Aviation Investigation Final Report

Location:	Ashtabula, Ohio	**Accident Number:**	CEN21LA309
Date & Time:	July 6, 2021, 14:45 Local	**Registration:**	N15180
Aircraft:	Titan T-51D	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The intent of the flight was to perform fuel flow and fuel indicator checks on the newly built airplane while taxiing on the ground; however, they were not able to obtain full engine performance on the ground and the pilot elected to take the airplane into the air. After takeoff, while climbing through 200 ft above ground level (agl), the engine lost power. The operator reported that the engine computer circuit breaker had tripped which resulted in the loss of engine power. The pilot attempted to reset the circuit breaker and restart the engine without success. The airplane landed hard on the runway and the left main landing gear collapsed. The left wing sustained substantial damage.

A postaccident examination showed that the oxygen sensors used to tune the engine were left on the engine's cylinder exhaust pipes during the flight. The sensors drew power from the engine's control computer. During the initial climb, the increased electrical demand to run the oxygen sensors at maximum engine power exceeded the 15-ampere limit on the engine's control computer, its circuit breaker to tripped, and the engine lost power.

Probable Cause and Findings

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

The tripped engine control computer circuit breaker caused by an excessive electrical load on the system, which resulted in a complete loss of engine power during the initial climb.

Findings

Aircraft	(general) - Failure
Personnel issues	Aircraft control - Pilot
Aircraft	Pitch control - Not attained/maintained
Aircraft	Angle of attack - Not attained/maintained

Factual Information

History of Flight

Initial climb	Loss of engine power (total) (Defining event)
Emergency descent	Aerodynamic stall/spin

On July 6, 2021, about 1445 central daylight time, a Titan T-51D airplane, N15180, was substantially damaged when it was involved in an accident near Ashtabula, Ohio. The pilot was not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 test flight.

The intent of the flight was to perform fuel flow and fuel indicator checks on the newly-built airplane while taxiing on the ground; however, they were not able to obtain full engine performance on the ground and the pilot elected to take the airplane into the air. After takeoff, while climbing through 200 ft agl, the engine lost power. The pilot reported that the engine computer circuit breaker had tripped and the engine lost power. He attempted to reset the circuit breaker and restart the engine, but the circuit breaker would not reset. The pilot nosed the airplane over to maintain an airspeed of 75 mph and landed on the remaining part of the 5,900-ft runway; however, a high sink rate developed. The airplane landed on the runway hard, and the left main landing gear collapsed. The left wing sustained substantial damage.

The airplane's owner reported that, before the flight, oxygen sensors were installed on the cylinders' exhaust pipes to determine if the engine was running rich or lean. The sensors received their power from the engine computer. After the accident, data from the Garmin flight director showed increased electrical demand during the maintenance engine runs. During these runs, maximum engine power was never attained due to the inability to secure the airplane in place. The sensors were left installed to collect inflight engine performance information. During the initial climb, the increased engine power placed an increased electrical load on the engine's control computer that exceeded its 15-ampere rating which tripped the circuit breaker and resulted in the loss of engine power.

Pilot Information

Certificate:	Commercial	**Age:**	48,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
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 12, 2020
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	October 30, 2019
Flight Time:	(Estimated) 8000 hours (Total, all aircraft), 4000 hours (Total, this make and model), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Titan	**Registration:**	N15180
Model/Series:	T-51D	**Aircraft Category:**	Airplane
Year of Manufacture:	2020	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental light sport (Special)	**Serial Number:**	M12HV6COHK0180
Landing Gear Type:	Retractable - Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	September 25, 2020 Condition	**Certified Max Gross Wt.:**	2250 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	4 Hrs at time of accident	**Engine Manufacturer:**	General Motors
ELT:	Installed, not activated	**Engine Model/Series:**	LS376-495
Registered Owner:	OLESON MYRON D	**Rated Power:**	480
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KHZY,924 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	14:53 Local	**Direction from Accident Site:**	148°
Lowest Cloud Condition:	Few / 5000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	15 knots / 19 knots	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	270°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.02 inches Hg	**Temperature/Dew Point:**	31°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Ashtabula, OH	**Type of Flight Plan Filed:**	None
Destination:	Ashtabula, OH	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class E

Airport Information

Airport:	Northeast Ohio Regional HZY	**Runway Surface Type:**	Asphalt
Airport Elevation:	962 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	27	**IFR Approach:**	None
Runway Length/Width:	5900 ft / 100 ft	**VFR Approach/Landing:**	Forced landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	41.89,-80.79(est)

Administrative Information

Investigator In Charge (IIC):	Lemishko, Alexander
Additional Participating Persons:	Donald Reid; FAA FSDO; Ashtabula, OH
Original Publish Date:	September 20, 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=103439