Aviation Investigation Final Report

Location:	Arcola, Texas	**Accident Number:**	CEN16FA094
Date & Time:	February 1, 2016, 10:15 Local	**Registration:**	N323BR
Aircraft:	COSTRUZIONI AERONAUTICHE TECNA P92 ECHO SUPER	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor and a student pilot, who had flown about 5 flight hours with the instructor, were conducting an instructional flight in the light sport airplane. The student pilot reported that he was conducting the takeoff with the instructor assisting, and about 200 ft. above ground level, the airplane began to drift off the runway centerline. The student said that he attempted to correct, but it felt like the airplane was losing engine power and the nose was dropping. He added that he was pulling back on the controls and that the instructor was also pulling back, in an attempt to recover. A witness reported seeing the airplane climbing after takeoff in a nose high attitude when the left wing dropped, and the airplane entered a descending left turn. The airplane then impacted two parked airplanes on a ramp adjacent to a parallel taxiway. A postcrash fire consumed the majority of the airplane. Due to the fire damage, only a limited examination could be conducted; however, no preimpact abnormities were noted with the engine and airframe. The circumstances of the accident are consistent with a power-on departure stall.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The student pilot's loss of control after exceeding the airplane's critical angle-of-attack, which lead to a power-on, aerodynamic departure stall. Contributing to the accident was the flight instructor's inadequate oversight of the student pilot.

Findings

Personnel issues	Aircraft control - Student/instructed pilot
Aircraft	Angle of attack - Not attained/maintained
Personnel issues	Delayed action - Instructor/check pilot

Factual Information

History of Flight

Takeoff	Aerodynamic stall/spin
Takeoff	Loss of control in flight (Defining event)

On February 1, 2016, about 1015 central standard time, a Tecnam P92 light sport airplane, N323BR, impacted terrain near Arcola, Texas. The flight instructor was fatally injured; the student pilot was seriously injured; and the airplane was destroyed. The airplane was registered to and operated by Houston Light Sport Aviation, LLC, under the provisions of *14 Code of Federal Regulations Part 91* as an instructional flight. Visual meteorological conditions prevailed, and the airplane was not on a flight plan. The local flight was originating from the Houston Southwest Airport (AXH), Houston, Texas, at the time of the accident.

A witness reported that the airplane departed on runway 9, and when it was about midfield, the airplane was in a nose-high attitude. The airplane's left wing dropped, and the airplane entered a descending left turn.

The airplane then collided with two airplanes that were parked by a hangar adjacent to a parallel taxiway. The accident airplane came to rest on one of the parked airplanes, and a post-crash fire consumed the majority of the accident airplane and one of the parked airplanes.

The student pilot was interviewed while he was recovering in the hospital. He stated that he and the instructor completed some ground school training. The plan was then to conduct traffic pattern work including downwind and base legs. Before taxiing out, they saw an airplane depart from runway 27; however, they noted that, based on the current wind condition, the runway in use should have been runway 9. The student pilot added that he was conducting the takeoff with the instructor assisting. He applied full power, and, about 200 ft above ground level, the airplane started to drift left. He attempted to correct the drift to stay on the runway centerline. According to the student pilot, it felt like the engine was losing power, and the nose was dropping. He stated that he was pulling back on the controls and that the instructor was also pulling back. At that point, he knew they were going to crash, and there was nothing they could do to prevent it.

Flight instructor Information

Certificate:	Commercial; Flight instructor	**Age:**	68,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):		**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	July 27, 2015
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	6233 hours (Total, all aircraft), 6 hours (Total, this make and model), 5373 hours (Pilot In Command, all aircraft)		

Student pilot Information

Certificate:	None	**Age:**	20,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	None	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	5 hours (Total, all aircraft), 5 hours (Total, this make and model)		

The flight instructor held a commercial pilot certificate with ratings for airplane single-engine land, airplane multi-engine land, and instrument airplane. Additionally, he held a ground instructor certificate and a flight instructor certificate with airplane single- and multi-engine and instrument airplane ratings. The flight instructor was issued a special issuance first class medical certificate on July 27, 2015. At the time of the exam, the instructor reported he had 6,161.1 total flight hours and 30.5 hours in the previous six months. A review of flight club records revealed that he had 6 flight hours in the Tecnam P92.

The student pilot had four previous flights with the flight instructor and did not hold a student pilot certificate. A review of club records revealed that the student had approximately 5.1 total flight hours.

