



Aviation Investigation Final Report

Location:	STURGIS, South Dakota	Accident Number:	CHI01LA051
Date & Time:	December 19, 2000, 13:20 Local	Registration:	N13584
Aircraft:	Cessna 172M	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane impacted the terrain following a loss of control during takeoff. The pilot reported that during his preflight, he noticed the elevator trim was set "all the way to the bottom", so he set it for takeoff. The pilot completed the aircraft preflight, started the engine, and taxied to the runway for takeoff. The pilot stated that during the takeoff roll at 75 to 80 miles per hour, he "slowly pulled back on the control wheel and the plane would not lift off. After the midfield point it still would not lift off. So I proceeded to pull power at which time it lifted up and came back down and bounced one more time before I pushed in power." He reported the airplane went off the right side of the runway and flew over the runway and approach lights before it impacted the terrain and the nose gear collapsed. Inspection of the airplane revealed the elevator trim tab and the cockpit trim indicator were not consistent with each other. When the pilot aligned the indicator for a takeoff setting, the actual trim surface was in a full nose down position.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot failed to maintain control of the airplane during takeoff and he discontinued an aborted takeoff once initiated. Factors associated with the accident were the inaccurate elevator trim indicator, the pilot's failure to verify the trim setting, rotation was restricted, directional control was not maintained, and the berm which the airplane contacted.

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

1. (F) FLT CONTROL SYST,ELEVATOR TRIM INDICATOR - INACCURATE
2. (F) ELEVATOR TRIM - NOT VERIFIED - PILOT IN COMMAND
3. (F) ROTATION - RESTRICTED
4. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
5. (C) ABORTED TAKEOFF - DISCONTINUED - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: TAKEOFF

Findings

6. (F) DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

7. LANDING GEAR,NOSE GEAR ASSEMBLY - OVERLOAD

Occurrence #4: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: OTHER

Findings

8. (F) TERRAIN CONDITION - BERM

Occurrence #5: NOSE GEAR COLLAPSED

Phase of Operation: OTHER

Findings

9. LANDING GEAR,NOSE GEAR ASSEMBLY - OVERLOAD

Factual Information

On December 19, 2000, at 1320 mountain standard time, a Cessna 172M, N13584, collided with the terrain following a loss of control on takeoff from runway 29 (4,600 feet by 60 feet) at the Sturgis Municipal Airport, Sturgis, South Dakota. The private pilot and his passenger were not injured. The airplane was substantially damaged. The 14 CFR Part 91 local flight was operating in visual meteorological conditions without a flight plan. The flight was originating at the time of the accident.

The pilot reported that upon arriving at the airport, he discovered that the airplane he was going to fly had snow on the wings. He reported he removed the snow from the wings, checked the weather, and performed his preflight inspection. The pilot reported that during his preflight, he noticed the elevator trim was set "all the way to the bottom", so he set it for takeoff. The pilot completed the aircraft preflight, started the engine, and taxied to runway 29 for takeoff. The pilot stated that during the takeoff roll at 75 to 80 miles per hour, he "slowly pulled back on the control wheel and the plane would not lift off. After the midfield point it still would not lift off. So I proceeded to pull power at which time it lifted up and came back down and bounced one more time before I pushed in power." He reported the airplane went off the right side of the runway and flew over the runway and approach lights before it impacted the terrain. The pilot reported the nose gear impacted a berm and the nose gear collapsed prior to the airplane coming to rest.

An inspector from the Federal Aviation Administration, Rapid City, South Dakota, Flight Standards District Office inspected the airplane after the accident. The inspector reported that the elevator trim tab and the cockpit trim indicator were not consistent with each other. He reported that when the pilot aligned the indicator for a takeoff setting, the actual trim surface was in a full nose down position. The trim indicator malfunction was not written up in the aircraft discrepancy log that is kept by the flying club which owns the airplane.

Pilot Information

Certificate:	Private	Age:	44, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	September 18, 1999
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	176 hours (Total, all aircraft), 9 hours (Total, this make and model), 122 hours (Pilot In Command, all aircraft), 3 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N13584
Model/Series:	172M 172M	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	62858
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	Annual	Certified Max Gross Wt.:	2300 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	5367 Hrs	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-320-E2D
Registered Owner:	BEAR BUTTE FLYING CLUB	Rated Power:	150 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:	RAP ,3202 ft msl	Distance from Accident Site:	30 Nautical Miles
Observation Time:	12:55 Local	Direction from Accident Site:	150°
Lowest Cloud Condition:	Scattered / 12000 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	110°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	28°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(49B)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	00:00 Local	Type of Airspace:	Class E

Airport Information

Airport:	STURGIS MUNICIPAL K49B	Runway Surface Type:	Asphalt
Airport Elevation:	3239 ft msl	Runway Surface Condition:	Dry
Runway Used:	29	IFR Approach:	
Runway Length/Width:	4600 ft / 60 ft	VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	44.40942,-103.50946(est)

Administrative Information

Investigator In Charge (IIC):	Sullivan, Pamela
Additional Participating Persons:	LYLE ERICKSON; RAPID CITY , SD
Original Publish Date:	November 1, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=50813

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](#).