Aviation Investigation Final Report

Location:	Tishomingo, Oklahoma	**Accident Number:**	CEN21LA057
Date & Time:	October 24, 2020, 12:00 Local	**Registration:**	N183V
Aircraft:	Cirrus SR22	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	4 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot and three passengers departed on a personal flight in visual conditions. As the airplane approached its destination while at an altitude of about 900 ft above ground level, the pilot received cockpit indications of erratic high engine oil temperature. About 5 seconds after the indications began, the pilot moved the throttle to idle power and likely adjusted the fuel-air mixture.

About 3 seconds after moving the throttle to idle power, the pilot advanced the throttle to a cruise power setting, but the fuel flow and engine power did not increase. The pilot made additional throttle movements, but the fuel flow and engine power did not correspond to throttle movements most likely because the pilot had adjusted the fuel-air mixture toward a lean setting. Thus, the pilot's actions in response to the high engine oil indications led to the loss of engine power. Without engine power, the airplane's airspeed decreased to about 85 knots, and the pilot successfully deployed the airplane's parachute system.

Postaccident examination revealed no anomalies that would have precluded normal engine power. The oil temperature connector and back shell were damaged, with the back shell disconnected from the oil temperature connector. The accident flight was the first after maintenance work during which a crush gasket adjacent to the damaged oil temperature connector was replaced. The oil temperature connector was most likely damaged during this maintenance and resulted in erratic indications of high engine oil temperature during the accident flight.

Probable Cause and Findings

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

The pilot's improper adjustment of the engine mixture control, which resulted in a total loss of engine power. Contributing to the accident was a disconnected oil temperature connector, which was likely damaged during maintenance before the accident flight and provided erratic indications during the flight.

Findings

Personnel issues	Decision making/judgment - Pilot
Aircraft	Instrument wiring - Incorrect service/maintenance
Personnel issues	Understanding/comprehension - Pilot
Personnel issues	Identification/recognition - Pilot

Factual Information

History of Flight

Enroute-descent	Loss of engine power (total) (Defining event)

On October 24, 2020, about 1200 central daylight time, a Cirrus SR22 airplane, N183V, was substantially damaged when it was involved in an accident near Tishomingo, Oklahoma. The pilot and the three passengers sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

During a postaccident interview, the pilot recalled that, while the airplane was descending toward its destination (Atoka Municipal Airport, Atoka, Oklahoma), he was alerted to high oil temperature indications and noted a loss of engine power. The pilot stated that he attempted to restore engine power by adjusting the air-fuel mixture and throttle but was unable to do so. Download of the airplane's remote data module revealed that, while the airplane was approaching its destination at an altitude of about 900 ft above ground level, erratic high engine oil temperatures (from 314°C to 801°C) were recorded for 5 seconds. The engine oil temperature returned to normal for the next 7 seconds, which was followed by erratic high temperatures for the remainder of the flight. According to (source), engine oil temperatures greater than 240°C triggered a flashing red warning cockpit annunciator and an aural chime every 1.5 seconds.

The downloaded data from the remote data module also showed that, about 5 seconds after high oil temperatures began, decreases in fuel flow, manifold pressure, and engine rpm were recorded, which were consistent with throttle movement to idle power. About 3 seconds later, manifold pressure increased, consistent with a throttle increase, but fuel flow indications remained near 3 to 5 gallons per hour. The manifold pressure subsequently decreased and increased twice with no corresponding change in fuel flow.

The pilot then assessed the available locations for a forced landing and determined that the options were unsuitable. As a result, he activated the Cirrus Airframe Parachute System. The downloaded data showed that the parachute activation occurred about 45 seconds after the high oil temperatures began and that the airplane's airspeed at the time of activation was about 85 knots. The airplane descended under the parachute and impacted terrain, resulting in substantial damage to an airframe engine mount.

Postaccident examination of the engine revealed normal mechanical continuity. The fuel inlet filters were clear of debris, and no anomalies were noted with the ignition leads, spark plugs, magnetos, fuel servo, flow divider, or fuel injectors. The oil reservoir was empty, with the several holes in the oil pan due to impact damage.

The oil temperature connector and back shell were damaged, and the back shell was disconnected from the connector. The accident flight was the first flight after maintenance was performed to address high engine oil consumption during previous flights. The logbook entry for this maintenance included replacement of crush gaskets on the oil cooler housing. One of the crush gaskets that was replaced was adjacent to the damaged oil temperature connector.

According to a Federal Aviation Administration Safety Team (FAAST) publication:

> General aviation accidents often result from inappropriate responses to unexpected events. Humans are subject to a "startle response" when they are faced with unexpected emergency situations and may delay action or initiate inappropriate action in response to the emergency. Training and preparation can reduce startle response time and promote more effective and timely responses.

Pilot Information

Certificate:	Private	**Age:**	41,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 3 None	**Last FAA Medical Exam:**	October 19, 2018
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 1, 2018
Flight Time:	379 hours (Total, all aircraft), 296 hours (Total, this make and model), 368 hours (Pilot In Command, all aircraft), 19 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Passenger Information

Certificate:		**Age:**	41,Female
Airplane Rating(s):		**Seat Occupied:**	Right
Other Aircraft Rating(s):		**Restraint Used:**	4-point
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Passenger Information

Certificate:		**Age:**	11,Female
Airplane Rating(s):		**Seat Occupied:**	Rear
Other Aircraft Rating(s):		**Restraint Used:**	4-point
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Passenger Information

Certificate:		**Age:**	8,Male
Airplane Rating(s):		**Seat Occupied:**	Rear
Other Aircraft Rating(s):		**Restraint Used:**	4-point
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Cirrus	**Registration:**	N183V
Model/Series:	SR22	**Aircraft Category:**	Airplane
Year of Manufacture:	2008	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	3125
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	January 25, 2020 Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	65 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1754 Hrs at time of accident	**Engine Manufacturer:**	Continental Motors
ELT:	Installed	**Engine Model/Series:**	IO-550-N
Registered Owner:	Leatherneck Oilfield Service Inc	**Rated Power:**	310 Horsepower
Operator:	Leatherneck Oilfield Service Inc	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KADM,725 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	11:55 Local	**Direction from Accident Site:**	300°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.17 inches Hg	**Temperature/Dew Point:**	10°C / 2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Odessa, TX (KODO)	**Type of Flight Plan Filed:**	None
Destination:	Atoka, OK (KAQR)	**Type of Clearance:**	None
Departure Time:	10:05 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	3 Minor	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	4 Minor	**Latitude, Longitude:**	34.19,-96.6(est)

Administrative Information

Investigator In Charge (IIC):	Folkerts, Michael
Additional Participating Persons:	Melvin Devore; Federal Aviation Administration; Oklahoma City, OK Brad Miller; Cirrus Aircraft; Duluth, MN Richard Beach; Cirrus Owners and Pilots Association; Las Vegas, NV Kurt Gibson; Continental Aerospace Technologies; Mobile, AL
Original Publish Date:	July 7, 2022
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=102279