



# **Aviation Investigation Final Report**

Location:	Hudson Oaks, Texas	Accident Number:	CEN22LA036
Date & Time:	October 30, 2021, 19:10 Local	Registration:	N29615
Aircraft:	Cessna 177	Aircraft Damage:	Substantial
Defining Event:	Fuel exhaustion	Injuries:	5 None
Flight Conducted Under:	Part 91: General aviation - Personal		

### Analysis

During a personal flight, the pilot was descending the airplane for landing and added throttle, but the engine did not respond. The pilot decided to make a forced landing, during which the airplane collided with power lines and terrain, resulting in substantial damage to the airplane.

Postaccident examination of the airplane and engine found damage in the engine area that precluded documentation of the throttle cable's full range of travel. Examination of the accident site found no evidence of fuel in the tanks, but fuel did not appear to have leaked from the tanks. The pilot reported that the airplane should have contained at least 10 gallons of fuel. Thus, the pilot's fuel calculations could have been incorrect, resulting in fuel exhaustion. In addition, the airplane was operating in an area conducive for the formation of serious icing at glide power. However, the pilot stated that he applied carburetor heat and enrichened the mixture when he began descending.

The postaccident airplane and engine examination revealed no preimpact anomalies that would have precluded normal operation. As a result, and based on the available evidence, the reason for the partial loss of engine power was most likely the result of fuel exhaustion.

### **Probable Cause and Findings**

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

The partial loss of engine power due to fuel exhaustion. Contributing was the pilot's improper fuel planning.

#### Findings

Personnel issues	Fuel planning - Pilot
Personnel issues	Decision making/judgment - Pilot
Aircraft	Fuel - Fluid level
Environmental issues	Wire - Contributed to outcome

## **Factual Information**

History of Flight	
Enroute-descent	Loss of engine power (partial)
Enroute-descent	Fuel exhaustion (Defining event)

On October 30, 2021, about 1910 central daylight time, a Cessna 177 airplane, N29615, was substantially damaged when it was involved in an accident near Parker County Airport (WEA), Weatherford, Texas. The pilot and four passengers were not injured. The airplane was operated under Title 14 *Code of Federal Regulations* Part 91 as a personal flight.

The flight departed from Guthrie-Edmond Regional Airport (GOK), Guthrie, Oklahoma, about 1733 and was destined for WEA. The pilot stated that the flight was uneventful until the airplane was descending from 10,500 ft mean sea level for landing. At that time, engine power was reduced, carburetor heat was applied, the mixture was enrichened, and the pilot "cleared" the engine by adding and reducing power periodically. The pilot reported that the descent was then "entirely normal" until the last 15 to 20 seconds of flight. The pilot stated that he added "a slight amount" of power, but the engine did not respond. The pilot attempted to restore engine power but was unsuccessful. While maneuvering for a forced landing, the airplane collided with power lines and terrain, resulting in substantial damage to the fuselage, right wing, and vertical stabilizer. The pilot reported that a sudden loss of engine power (stop or change in rpm) did not occur and that the engine "simply stopped responding to throttle inputs."

Postaccident examination of the accident site found that the airplane tanks did not appear to contain fuel and that fuel had not leaked from the tanks. The pilot reported that the airplane should have contained at least 10 gallons of fuel.

Postaccident examination of the airplane and engine was conducted. Accident damage to the engine section prevented documentation of the throttle cable's full range of travel. The cabling remained properly attached to the carburetor, and no restriction to the throttle arm was noted. No preimpact anomalies were found with the airframe or engine.

The pilot mentioned that carburetor icing could have caused the loss of engine power during the accident flight. A review of the Carburetor Icing Probability Chart located in the Federal Aviation Administration's Special Airworthiness Information Bulletin CE-09-35, Carburetor Icing Prevention, dated June 30, 2009, showed that the conditions in which the airplane was operating were conducive to the formation of serious icing at glide power.

#### **Pilot Information**

Certificate:	Private	Age:	44,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	None	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	December 1, 2020
Occupational Pilot:	No	Last Flight Review or Equivalent:	February 29, 2020
Flight Time:	(Estimated) 1600 hours (Total, all aircraft), 253 hours (Total, this make and model), 1560 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N29615	
Model/Series:	177	Aircraft Category:	Airplane	
Year of Manufacture:	1968	Amateur Built:		
Airworthiness Certificate:	Normal	Serial Number:	17700993	
Landing Gear Type:	Tricycle	Seats:	4	
Date/Type of Last Inspection:	July 21, 2021 Annual	Certified Max Gross Wt.:	2350 lbs	
Time Since Last Inspection:	15.9 Hrs	Engines:	1 Reciprocating	
Airframe Total Time:	2262.4 Hrs at time of accident	Engine Manufacturer:	Lycoming	
ELT:	Installed	Engine Model/Series:	O-360-A1A	
Registered Owner:	SHERMAN DENNIS E	Rated Power:	180 Horsepower	
Operator:	On file	Operating Certificate(s) Held:	None	

#### Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
<b>Observation Facility, Elevation:</b>	KNFW,608 ft msl	Distance from Accident Site:	
Observation Time:	18:52 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	130°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.88 inches Hg	Temperature/Dew Point:	20°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Guthrie, OK (GOK)	Type of Flight Plan Filed:	None
Destination:	Hudson Oaks, TX	Type of Clearance:	None
Departure Time:	17:33 Local	Type of Airspace:	Class E

## **Airport Information**

Airport:	PARKER COUNTY WEA	Runway Surface Type:	Asphalt
Airport Elevation:	991 ft msl	Runway Surface Condition:	Dry
Runway Used:	17	IFR Approach:	None
Runway Length/Width:	2892 ft / 40 ft	VFR Approach/Landing:	Full stop;Straight-in

## Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	4 None	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	5 None	Latitude, Longitude:	32.747967,-97.67409(est)

#### **Administrative Information**

Investigator In Charge (IIC):	Aguilera, Jason
Additional Participating Persons:	Dwayne Holt; FAA FSDO; Irving, TX
Original Publish Date:	June 8, 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=104257

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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.