



Aviation Investigation Final Report

Location:	Sioux Falls, South Dakota	Accident Number:	CEN12LA283
Date & Time:	April 24, 2012, 17:04 Local	Registration:	N8121R
Aircraft:	Beech 58	Aircraft Damage:	Substantial
Defining Event:	Landing gear not configured	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

The pilot stated that he was unable to fully retract the landing gear after takeoff and the landing gear position indicator transition light remained illuminated. He tried to manually extend the landing gear, but the crank arm was difficult to turn. Unable to fully extend or retract the landing gear, the pilot diverted to a nearby airport where he performed a landing with the gear partially extended, which resulted in substantial damage to the airplane. During the postaccident recovery and examination of the airplane, the landing gear was cycled repeatedly using the airplane's normal (electrical) landing gear system and operated normally. Although the manual landing gear extension handle was difficult to turn during postaccident testing, this would not explain why the gear would not retract. Postaccident examination of the landing gear system could not duplicate the condition that resulted in the partial gear-up landing.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the normal and emergency landing gear system to fully retract or extend the landing gear for reasons that could not be determined during postaccident examinations, which resulted in a partial gear-up landing.

Findings

Aircraft	Gear extension and retract sys - Failure
Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Initial climb	Sys/Comp malf/fail (non-power)
Initial climb	Landing gear not configured
Landing-flare/touchdown	Landing gear not configured (Defining event)
Landing-flare/touchdown	Collision with terr/obj (non-CFIT)

On April 24, 2012, about 1704 central daylight time, a Beech 58, N8121R, experienced a gear-up landing on runway 33 at Joe Foss Field Airport (FSD), Sioux Falls, South Dakota. The pilot was uninjured. The airplane sustained substantial damage to the fuselage. The airplane was registered to and operated by the pilot under the provision of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed at the time of the accident and a flight plan had not been filed for the local flight that departed from the Marv Skie-Lincoln County Airport (Y14), Tea, South Dakota.

The pilot stated that after takeoff from Y14 he was unable to fully retract the landing gear and the landing gear position indicator transition light remained illuminated. He reset the landing gear circuit breaker which was tripped but it tripped again. He tried to extend the landing gear using the manual extension, but the crank arm was stuck. Unable to extend the landing gear, the pilot performed a gear-up landing on runway 33 at FSD, which resulted in substantial damage to the fuselage.

According to an airframe and powerplant mechanic who recovered the airplane, the landing gear was extended to half of its travel. When airplane was raised for recovery, the landing gear retracted into the wheel wells using the airplane electrical system. A Federal Aviation Administration (FAA) inspector stated that during the recovery, the manual landing gear extension handle was difficult to turn.

Postaccident examination of the landing gear system revealed that the landing gear operated normally when actuated about 10 times. There was no obstruction in the landing gear transmission and operation of the landing gear electric motor did not reveal any unusual noises. The stop within the transmission did not provide an over center position, and the landing gear system rods were not deformed. The electric motor had a 1996 date stamp and there was no record that it had been overhauled or repaired.

Pilot Information

Certificate:	Commercial	Age:	53, 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:	
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	2500 hours (Total, all aircraft), 600 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N8121R
Model/Series:	58 NO SERIES	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	TH-690
Landing Gear Type:	Tricycle	Seats:	
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	9093 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:		Engine Model/Series:	I0540
Registered Owner:	Pilot	Rated Power:	
Operator:	Pilot	Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	LWAG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	FSD,1430 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	15:56 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Few / 10000 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	360°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.6 inches Hg	Temperature/Dew Point:	30°C / 5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tea, SD (Y14)	Type of Flight Plan Filed:	None
Destination:	Rapid City, SD (RAP)	Type of Clearance:	None
Departure Time:		Type of Airspace:	

Airport Information

Airport:	Joe Foss Field Airport FSD	Runway Surface Type:	Concrete
Airport Elevation:	1430 ft msl	Runway Surface Condition:	Dry
Runway Used:	33	IFR Approach:	None
Runway Length/Width:	8000 ft / 150 ft	VFR Approach/Landing:	Full stop

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:	43.581943,-96.741943(est)

Administrative Information

Investigator In Charge (IIC):	Gallo, Mitchell
Additional Participating Persons:	Mark Goodwin; Federal Aviation Administration; Rapid City, SD
Original Publish Date:	August 13, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=83584

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