



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Eden Prairie, Minnesota	Accident Number:	CEN23LA138
Date & Time:	March 11, 2023, 21:33 Local	Registration:	N789TB
Aircraft:	Socata TB21	Aircraft Damage:	Destroyed
Defining Event:	Loss of control in flight	Injuries:	1 Serious, 2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that, during a night cross country flight, the airplane encountered icing conditions while on an instrument approach. The pilot observed about 4 inches of ice had formed on the wing, running about one foot aft. The pilot reported he put the landing gear down about 5 miles from the runway. The pilot continued the approach and stated he broke out of the clouds about 300-400 ft agl and had "minimal control." The airplane impacted snow-covered ground and came to rest about a half mile from the runway. The airplane was destroyed by a post-impact fire. In an email, the pilot stated the "airplane was in good shape."

At the time of the accident there was an icing AIRMET that covered the location of the accident. The Socata TB21 Pilot Information Manual states "Flight into known icing conditions is prohibited."

Probable Cause and Findings

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

The pilot's continued flight into icing conditions in an airplane that was not equipped for icing, which led to structural icing, subsequent loss of airplane control and impact with terrain.

Findings

Personnel issues	Weather planning - Pilot
Personnel issues	Monitoring environment - Pilot
Aircraft	(general) - Capability exceeded
Environmental issues	Drizzle/mist - Effect on equipment
Personnel issues	Decision making/judgment - Pilot

Factual Information

History of Flight

Approach	Structural icing
Landing	Loss of control in flight (Defining event)
Landing	Collision with terr/obj (non-CFIT)
Post-impact	Fire/smoke (post-impact)

Pilot Information

Certificate:	Commercial	Age:	55,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	February 1, 2023
Occupational Pilot:	No	Last Flight Review or Equivalent:	July 1, 2021
Flight Time:	(Estimated) 2999 hours (Total, all aircraft), 1400 hours (Total, this make and model), 2989 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Passenger Information

Certificate:	Age:	26,Male
Airplane Rating(s):	Seat Occupied:	Right
Other Aircraft Rating(s):	Restraint Used:	3-point
Instrument Rating(s):	Second Pilot Present:	
Instructor Rating(s):	Toxicology Performed:	
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot:	Last Flight Review or Equivalent:	
Flight Time:		

Passenger Information

Certificate:	Age:	29, Male
Airplane Rating(s):	Seat Occupied:	Rear
Other Aircraft Rating(s):	Restraint Used:	3-point
Instrument Rating(s):	Second Pilot Present:	
Instructor Rating(s):	Toxicology Performed:	
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot:	Last Flight Review or Equivalent:	
Flight Time:		

Aircraft and Owner/Operator Information

Aircraft Make:	Socata	Registration:	N789TB
Model/Series:	TB21	Aircraft Category:	Airplane
Year of Manufacture:	1999	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	1919
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:		Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:	Installed	Engine Model/Series:	TIO-540
Registered Owner:	On file	Rated Power:	250 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Night
Observation Facility, Elevation:	KFCM, 905 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	20:45 Local	Direction from Accident Site:	28°
Lowest Cloud Condition:		Visibility	3 miles
Lowest Ceiling:	Overcast / 500 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	150°	Turbulence Severity Forecast/Actual:	/ Light
Altimeter Setting:	29.88 inches Hg	Temperature/Dew Point:	-2°C / -2°C
Precipitation and Obscuration:	Moderate - None - Mist		
Departure Point:	Fairmont, MN (FRM)	Type of Flight Plan Filed:	IFR
Destination:	Eden Prairie, MN (FCM)	Type of Clearance:	IFR
Departure Time:		Type of Airspace:	

Airport Information

Airport:	FLYING CLOUD FCM	Runway Surface Type:	
Airport Elevation:	906 ft msl	Runway Surface Condition:	Snow
Runway Used:		IFR Approach:	ILS
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:	2 Minor	Aircraft Fire:	On-ground
Ground Injuries:		Aircraft Explosion:	On-ground
Total Injuries:	1 Serious, 2 Minor	Latitude, Longitude:	44.829148,-93.473143(est)

Administrative Information

Investigator In Charge (IIC): Rutt, Brian

Additional Participating Persons: Gregory Thurston; FAA-MPLS FSDO

Original Publish Date: June 6, 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=106905>

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](#).