Aviation Investigation Final Report

Location:	Pinedale, Wyoming	**Accident Number:**	WPR25LA029
Date & Time:	October 29, 2024, 16:45 Local	**Registration:**	N885CA
Aircraft:	Daher TBM700	**Aircraft Damage:**	Substantial
Defining Event:	Structural icing	**Injuries:**	1 Serious, 6 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After landing, the airplane was refueled, and six passengers boarded. During the airplane's approximately 15-minute ground stop, a witness observed that heavy, wet snow was falling. Before taxi, the pilot used a foam brush to remove snow from the airplane. The witness further observed snow contamination on an outboard wing section after the pilot finished brushing the airplane.

Heavy snowfall continued as the airplane taxied but diminished by the time the airplane began its takeoff roll. During rotation, the airplane became airborne briefly before the left wing dropped and struck terrain.

According to the airplane's pilot's operating handbook (POH), even small accumulations of snow, frost, or ice must be removed from the wings, tail, and control surfaces during the preflight inspection. The POH also called for anti-icing fluid shortly before takeoff from a snow-covered runway. The risks of snow and ice accumulation were also addressed in a 2018 service letter (SL) from the airplane manufacturer, which stated that takeoffs with snow or ice adhering to the wings should not be attempted because such contamination could drastically affect performance due to reduced aerodynamic lift and increased drag resulting from disturbed airflow. The SL also provided recommendations for ground deicing and anti-icing procedures and emphasized the need for a pre-takeoff contamination inspection.

The left wing drop shortly after liftoff was consistent with an aerodynamic stall. The stall was likely the result of snow contamination that remained on the wing after the pilot brushed the airplane; the amount of snow on the wing also likely increased as snow continued to fall during taxi. The contamination reduced aerodynamic lift and increased drag, which resulted in a loss of control shortly after takeoff. Because snow continued to fall during taxi, the lack of anti-

icing fluid also left the cleaned surfaces exposed to renewed accumulation. Although Type I fluid was available for deicing, the manufacturer cautioned that it would provide inadequate anti-icing protection during snowfall unless takeoff followed deicing almost immediately. The other fluid reportedly available, Type IV, was unsuitable for this airplane. The absence of preimpact mechanical failures or malfunctions further supported an aerodynamic, rather than mechanical, explanation for the loss of control. A review of two previous accidents involving the same airplane type and similar circumstances revealed similar left-wing drops shortly after liftoff.

The pilot's reported rotation speed of 85 knots was slightly below the charted rotation speed of about 87 knots for the airplane's reported takeoff weight. Rotating early likely further reduced the airplane's safety margin during liftoff.

Probable Cause and Findings

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

The pilot's failure to ensure that the airplane was free of snow contamination before takeoff and to follow the manufacturer's anti-icing procedure during continued snowfall, which resulted in an aerodynamic stall and loss of control shortly after liftoff. Contributing to the accident was the pilot's rotation below the manufacturer's recommended rotation speed.

Findings

Aircraft	Flight surfaces (wing) - Inadequate inspection
Personnel issues	Decision making/judgment - Pilot
Environmental issues	Snow - Effect on equipment
Aircraft	Airspeed - Not attained/maintained
Personnel issues	Preflight inspection - Pilot
Personnel issues	Use of policy/procedure - Pilot
Aircraft	(general) - Capability exceeded

Factual Information

History of Flight

Takeoff	Structural icing (Defining event)
Initial climb	Loss of control in flight
Initial climb	Dragged wing/rotor/float/other
Initial climb	Collision with terr/obj (non-CFIT)

On October 29, 2024, about 1645 mountain daylight time, a Daher TBM 700N (marketed as the TBM 850) airplane, N885CA, was substantially damaged when it was involved in an accident near Pinedale, Wyoming. The pilot and five passengers sustained minor injuries, and one passenger sustained serious injuries. The flight was conducted under Title 14 *Code of Federal Regulations* Part 91 as a personal flight.

According to a witness at Ralph Wenz Field Airport (PNA), Pinedale, Wyoming, the airplane landed and was refueled. About 40 gallons of fuel were added to each tank, and six passengers boarded the airplane during the stop. He noted that heavy, wet snow fell during the airplane's time on the ground. The airplane was on the ground for about 15 minutes. Before taxi, the pilot used a foam brush to remove snow from the airplane. The witness observed snow contamination on an outboard wing section after the pilot finished brushing the airplane. The airport manager reported that he informed the pilot about the availability of Type I and Type IV deicing and anti-icing fluids at the airport prior to the accident flight, which the pilot declined.

The heavy snowfall continued as the airplane taxied but became light when the airplane began its takeoff roll on runway 29. During rotation, the airplane became airborne briefly before the left wing dropped and struck terrain. The airplane's left wing and fuselage sustained substantial damage. The pilot reported the runway condition as "wet and snow-wet."

