Aviation Investigation Final Report

Location:	Kalispell, Montana	**Accident Number:**	SEA07TA174
Date & Time:	June 20, 2007, 09:30 Local	**Registration:**	N391M
Aircraft:	Cessna 185C	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Public aircraft		

Analysis

The pilot was practicing a simulated engine-out approach to an 1,800-foot-private grass airstrip, with the intention of executing a go-around once he reached 100 feet above ground level (agl). During the approach, the pilot maintained a manifold pressure of about 12 inches, so that the engine would still be producing a small amount of power, and the throttle would not be completely closed. When the airplane reached a height of about 100 feet above the ground, the pilot moved the throttle partially forward in order to execute a go-around, but the engine rpm did not increase. The pilot then pushed the throttle full forward, but the propeller continued to only windmill. By the time the pilot determined that the engine had lost all power, it was too late to put the airplane down on the grass strip. The pilot therefore elected to make an emergency landing in a field past the departure end of the grass strip. The field where the airplane touched down was rough and uneven, and covered with high vegetation. About 15 feet beyond where the main landing gear came in contact with the terrain, the structure inside the right main landing gear attachment box failed, and the right main landing gear leg collapsed. When the right main gear leg collapsed, the right wing came in contact with the terrain. During a post-accident inspection of the airplane and engine, no anomalies could be found that would have lead to a loss of power. After the inspection, the Continental Motors IO-0470-F engine was started and run without any malfunction detected.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The complete loss of engine power during an attempted go-around from a simulated engine-out landing. Factors include rough/uneven terrain and high vegetation where the pilot made an emergency forced landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: GO-AROUND (VFR)

Findings
1. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: GEAR COLLAPSED
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
2. LANDING GEAR,MAIN GEAR ATTACHMENT - OVERLOAD
3. (F) TERRAIN CONDITION - ROUGH/UNEVEN
4. (F) TERRAIN CONDITION - HIGH VEGETATION

Factual Information

On June 20, 2007, about 0930 mountain daylight time, a Cessna 185C, N391M, experienced a gear collapse during an engine-out emergency landing near Kalispell, Montana. The airline transport pilot, who was the sole occupant, was not injured, but the airplane, which is owned and operated by the United States Department of Agriculture Forest Service, sustained substantial damage. The 14 CFR Part 91 public-use personal proficiency flight, which departed Kalispell City Airport about 25 minutes prior to the accident, was being operated in visual meteorological conditions. No flight plan had been filed.

According to the Forest Service, the pilot was practicing a simulated engine-out approach to a 1,800 foot private grass airstrip, with the intention of executing a go-around once he reached 100 feet above ground level (agl). During the approach, the pilot maintained a manifold pressure of about 12 inches, so that the engine would still be producing a small amount of power, and the throttle would not be completely closed.

When the airplane reached a height of about 100 feet above the ground, the pilot moved the throttle partially forward in order to execute a go-around, but the engine rpm did not increase. The pilot then pushed the throttle full forward, but the propeller continued to only windmill. By the time the pilot determined that the engine had lost all power, it was too late to put the airplane down on the grass strip. The pilot therefore elected to make an emergency landing in a field past the departure end of the grass strip. The field where the airplane touched down was rough and uneven, and covered with high vegetation. About 15 feet beyond where the main landing gear came in contact with the terrain, the structure inside the right main landing gear attachment box failed, and the right main landing gear leg collapsed. When the right main gear leg collapsed, the right wing came in contact with the terrain.

During a post-accident inspection of the airplane and engine, no anomalies could be found that would have lead to a loss of power. After the inspection, the Continental Motors IO-0470-F engine was started and run without any malfunction detected.

Pilot Information

Certificate:	Airline transport	**Age:**	71,Male
Airplane Rating(s):	Single-engine land; 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:**	May 1, 2007
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	April 1, 2006
Flight Time:	20170 hours (Total, all aircraft), 1140 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N391M
Model/Series:	185C	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1850684
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	September 1, 2006 Continuous airworthiness	**Certified Max Gross Wt.:**	3200 lbs
Time Since Last Inspection:	40 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	7943 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470-F
Registered Owner:	USDA Forest Service	**Rated Power:**	260 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.06 inches Hg	**Temperature/Dew Point:**	18°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Kalispell, MT (KS27)	**Type of Flight Plan Filed:**	None
Destination:	(KS27)	**Type of Clearance:**	None
Departure Time:	09:05 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:**	48.178611,-114.303611

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	Ed Warmoth; Helena FSDO
Original Publish Date:	February 28, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=66025

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.