



# Aviation Investigation Final Report

<b>Location:</b>	Brashear, Texas	<b>Accident Number:</b>	CEN23LA083
<b>Date &amp; Time:</b>	January 15, 2023, 09:30 Local	<b>Registration:</b>	N1957P
<b>Aircraft:</b>	CHEEK CARROLL HATZ/CHEEK	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fuel related	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	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

<b>Environmental issues</b>	Conducive to carburetor icing - Effect on equipment
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# 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.

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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

<b>Certificate:</b>	Private	<b>Age:</b>	62, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Rear
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	November 22, 2022
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	December 1, 2022
<b>Flight Time:</b>	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

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

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KSLR,489 ft msl	<b>Distance from Accident Site:</b>	7 Nautical Miles
<b>Observation Time:</b>	09:36 Local	<b>Direction from Accident Site:</b>	64°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 1000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	11 knots / 16 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	170°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.02 inches Hg	<b>Temperature/Dew Point:</b>	11°C / 8°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Hilltop Lakes, TX (OTE4)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Sulphur Springs, TX (SLR)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	08:30 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

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

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	32.98421,-95.69327

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Sorensen, Timothy
<b>Additional Participating Persons:</b>	Louis Vargo; FAA Flight Standards; Irving, TX
<b>Original Publish Date:</b>	June 22, 2023
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=106587">https://data.nts.gov/Docket?ProjectID=106587</a>

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](#).