Aviation Investigation Final Report

Location:	Mesquite, Texas	**Accident Number:**	CEN20LA134
Date & Time:	March 29, 2020, 15:18 Local	**Registration:**	N151JD
Aircraft:	MUSE P51D	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Witnesses reported that the pilot took off and turned to a right crosswind in the traffic pattern, followed shortly thereafter by a turn to downwind. The airplane then entered a gradually steepening right turn before transitioning to a steep nose down attitude which continued to impact with terrain.

Automated Dependent Surveillance – Broadcast (ADS-B) data revealed that the airplane entered a right traffic pattern after takeoff and leveled off about 1,800 ft mean sea level (msl) on a crosswind leg before beginning a turn to a downwind leg. The airplane subsequently entered a steep, descending right turn until impact. The average descent rate over the last 6 seconds of the flight was about 6,000 ft per minute.

The airplane was destroyed by impact forces and the postaccident fire. A postaccident examination of the airframe and engine did not reveal any anomalies consistent with a preimpact failure or malfunction. However, the examination was limited by the extent of the impact and postimpact fire damage. For the accident flight, the pilot had planned to proceed to the practice area to conduct airwork; however, he elected to remain in the airport traffic pattern for unknown reasons. Full right rudder trim was set before takeoff in order to counteract engine torque.

Based on the available information, the pilot inadvertently entered an aerodynamic stall from which he was unable to recover. The yaw induced by the full right rudder trim aggravated the stall and made recovery more difficult. The reason for the loss of control could not be determined with the available information.

Probable Cause and Findings

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

The pilot’s inadvertent exceedance of the airplane’s critical angle of attack for undetermined reasons, which resulted in an aerodynamic stall, loss of control, and subsequent impact with terrain.

Findings

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

Factual Information

History of Flight

Approach-VFR pattern downwind	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On March 29, 2020, at 1518 central daylight time, a Muse P51D airplane, N151JD, was destroyed when it was involved in an accident near Mesquite, Texas. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

Witnesses reported that the pilot took off and turned to a right crosswind in the traffic pattern, followed shortly thereafter by a turn to downwind. The airplane then entered a gradually steepening right turn before transitioning to a steep nose down attitude which continued until impact with terrain.

A review of Automated Dependent Surveillance – Broadcast (ADS-B) data revealed that the airplane entered a right traffic pattern after takeoff and leveled off about 1,800 ft mean sea level (msl) on crosswind before beginning a turn to downwind. About 1518:47, the airplane entered a descending right turn from about 1,700 ft msl. The final data point was recorded at 1518:53; the altitude was about 900 ft msl. The average descent rate over the last 6 seconds of data was approximately 8,000 ft per minute.

A postaccident examination of the airframe and engine did not reveal any anomalies consistent with a preimpact failure or malfunction. However, the examination was limited by the extent of the impact and postimpact fire damage.

Toxicology testing performed at the Federal Aviation Administration Forensic Sciences Laboratory found no drugs of abuse.

The owner/builder reported the accident occurred during the third flight of the airplane. The plan was for the pilot to conduct airwork in the local area and to gather data to assist in determining airplane fuel consumption. After the second flight, the pilot informed the builder that he had inadvertently moved the fuel selector to the OFF position while attempting to change tanks. He was able to correct the situation and had no further difficulties. A friend of the pilot reported that the pilot had cut the second flight short because continuous right rudder input was required. For the accident flight, the pilot took off with full right rudder trim to counter act the right turning tendency.

Pilot Information

Certificate:	Private	**Age:**	72,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Single
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	BasicMed	**Last FAA Medical Exam:**	October 7, 2019
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 3, 2018
Flight Time:	1814 hours (Total, all aircraft), 1.3 hours (Total, this make and model), 1807 hours (Pilot In Command, all aircraft), 4.8 hours (Last 90 days, all aircraft), 2.2 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	MUSE	**Registration:**	N151JD
Model/Series:	P51D	**Aircraft Category:**	Airplane
Year of Manufacture:	2016	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	F869
Landing Gear Type:	Retractable - Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	March 1, 2020 Condition	**Certified Max Gross Wt.:**	2490 lbs
Time Since Last Inspection:	2 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2 Hrs at time of accident	**Engine Manufacturer:**	Chevrolet
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	LS1
Registered Owner:	On file	**Rated Power:**	350 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:	HQZ,447 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	20:19 Local	**Direction from Accident Site:**	270°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.17 inches Hg	**Temperature/Dew Point:**	21°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Mesquite, TX (HQZ)	**Type of Flight Plan Filed:**	None
Destination:	Mesquite, TX (HQZ)	**Type of Clearance:**	None
Departure Time:	20:18 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Mesquite Metro HQZ	**Runway Surface Type:**	Concrete
Airport Elevation:	447 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	36	**IFR Approach:**	None
Runway Length/Width:	6000 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	32.761943,-96.515556

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	Daniel Montie; FAA Flight Standards; Irving, TX
Original Publish Date:	March 11, 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=101126