



Aviation Investigation Final Report

Location: Detroit, Michigan Accident Number: CEN23LA214

Date & Time: May 31, 2023, 20:30 Local Registration: N316SR

Aircraft: PROGRESSIVE AERODYNE INC SEAREY LSA Aircraft Damage: Substantial

Defining Event: Fuel exhaustion **Injuries:** 2 None

Flight Conducted Under: Part 91: General aviation - Personal

Analysis

The airplane was returning to the departure airport after a local training flight when the engine lost all power. Restart attempts were not successful. The pilot reported that he glanced at the fuel gauge and it indicated ¼ full. During the forced landing the airplane contacted trees, which resulted in substantial damage to the left wing.

Examination of the airplane after the accident revealed that only a trace amount of fuel was visible in the semi-transparent plastic fuel tank; the tank did not appear to be breached. After the airplane was removed from the accident site and leveled on a trailer used for recovery, the fuel gauge read empty. A subsequent engine run was performed where fuel was added to the tank and the engine started. The engine was operated from idle to full throttle and no anomalies were detected during the engine run.

Based on the pilot's report, the flight duration was about 2.5 hours; however, recorded flight track data indicated the flight actually lasted 3 hours.

Available information indicates the flight crew failed to assure there was an adequate fuel supply for the flight, which resulted in fuel exhaustion and a complete loss of engine power.

Probable Cause and Findings

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

A loss of engine power due to fuel exhaustion that resulted from the pilots' inadequate preflight planning.

Findings

Personnel issues	Fuel planning - Flight crew
Aircraft	Fuel - Fluid level

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Factual Information

History of Flight

Approach-VFR pattern base	Fuel exhaustion (Defining event)
Landing	Collision during takeoff/land

On May 31, 2023, about 2030 eastern daylight time, a Progressive Aerodyne Inc Searey LSA, N316SR, was substantially damaged when it was involved in an accident near Detroit, Michigan. The pilot and certificated flight instructor were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The airplane was inbound for landing at the Coleman A Young Municipal Airport (DET), Detroit, Michigan, and the pilot was instructed to report a 2-mile left base for runway 15. The tower controller radioed for a progress report and received no response. The pilot later called the tower to report that the airplane's engine lost power and he landed in a residential neighborhood between two garages. During the forced landing the airplane struck trees, which resulted in substantial damage to the left wing.

The pilot/owner stated that the airplane had not flown since October 2020, and he had the mechanic that had constructed the airplane perform a condition inspection that was completed on May 26, 2023. The accident flight was an "instruction/currency" flight with a flight instructor. According to the pilot's report, the flight originated about 1800. During the return portion of the flight, about 7 miles from the airport, they contacted the DET air traffic control and were advised to expect a visual approach for runway 15. Shortly afterward the airplane's engine stopped producing power. Attempts to restart the engine were not successful. The restart attempts included activating the auxiliary fuel pump. He noted that he glanced at the fuel gauge and it indicated ¼ full. During the restart attempts the flight instructor assumed control of the airplane while the pilot attempted to restart the engine.

Automatic dependent surveillance – broadcast (ADS-B) data recorded the airplane when it departed DET at 1730 and the final position was recorded at 2030, indicating that the airplane was aloft for 3 hours.

Examination of the airplane after the accident revealed that only a trace amount of fuel was visible in the semi-transparent plastic fuel tank; the tank did not appear to be breached. After the airplane was removed from the accident site and leveled on a trailer used for recovery the fuel gauge read empty. A subsequent engine run was performed where fuel was added to the tank and the engine started. The engine was operated from idle to full throttle and no anomalies were detected during the engine run.

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Pilot Information

Certificate:	Airline transport; Commercial; Private	Age:	57,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	January 20, 2023
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	2984 hours (Total, all aircraft), 66 hours (Total, this make and model), 1967 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Flight instructor Information

Commercial; Flight instructor	Age:	72,Male
Single-engine land; Single-engine sea	Seat Occupied:	Right
Glider	Restraint Used:	3-point
Airplane	Second Pilot Present:	
Airplane single-engine	Toxicology Performed:	
Class 2 With waivers/limitations	Last FAA Medical Exam:	
UNK	Last Flight Review or Equivalent:	
7100 hours (Total, all aircraft), 8 hou aircraft)	urs (Total, this make and model), 69 ho	ours (Last 90 days, all
	Single-engine land; Single-engine sea Glider Airplane Airplane single-engine Class 2 With waivers/limitations UNK 7100 hours (Total, all aircraft), 8 hours	Single-engine land; Single-engine sea Glider Restraint Used: Airplane Second Pilot Present: Airplane single-engine Toxicology Performed: Class 2 With waivers/limitations Last FAA Medical Exam: UNK Last Flight Review or Equivalent: 7100 hours (Total, all aircraft), 8 hours (Total, this make and model), 69 hours

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Aircraft and Owner/Operator Information

Aircraft Make:	PROGRESSIVE AERODYNE INC	Registration:	N316SR
Model/Series:	SEAREY LSA	Aircraft Category:	Airplane
Year of Manufacture:	2016	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	1064
Landing Gear Type:	Retractable - Tailwheel; Amphibian	Seats:	2
Date/Type of Last Inspection:	May 26, 2023 Condition	Certified Max Gross Wt.:	1430 lbs
Time Since Last Inspection:	6 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	400 Hrs	Engine Manufacturer:	ROTAX
ELT:	Installed	Engine Model/Series:	912ULS SERIES
Registered Owner:	On file	Rated Power:	100 Horsepower
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:	KDET,623 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	20:53 Local	Direction from Accident Site:	160°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	120°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.07 inches Hg	Temperature/Dew Point:	26°C / 9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Detroit, MI	Type of Flight Plan Filed:	None
Destination:	Detroit, MI	Type of Clearance:	VFR
Departure Time:		Type of Airspace:	Class D

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Airport Information

Airport:	COLEMAN A YOUNG MUNI DET	Runway Surface Type:	Asphalt
Airport Elevation:	625 ft msl	Runway Surface Condition:	Dry
Runway Used:	15	IFR Approach:	None
Runway Length/Width:	5092 ft / 100 ft	VFR Approach/Landing:	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	42.409328,-83.010174(est)

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Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Dennis Heinze; FAA; Detroit, MI
Original Publish Date:	April 18, 2024
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=192282

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.

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