Postaccident examination of the airframe revealed no evidence of preimpact mechanical failures or malfunctions that would have precluded normal operation. Flight control continuity was confirmed. The left aileron had separated during the accident sequence, but its outboard portion remained attached to the aileron linkage and moved appropriately when establishing continuity with the control columns. The flaps measured near the takeoff setting of 10°.

The pilot reported a takeoff gross weight of about 6,939 pounds, which was below the maximum takeoff weight of 7,394 pounds. The airplane's estimated center of gravity was within limits.

The pilot stated that he used a rotation speed of 85 knots. The POH takeoff performance chart indicated a rotation speed of about 87 knots for the reported takeoff weight. About 2,400 ft down the runway, the airplane started to turn left, and impact markings were consistent with the left wing striking terrain beyond the runway's edge. The airplane continued on a heading about 20° left of the runway heading until it came to rest on a dirt berm about 300 ft from the runway edge. Numerous small airplane fragments were distributed along the debris path from the initial left-wing impact to the main wreckage.

According to the POH, even small accumulations of frost, ice, or snow must be removed from the wings, tail, and control surfaces during the preflight inspection. For takeoff from a runway covered with melting or untamped snow, the POH directs pilots to apply anti-icing fluid to the wings, stabilizers, movable surfaces, and landing gear wells shortly before takeoff. For an icy or tamped-snow runway, it directs application to the wings, stabilizers, and movable surfaces. A service letter (SL) from the airplane manufacturer stated that takeoffs with snow or ice adhering to the wings should not be attempted because such contamination could drastically affect performance due to reduced aerodynamic lift and increased drag resulting from disturbed airflow. The SL described mechanical removal and one- and two-step ground deicing and anti-icing procedures and called for a pre-takeoff contamination inspection. The airport manager reported that Type I and Type IV fluids were available on the day of the accident. The SL identified Type I fluid for deicing and Type III fluid for anti-icing, but cautioned that Type I provides inadequate anti-icing protection during snowfall unless takeoff follows deicing almost immediately. It advised against using Type II or Type IV fluid on the TBM 700 because of its low rotation speed.

The pilot stated that ensuring all hard surfaces, including the ramp, taxiway, and runway, were completely plowed before engine start might have prevented the accident. The POH stated that the airplane's maximum occupancy was limited by the installed approved seating configuration but could not exceed six people, including the pilot. The pilot and six passengers were aboard the airplane.

A review of two National Transportation Safety Board accident reports involving the same airplane type revealed similar accidents after the pilots failed to ensure ice and snow had been removed from the airplane's surfaces before takeoff. In CEN12LA153, the left wing dropped just after the airplane became airborne during takeoff. Similarly, in the CEN24FA046 report, a witness reported that the takeoff appeared to be normal before the left wing dropped shortly after rotation. The airplane manufacturer stated that the left wing would typically stall first, which was expected behavior for a conventional single-engine airplane equipped with a clockwise-turning propeller. The accident airplane had a weather radar pod installed on the left wing; however, manufacturer flight tests conducted without the pod also resulted in the left wing stalling first.

Pilot Information

Certificate:	Private	**Age:**	51,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	September 5, 2024
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	May 7, 2024
Flight Time:	(Estimated) 2200 hours (Total, all aircraft), 500 hours (Total, this make and model), 2060 hours (Pilot In Command, all aircraft), 75 hours (Last 90 days, all aircraft), 21 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Daher	**Registration:**	N885CA
Model/Series:	TBM700 N	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	363
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	August 28, 2024 Annual	**Certified Max Gross Wt.:**	7394 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo prop
Airframe Total Time:	2400 Hrs at time of accident	**Engine Manufacturer:**	Pratt & Whitney
ELT:	C126 installed, not activated	**Engine Model/Series:**	PT-6 66D
Registered Owner:	GRAND AIR LLC	**Rated Power:**	850 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KPNA,7086 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	16:35 Local	**Direction from Accident Site:**	82°
Lowest Cloud Condition:	Scattered / 600 ft AGL	**Visibility**	4 miles
Lowest Ceiling:	Broken / 3200 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/ None	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.72 inches Hg	**Temperature/Dew Point:**	-1°C / -2°C
Precipitation and Obscuration:	Light - None - Snow		
Departure Point:	Pinedale, WY	**Type of Flight Plan Filed:**	IFR
Destination:		**Type of Clearance:**	IFR
Departure Time:		**Type of Airspace:**	

Airport Information

Airport:	Ralph Wenz Field Aieport KPNA	**Runway Surface Type:**	
Airport Elevation:	7096 ft msl	**Runway Surface Condition:**	
Runway Used:	29	**IFR Approach:**	None
Runway Length/Width:	8900 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious, 5 Minor	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 6 Minor	**Latitude, Longitude:**	42.795903,-109.80797(est)

Administrative Information

Investigator In Charge (IIC):	Nixon, Albert
Additional Participating Persons:	Bruce Hanson; FAA Casper FSDO; Casper, WY
Original Publish Date:	October 16, 2026
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=195417

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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.