



Aviation Investigation Final Report

Location:	RED LODGE, Montana	Accident Number:	SEA00LA076
Date & Time:	April 21, 2000, 10:50 Local	Registration:	N3579V
Aircraft:	Cessna 140	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that shortly after takeoff, the airplane attained an altitude of about five feet and began to drift to the right due to a gust of wind from the left. The pilot corrected with rudder control, however, the airplane continued to drift and would not accelerate or climb as expected. The pilot opted to reduce power and land next to the runway. During the landing roll, the left main landing gear collapsed. The pilot had calculated the density altitude at about 6,267 feet. He also utilized the aircraft's performance data to calculate the takeoff distance and climb rate. The data however, was based upon the installation of a standard propeller. The aircraft was equipped with a cruise pitch propeller. The pilot reported that he felt that the reason why the aircraft would not accelerate and climb as expected, was due to the cruise pitch propeller.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A high density altitude and inadequate preflight planning/preparation. Not attaining a proper climb rate, not maintaining a proper runway alignment, and gusting wind conditions were factors.

Findings

Occurrence #1: MISCELLANEOUS/OTHER
Phase of Operation: TAKEOFF

Findings

1. (C) WEATHER CONDITION - HIGH DENSITY ALTITUDE
2. (C) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND
3. (F) WEATHER CONDITION - GUSTS
4. (F) PROPER ALIGNMENT - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #2: GEAR COLLAPSED

Phase of Operation: TAKEOFF - ABORTED

Findings

5. (F) PROPER CLIMB RATE - NOT ATTAINED - PILOT IN COMMAND

Factual Information

On April 21, 2000, at 1050 mountain daylight time, a Cessna 140, N3579V, registered to and operated by the pilot as a 14 CFR Part 91 personal flight, collapsed the left main landing gear during takeoff from the Red Lodge airport, Red Lodge, Montana. Visual meteorological conditions prevailed at the time and no flight plan was filed. The airplane was substantially damaged and the airline transport pilot, the sole occupant, was not injured.

During a telephone interview and subsequent written statement, the pilot reported that he had just fueled the airplane and was taking off on runway 16 for the next leg of his cross country flight to Casper, Wyoming. The wind was a quartering headwind from the left at about five to 10 knots, with gusts to 15 knots. The pilot stated that during the takeoff ground roll, the tail came up and the airplane lifted off at about 50 mph. The airplane attained an altitude of about five feet when it began to drift to the right due to a gust of wind from the left. The pilot corrected with rudder control, however, the airplane continued to drift to the right and would not accelerate or climb as expected. The pilot reported that the airplane would not clear the fence to the right of the runway, and he opted to reduce power and land to the right side of the runway. During the landing roll, while turning to avoid a collision with a fence, the left main landing gear collapsed.

The pilot reported no mechanical failures or malfunctions, and that the engine was producing full power.

At the time of the accident, Red Lodge was not reporting the weather. The surface observations for Billings, Montana, located approximately 45 nautical miles northeast, was reporting at 0956, a temperature of 57 degrees, with an altimeter setting of 30.03" Hg. Density altitude calculated for the field elevation at Red Lodge of 5,763 feet, under the conditions reported from Billings, was approximately 6,864 feet.

The pilot reported that he calculated a density altitude of 6,267 feet utilizing the altimeter setting from Billings of 30.04" Hg, and a temperature of approximately 50 degrees. The pilot then calculated via the Cessna 140 performance data, which is based upon a gross weight of 1,450 pounds and a standard Sensenich 74FK-49 propeller, at 6,000 feet, a takeoff distance of 1,343 feet, and a normal climb rate of 365 fpm. (see attached performance information)

The aircraft, however, was equipped with a McCauley CM 7150 cruise pitch propeller. The pilot stated that he felt that the reason why the aircraft would not accelerate and climb as expected, was due to the cruise pitch propeller.

Pilot Information

Certificate:	Airline transport; Commercial	Age:	58, 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 1 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	January 18, 2000
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	2942 hours (Total, all aircraft), 28 hours (Total, this make and model), 2169 hours (Pilot In Command, all aircraft), 111 hours (Last 90 days, all aircraft), 49 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N3579V
Model/Series:	140 140	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	14748
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	March 27, 2000 Annual	Certified Max Gross Wt.:	1450 lbs
Time Since Last Inspection:	28 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	5045 Hrs	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	C90-12F
Registered Owner:	BILL J. HARRIS	Rated Power:	90 Horsepower
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

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:	10 knots / 15 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	10°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		Type of Flight Plan Filed:	None
Destination:	CASPER , WY (CPR)	Type of Clearance:	None
Departure Time:	00:00 Local	Type of Airspace:	Class E

Airport Information

Airport:	RED LODGE RED	Runway Surface Type:	Asphalt
Airport Elevation:	5763 ft msl	Runway Surface Condition:	Dry
Runway Used:	16	IFR Approach:	None
Runway Length/Width:	4000 ft / 75 ft	VFR Approach/Landing:	None

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:	45.190891,-109.240203(est)

Administrative Information

Investigator In Charge (IIC):	Eckrote, Debra
Additional Participating Persons:	LEO WADEKAMPER; HELENA , MT
Original Publish Date:	May 9, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49038

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](#).