Aviation Investigation Final Report

Location:	Dalhart, Texas	**Accident Number:**	CEN24LA092
Date & Time:	January 11, 2024, 13:15 Local	**Registration:**	N2513P
Aircraft:	Piper PA22	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that prior to descending during the cross-country flight, he activated the carburetor heat. As the pilot initiated the descent, the engine began “coughing” and was “progressively failing,” until a total loss of engine power occurred. The pilot switched fuel tanks, he adjusted the mixture, and he activated the carburetor heat to no avail. During the forced landing to a remote grass field covered with snow, the airplane came to rest inverted, and the pilot was able to egress from the airplane without further incident. The pilot reported to first responders that the carburetor had “iced up.”

The airplane sustained substantial damage to the fuselage and both wings. When the temperature and the dewpoint near the time of the accident were plotted on a carburetor icing probability graph, it was revealed that the airplane was likely operating in meteorological conditions conducive to the formation of carburetor icing (for both glide and cruise power settings). The pilot reported there were no preimpact mechanical malfunctions or failures with the airframe or the engine that would have precluded normal operation. The Piper Aircraft PA-22-150 Tri-Pacer Owner’s Handbook discusses the use of carburetor heat during cruise operations and states, “unless icing conditions in the carburetor are severe, do not cruise with the carburetor heat on” and “apply full carburetor heat only for a few seconds at intervals determined by icing severity.”

Probable Cause and Findings

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

The total loss of engine power due to carburetor icing and the pilot's failure to utilize carburetor heat in meteorological conditions conducive to the formation of carburetor icing.

Findings

Personnel issues	Lack of action - Pilot
Personnel issues	Use of equip/system - Pilot
Aircraft	(general) - Failure
Aircraft	Intake anti-ice, deice - Not used/operated
Environmental issues	Conducive to carburetor icing - Effect on equipment
Environmental issues	Conducive to carburetor icing - Awareness of condition

Factual Information

History of Flight

Enroute-descent	Other weather encounter
Enroute-descent	Loss of engine power (total) (Defining event)
Enroute-descent	Attempted remediation/recovery
Landing	Off-field or emergency landing
Landing	Nose over/nose down
Post-impact	Evacuation

Pilot Information

Certificate:	Commercial; Foreign	**Age:**	49,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	August 10, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 11000 hours (Total, all aircraft), 11000 hours (Pilot In Command, all aircraft), 90 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N2513P
Model/Series:	PA22 150	**Aircraft Category:**	Airplane
Year of Manufacture:	1955	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	22-2875
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	October 31, 2023 Annual	**Certified Max Gross Wt.:**	2000 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3588.4 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming Engines
ELT:	Installed	**Engine Model/Series:**	O-320
Registered Owner:	On file	**Rated Power:**	150 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None
Operator Does Business As:	On file	**Operator Designator Code:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KDHT,3994 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	180°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	18 knots / 26 knots	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.41 inches Hg	**Temperature/Dew Point:**	7°C / -4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Erie, CO (EIK)	**Type of Flight Plan Filed:**	VFR
Destination:	Dalhart, TX (DHT)	**Type of Clearance:**	None
Departure Time:	11:00 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	36.158967,-102.54813(est)

Administrative Information

Investigator In Charge (IIC):	Hodges, Michael
Additional Participating Persons:	Kiyokazu Kawaharada; FAA Lubbock FSDO; Lubbock, TX
Original Publish Date:	July 2, 2024
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=193680