



Aviation Investigation Final Report

Location:	Greeley, Colorado	Accident Number:	CEN24LA015
Date & Time:	October 17, 2023, 14:30 Local	Registration:	N41DH
Aircraft:	DEHAVILLAND TIGER MOTH DH 82A	Aircraft Damage:	Substantial
Defining Event:	Aerodynamic stall/spin	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot and pilot-rated-passenger intended to complete a personal cross-country flight with variable wind about 6 knots at the departure airport. The pilot noted the windsock nearest the airplane indicated a tailwind, but the other windsocks farther down the runway indicated a headwind or crosswind. During takeoff, the airplane became airborne faster than expected and climbed well, so the pilot made an early right turn over airport hangars. The airplane's upper wing slats fluttered which indicated to the pilot that the airspeed was low, then they "came out hard," which indicated the airplane was near a stall. The pilot ensured the throttle was full forward and decreased pitch attitude to maintain airspeed but felt like the airplane "was being forced down." Unable to maintain altitude, and with no suitable forced landing area, he maneuvered the airplane to collide with the side of a hangar and the ground, then it nosed over. The airplane sustained substantial damage to the wings, fuselage, and empennage. The pilot reported that there were no preaccident mechanical malfunctions or failures that would have precluded normal operation.

Airport surveillance video showed the airplane at low altitude and appeared to climb until it overflew airport hangars. The airplane maintained a climb pitch attitude as it descended into the hangars.

Probable Cause and Findings

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

The pilot's decision to turn out early during the initial climb and failure to maintain adequate airspeed/angle-of-attack, which resulted in an aerodynamic stall and impact with airport hangars. Contributing to the accident was the variable wind conditions above the hangars and the pilot's lack of awareness of those conditions.

Findings

Personnel issues	Decision making/judgment - Pilot
Aircraft	Airspeed - Not attained/maintained
Environmental issues	Variable wind - Awareness of condition
Aircraft	Angle of attack - Capability exceeded
Personnel issues	Aircraft control - Pilot
Environmental issues	Variable wind - Effect on equipment
Environmental issues	Variable wind - Awareness of condition

Factual Information

History of Flight

Initial climb	Aerodynamic stall/spin (Defining event)
Initial climb	Stall warn/stick-shaker/pusher
Initial climb	Other weather encounter

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	47,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Rear
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	October 10, 2023
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 8, 2023
Flight Time:	3854 hours (Total, all aircraft), 16 hours (Total, this make and model), 89 hours (Last 90 days, all aircraft), 22 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Pilot-rated passenger Information

Certificate:		Age:	78,Male
Airplane Rating(s):		Seat Occupied:	Center
Other Aircraft Rating(s):		Restraint Used:	4-point
Instrument Rating(s):		Second Pilot Present:	Yes
Instructor Rating(s):		Toxicology Performed:	
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	DEHAVILLAND	Registration:	N41DH
Model/Series:	TIGER MOTH DH 82A	Aircraft Category:	Airplane
Year of Manufacture:	1941	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	84734
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	June 27, 2023 Annual	Certified Max Gross Wt.:	1825 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2766.8 Hrs as of last inspection	Engine Manufacturer:	de Havilland
ELT:	Installed, not activated	Engine Model/Series:	Gipsy Major
Registered Owner:	VOYAGER 180 LLC	Rated Power:	130 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:	KGXY, 4696 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	16:56 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	12 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	26.7°C / -1.1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Greeley, CO	Type of Flight Plan Filed:	VFR
Destination:	Colorado Springs, CO (AFF)	Type of Clearance:	VFR
Departure Time:		Type of Airspace:	Class G

Airport Information

Airport:	GREELEY-WELD COUNTY GXY	Runway Surface Type:	Asphalt
Airport Elevation:	4696 ft msl	Runway Surface Condition:	Dry
Runway Used:	10	IFR Approach:	None
Runway Length/Width:	5801 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	40.424728,-104.63791

Administrative Information

Investigator In Charge (IIC):	Lindberg, Joshua
Additional Participating Persons:	James Faughn; Federal Aviation Administration; Denver, CO
Original Publish Date:	November 16, 2023
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=193262

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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](#).