Aviation Investigation Final Report

Location:	Brashear, Texas	**Accident Number:**	CEN23LA083
Date & Time:	January 15, 2023, 09:30 Local	**Registration:**	N1957P
Aircraft:	CHEEK CARROLL HATZ/CHEEK	**Aircraft Damage:**	Substantial
Defining Event:	Fuel related	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported a gradual loss of engine power during cruise flight. He applied carburetor heat when the engine began running rough, which seemed to make the situation worse. Eventually, the available engine power was insufficient to maintain altitude and it became clear the airplane would not be able to reach the destination airport. The pilot executed a forced landing to a field; however, he flared too high and landed hard. The airframe sustained substantial damage to both wings and the fuselage.

A postaccident engine examination revealed minor anomalies with respect to the carburetor heat system, and those anomalies may have slightly reduced the effectiveness of the carburetor heat when applied. The remaining anomalies identified during the engine examination were not consistent with a gradual loss of engine power and did not contribute to the accident.

Meteorological conditions were conducive to the formation of carburetor icing during cruise flight. Based on the available information, it is likely that the formation of carburetor icing, which the carburetor heat system was unable to adequately remove, resulted in the loss of engine power. In addition, the hard landing that occurred during the forced landing may have increased the extent of damage to the airframe.

Probable Cause and Findings

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

A partial loss of engine power due to the formation of carburetor ice, which resulted in the inability to maintain altitude and the subsequent hard forced landing.

Findings

Environmental issues	Conducive to carburetor icing - Effect on equipment

Factual Information

History of Flight

Enroute	Fuel related (Defining event)
Enroute	Loss of engine power (total)
Emergency descent	Off-field or emergency landing
Landing-flare/touchdown	Hard landing

On January 15, 2023, about 0930 central standard time, a Hatz Classic airplane, N1957P, was substantially damaged when it was involved in an accident near Brashear, Texas. The pilot was not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported a gradual loss of engine power during cruise flight. He applied carburetor heat when the engine began running rough, which seemed to make the situation worse. Eventually, the available engine power was insufficient to maintain altitude and it became clear the airplane would not be able to reach the destination airport. He executed a forced landing to a field; however, he flared “too high” and landed hard. The airframe sustained damage to both wings and the fuselage.

A postaccident engine examination noted the carburetor heat ducting appeared “insufficient for proper airflow” and the carburetor heat control arm was not fully engaged. The mechanic estimated the carburetor heat installation was about 90% functional. In addition, the electric conductivity between the magneto P-lead and the cockpit ignition switch was intermittent, and 2 ignition leads exhibited minor damage. Otherwise, the engine examination was unremarkable.

Meteorological conditions were conducive to the formation of carburetor icing during cruise flight. In his statement, the pilot noted the possibility of carburetor icing as the reason for the loss of engine power.

Pilot Information

Certificate:	Private	**Age:**	62,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	November 22, 2022
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	December 1, 2022
Flight Time:	756 hours (Total, all aircraft), 1 hours (Total, this make and model), 677 hours (Pilot In Command, all aircraft), 5 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CHEEK CARROLL	**Registration:**	N1957P
Model/Series:	HATZ/CHEEK	**Aircraft Category:**	Airplane
Year of Manufacture:	2003	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	825
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	January 14, 2023 Condition	**Certified Max Gross Wt.:**	1500 lbs
Time Since Last Inspection:	0 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	302.6 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	O-300-D
Registered Owner:	On file	**Rated Power:**	145 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None
Operator Does Business As:	On file	**Operator Designator Code:**	N/A

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KSLR,489 ft msl	**Distance from Accident Site:**	7 Nautical Miles
Observation Time:	09:36 Local	**Direction from Accident Site:**	64°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Broken / 1000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots / 16 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.02 inches Hg	**Temperature/Dew Point:**	11°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hilltop Lakes, TX (0TE4)	**Type of Flight Plan Filed:**	None
Destination:	Sulphur Springs, TX (SLR)	**Type of Clearance:**	None
Departure Time:	08:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	N/A N/A	**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	Vegetation
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

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:**	32.98421,-95.69327

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	Louis Vargo; FAA Flight Standards; Irving, TX
Original Publish Date:	June 22, 2023
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=106587