



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Bismarck, North Dakota	Accident Number:	CEN23LA103
Date & Time:	February 6, 2023, 15:45 Local	Registration:	N425Z
Aircraft:	Cessna 425	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	2 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot taxied to the ramp after an uneventful flight. After moving the throttles toward the ground idle position while in front of the marshaller, the airplane turned left, and the pilot observed that the right brake was inoperative. He attempted to stop the airplane by placing both propeller levers to the feather position and subsequently moved both throttles toward the reverse (beta) position. The airplane continued forward and struck a hangar, which resulted in substantial damaged to the left wing.

Postaccident examination of the braking system revealed the brake master cylinders were nearly empty of brake fluid, with no leaks observed. The pilot, who was also a mechanic, recorded completion of a phase inspection about nine months before the accident. The inspection included servicing the brake master cylinders, but the pilot reported he did not check the fluid levels of the master cylinders.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A loss of braking due to inadequate servicing of brake fluid by the pilot/mechanic, which resulted in a loss of airplane control on the ground.

Findings

Aircraft	Landing gear brakes system - Incorrect service/maintenance
Aircraft	(general) - Fluid level
Personnel issues	Scheduled/routine maintenance - Maintenance personnel
Personnel issues	Incorrect action selection - Pilot
Environmental issues	Residence/building - Effect on equipment

Factual Information

History of Flight

Taxi	Sys/Comp malf/fail (non-power)
Taxi	Loss of control on ground (Defining event)
Taxi	Collision with terr/obj (non-CFIT)

On February 6, 2023, about 1545 central standard time, a Cessna 425, N425Z, was substantially damaged when it was involved in an accident at Bismarck Municipal Airport (BIS), Bismarck, North Dakota. The pilot was not injured and the two passengers sustained minor injuries. The airplane was operated as a Title 14 Code of *Federal Regulations* Part 91 personal flight.

The pilot reported an uneventful flight and landing at BIS. After taxiing to the ramp, the pilot proceeded to stop the airplane in front of a marshaller. After moving the throttles toward the ground idle position, the pilot observed the airplane turn left and reported that the right brake was inoperative.

The pilot reported moving both propeller levers to the feather position and subsequently moved both throttles toward the reverse (beta) position. The airplane continued forward and struck a hangar, which substantially damaged the left wing.

Postaccident examination of the braking system revealed the brake master cylinders were nearly empty of brake fluid, with no leaks observed. A review of maintenance logs revealed that the pilot, who was also a mechanic, recorded completion of the Phase 3 inspection of the Cessna 425 maintenance manual on May 21, 2022. The Phase 3 inspection includes servicing the brake master cylinders.

The pilot/mechanic reported that during this inspection he checked the brake pads and checked for leaks around the brakes and the master cylinders. He depressed the brake pedals to find there was resistance; however, he reported that he did not check the fluid levels of the master cylinders during the inspection.

Pilot Information

Certificate:	Airline transport	Age:	63,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	August 31, 2021
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	June 10, 2022
Flight Time:	6740 hours (Total, all aircraft), 272 hours (Total, this make and model), 6357 hours (Pilot In Command, all aircraft), 56 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N425Z
Model/Series:	425	Aircraft Category:	Airplane
Year of Manufacture:	1983	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	425-0186
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	May 25, 2022 Continuous airworthiness	Certified Max Gross Wt.:	8600 lbs
Time Since Last Inspection:		Engines:	2 Turbo prop
Airframe Total Time:	2728 Hrs as of last inspection	Engine Manufacturer:	Pratt & Whitney
ELT:	Installed, not activated	Engine Model/Series:	PT6-112
Registered Owner:	PEGASUS ROYALTY GROUP LLC	Rated Power:	450 Horsepower
Operator:	PEGASUS ROYALTY GROUP LLC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KBIS, 1651 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	15:52 Local	Direction from Accident Site:	318°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Overcast / 8000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	18 knots / 30 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	310°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.67 inches Hg	Temperature/Dew Point:	3°C / -2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Chandler, AZ (CHD)	Type of Flight Plan Filed:	IFR
Destination:	Bismark, ND (BIS)	Type of Clearance:	None
Departure Time:	10:51 Local	Type of Airspace:	Class D

Airport Information

Airport:	Bismarck Municipal Airport KBIS	Runway Surface Type:	Concrete
Airport Elevation:	1661 ft msl	Runway Surface Condition:	Dry
Runway Used:	31	IFR Approach:	None
Runway Length/Width:	8794 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	2 Minor	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	2 Minor, 1 None	Latitude, Longitude:	46.772734,-100.74573(est)

Administrative Information

Investigator In Charge (IIC):	Folkerts, Michael
Additional Participating Persons:	Michael Linden; FAA, Flight Standards District Office; Fargo, ND
Original Publish Date:	May 2, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=106701

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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](#).