review of the maintenance history of the airplane revealed that the airframe had accumulated a total time of 708 hours. The failed landing gear U-bolt, part number 1-9805, was shipped to the NTSB Materials Laboratories in Washington, D.C., for metallurgical evaluation. The metallurgical evaluation revealed that the bolt failed as a result of fatigue.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of control due to the separation of the left main landing gear as a result of the fatigue failure of the U-bolt which attaches the landing gear to the airframe.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: LANDING - ROLL

Findings

1. (C) LANDING GEAR,MAIN GEAR ATTACHMENT - FATIGUE
2. (C) LANDING GEAR,MAIN GEAR - SEPARATION

Occurrence #2: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING - ROLL

Findings

3. AIRCRAFT CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Factual Information

On May 21, 1999, at 1400 central daylight time, a Bellanca 8KCAB tailwheel equipped airplane, N5500C, was substantially damaged following a loss of directional control while landing near Lufkin, Texas. The flight instructor and the instrument rated private pilot receiving instruction were not injured. The airplane was owned and operated by Nacogdoches Taildraggers, Inc., of Nacogdoches, Texas. Visual meteorological conditions prevailed for the Title 14 CFR Part 91 flight for which a flight plan was not filed. The local instructional flight originated from the A.L. Mangham, Jr. Regional Airport (OCH), near Nacogdoches, Texas, at approximately 1330.

According to the FAA inspector who responded to the accident site, the flight arrived at the Angelina County Airport (LFK), located near Lufkin, Texas, to practice takeoffs and landings. The flight instructor reported that following their second practice landing, a normal wheel landing on runway 15, the "U-bolt" attaching the left main landing gear to the fuselage failed, resulting in the separation of the left main landing gear. The left wing contacted the ground and the airplane came to rest on the west side of the 4,550 foot runway.

Examination of the 1978 model aircraft revealed structural damage to the left wing and the left main landing gear attaching point. Additionally, one propeller blade was bent and the underside of the airframe was damaged. A review of the maintenance history of the airplane by the FAA inspector revealed that the airframe had accumulated a total time of 708 hours.

The failed landing gear U-bolt, Bellanca part number 1-9805, was shipped to the NTSB Materials Laboratories in Washington, D.C., for examination and evaluation. The metallurgical examination revealed that the bolt fractured as a result of fatigue. See enclosed report for details of the examination.

The surface winds at the time of the occurrence were reported from 200 degrees at 5 knots.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	78, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
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:	March 10, 1999
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	7578 hours (Total, all aircraft), 12 hours (Total, this make and model), 7251 hours (Pilot In Command, all aircraft), 91 hours (Last 90 days, all aircraft), 32 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bellanca	Registration:	N5500C
Model/Series:	8KCAB 8KCAB	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Aerobatic; Normal	Serial Number:	401-78
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	May 3, 1998 Annual	Certified Max Gross Wt.:	1800 lbs
Time Since Last Inspection:	106 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	708 Hrs	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	AEIO-320-E2B
Registered Owner:	MICHAEL R. MCLEAN	Rated Power:	160 Horsepower
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:	NACOGDOCHES TAILDRAGGERS INC.	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	LFK ,296 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	13:50 Local	Direction from Accident Site:	270°
Lowest Cloud Condition:	Scattered / 3700 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	30°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	NACOGDOCHES , TX (OCH)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	13:30 Local	Type of Airspace:	Class G

Airport Information

Airport:	ANGELINA COUNTY AIRPORT LFK	Runway Surface Type:	Asphalt
Airport Elevation:	250 ft msl	Runway Surface Condition:	Dry
Runway Used:	15	IFR Approach:	
Runway Length/Width:	4515 ft / 100 ft	VFR Approach/Landing:	Touch and go

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	Casanova, Hector
Additional Participating Persons:	SUSAN GROFF; HOUSTON , TX
Original Publish Date:	August 3, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=46338

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).