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

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.

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

Certificate:	Commercial; Flight instructor	**Age:**	72,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Glider	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	7100 hours (Total, all aircraft), 8 hours (Total, this make and model), 69 hours (Last 90 days, all aircraft)		

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

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)

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