



Aviation Investigation Final Report

Location:	San Diego, California	Accident Number:	WPR20LA320
Date & Time:	September 24, 2020, 16:00 Local	Registration:	N3617L
Aircraft:	Great Lakes 2T1A	Aircraft Damage:	Substantial
Defining Event:	Unknown or undetermined	Injuries:	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor reported that, during the first takeoff of the day, with the pilot receiving instruction on the flight controls, the engine lost power shortly after takeoff about 350 ft above the runway. The flight instructor took control and established a 75-mph glide and initiated a steep angle-of-bank turn attempting to return to the runway. The flight instructor checked that the throttle, mixture control, and propeller were full forward, and the fuel shutoff was in the ON position. During the descent, the airplane struck a tree then impacted a parking lot adjacent to the airport perimeter. A witness at the airport reported that he heard the engine sputtering and observed it level off about 300 ft above ground level while making a right turn. The engine lost power, the airplane slowed dramatically, and the nose of the airplane started going down. The airplane recovered enough airspeed to bring the nose up just before the collision with a tree north of the runway.

The airplane came to rest upright with significant damage to the engine compartment, and substantial damage to the wings and fuselage. Examination of the engine revealed no evidence of any preaccident mechanical failures or malfunctions that would have precluded normal operation. The reason for the loss of engine power was not determined.

Probable Cause and Findings

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

A loss of engine power for reasons that could not be determined, which resulted in a hard landing off airport.

Findings

Not determined	(general) - Unknown/Not determined
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Factual Information

History of Flight

Initial climb	Unknown or undetermined (Defining event)
Landing	Collision with terr/obj (non-CFIT)

On September 24, 2020, at 1624 Pacific daylight time, a Great Lakes 2T-AI-2, biplane, N3617L, was substantially damaged when it was involved in an accident near San Diego, California. The flight instructor sustained serious injuries and the pilot receiving instruction had minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 instructional flight.

The flight instructor reported that the airplane underwent a preflight and was fueled before the first flight of the day with the pilot receiving instruction. The pilot receiving instruction was on the flight controls for the takeoff and the airplane was climbing at 70-80 mph when he noticed a lack of climb about 350 ft above ground level. The flight instructor took control and started to troubleshoot by checking that the throttle, mixture, and propeller controls were full forward. The fuel shutoff valve was in the ON position. Due to obstructions straight ahead, he initiated a steep turn back to the runway and established a 75-mph glide. The flight instructor saw trees and tried to turn inside of them toward the runway while not departing controlled flight or getting too slow. The airplane subsequently collided with a tree and crashed in a parking lot outside of the airport perimeter. A video surveillance camera captured the airplane in a steep descent after the impact with the tree.

A witness at the airport reported that he heard the engine sputtering and looked to see the airplane on takeoff, level off about 300 ft agl while making a right turn. The airplane slowed dramatically, and the nose of the airplane started going down. By the time the airplane had completed a 180° turn, the nose of the airplane was pitched down about 40°. The airplane recovered enough airspeed to bring the nose up when it hit a tree.

The engine was partially torn from its mounting points and suffered significant impact damage. The exhaust system sustained crush damage, and the fuel servo broke away from the oil sump. The propeller had separated from the crankshaft, about 1 inch aft of the propeller flange. Both blades were intact and straight and did not exhibit evidence of chordwise scratches or leading-edge nicks. The fuel selector valve sustained impact damage and was found in the OFF position; however, fuel was found in the fuel lines and components downstream. The engine and electrically driven fuel pumps were intact.

The crankshaft was rotated, and accessory gear and valve train continuity was established. All eight spark plugs were removed and displayed normal operating signatures.

Magneto-to-engine timing was confirmed, and both magnetos sparked with the impulse coupling. A drill was used to rotate the magnetos to speed, and spark was produced on each remaining undamaged ignition lead.

Examination of the engine and fuel servo revealed no anomalies.

Pilot Information

Certificate:	Airline transport	Age:	49,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	5-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	
Medical Certification:	Class 1 None	Last FAA Medical Exam:	June 25, 2020
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	October 1, 2019
Flight Time:	(Estimated) 11200 hours (Total, all aircraft), 1600 hours (Total, this make and model), 7200 hours (Pilot In Command, all aircraft), 280 hours (Last 90 days, all aircraft), 85 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Pilot-rated passenger Information

Certificate:	Airline transport; Commercial; Flight instructor; Military	Age:	38,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Rear
Other Aircraft Rating(s):	Helicopter; Powered-lift	Restraint Used:	5-point
Instrument Rating(s):	Airplane; Helicopter; Powered-lift	Second Pilot Present:	Yes
Instructor Rating(s):	Powered-lift	Toxicology Performed:	
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	January 10, 2020
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 2476 hours (Total, all aircraft), 4 hours (Total, this make and model), 838 hours (Pilot In Command, all aircraft), 36 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Great Lakes	Registration:	N3617L
Model/Series:	2T1A 2	Aircraft Category:	Airplane
Year of Manufacture:	1978	Amateur Built:	
Airworthiness Certificate:	Aerobatic; Normal	Serial Number:	0815
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	August 24, 2020 Annual	Certified Max Gross Wt.:	1800 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2086 Hrs at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	AEIO-360-B166
Registered Owner:	Association Aircraft	Rated Power:	180
Operator:	Association Aircraft	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KMYF, 417 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	14:53 Local	Direction from Accident Site:	59°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	7 knots / None	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	230°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	29.9 inches Hg	Temperature/Dew Point:	28°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	San Diego, CA	Type of Flight Plan Filed:	None
Destination:	San Diego, CA	Type of Clearance:	None
Departure Time:		Type of Airspace:	Class D

Airport Information

Airport:	Montgomery-Gibbs Executive Airport MYF	Runway Surface Type:	Asphalt
Airport Elevation:	427 ft msl	Runway Surface Condition:	Dry
Runway Used:	28R	IFR Approach:	None
Runway Length/Width:	4598 ft / 150 ft	VFR Approach/Landing:	Forced landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Serious, 1 Minor	Latitude, Longitude:	32.814278,-117.14122(est)

Administrative Information

Investigator In Charge (IIC):	Bledsoe, James
Additional Participating Persons:	James Treiber; FAA SAN FSDO; San Diego, CA Oded Moore; FAA SAN FSDO; San Diego, CA
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.nts.gov/Docket?ProjectID=102051

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](#).