Aircraft and Owner/Operator Information

Aircraft Make:	COSTRUZIONI AERONAUTICHE TECNA	**Registration:**	N323BR
Model/Series:	P92 ECHO SUPER	**Aircraft Category:**	Airplane
Year of Manufacture:	2006	**Amateur Built:**	
Airworthiness Certificate:	Special light-sport (Special)	**Serial Number:**	986
Landing Gear Type:	Tricycle	**Seats:**	
Date/Type of Last Inspection:	October 22, 2015 Condition	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2385.5 Hrs as of last inspection	**Engine Manufacturer:**	Rotax
ELT:		**Engine Model/Series:**	912
Registered Owner:	Houston LightSport Aviation, LLC	**Rated Power:**	100 Horsepower
Operator:	Houston LightSport Aviation, LLC	**Operating Certificate(s) Held:**	None

The accident airplane was a Tecnam P92, a high-wing, single-engine, light sport airplane, with fixed landing gear. It was powered by a 100-horsepower, 4-cylinder, reciprocating Rotax 912 engine, and a fixed pitch propeller. The airplane's airworthiness certificate is in the Special, Light Sport (S-LSA) category. The fuselage was a semi-monocoque construction with a mixture of thin aluminum covered tube structure. A review of the airplane's maintenance records revealed that the last condition inspection was completed October 22, 2015, at an airplane and engine total time of 2,385.57 hours.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KAXH	**Distance from Accident Site:**	
Observation Time:	10:15 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 1000 ft AGL	**Visibility**	7 miles
Lowest Ceiling:	Overcast / 2000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	120°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	20°C / 18°C
Precipitation and Obscuration:			
Departure Point:	Houston, TX	**Type of Flight Plan Filed:**	None
Destination:	Houston, TX	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	

At 1015, the automated weather observation facility (AWOS) located at AXH recorded, wind 120 at 6 knots, 7 miles visibility, scattered clouds at 1,500 ft with a ceiling at 2,000 ft, temperature of 68 F, dew point 64 F, and an altimeter setting of 29.88 inches of mercury.

Airport Information

Airport:	Houston Southwest KAXH	**Runway Surface Type:**	
Airport Elevation:	70 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	09	**IFR Approach:**	None
Runway Length/Width:	5002 ft / 100 ft	**VFR Approach/Landing:**	None

The Houston Southwest Airport (AXH) is a public-use, non-towered airport, located 15 miles southwest of Houston, Texas. Pilots use ommon raffic dvisory requency (CTAF) for communications. The airport has a single asphalt runway; runway 9/27, measuring 5,002 ft. long by 100 ft. wide. The airport is at an elevation of 68.9 ft mean sea level and has an AWOS station located on the field.

Wreckage and Impact Information

Crew Injuries:	1 Fatal, 1 Serious	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Serious	**Latitude, Longitude:**	29.506944,-95.4775

The on-site examination of the wreckage revealed the airplane impacted a parked Cessna 172, and came to rest on a Gulfstream American AA5A airplane. A survey of the area did not reveal any ground scars between the runway and the ramp area where the airplane impacted the Cessna. A postcrash fire consumed much of the AA5A, the accident airplane, and limited the examination of the accident airplane.

The wreckage came to rest facing the runway. The right wing had extensive thermal damage with the inboard section of the wing and flap consumed by the fire. The left wing was consumed by the fire and its remnants were indistinguishable from the remnants of the AA5A. The main cabin was consumed by fire with only a tubular type frame remaining; the empennage had thermal damage but was largely intact. The engine compartment and forward fuselage were mostly consumed by fire. The propeller and nose cone were thermally damaged, and only a piece of the two-bladed propeller was located outside the fire damage area.

Aileron continuity was established at each of the wing bellcranks; however, sections of the push-pull tubing were consumed by the fire. Additionally, the control cable connection points were separated; each fastener was either consumed or melted by the fire. The elevator push-pull tube was consumed forward of the empennage. Rudder control continuity was established to the cockpit rudder pedals. The flap actuator position was compared to an exemplar actuator on a similar airplane; the actuator position corresponded to a flap retracted position.

The firewall and part of the instrument panel were consumed by the fire. The engine also received extensive fire damage. The engine intake/carburetors and fuel pump were in place but were partly consumed by the fire. Fire damage prevented the engine from being rotated by hand. The engine's propeller speed reduction unit (PSRU) was dissembled; a visual inspection revealed no discrepancies with the internal gears. The top sparkplugs were removed and exhibited light colored combustion deposits and the electrodes exhibited normal signatures.

No preimpact abnormalities were noted during the airframe or engine examinations.

Medical and Pathological Information

The Galveston County Medical Examiner's Office, Texas City, Texas, conducted an autopsy on the

flight instructor. The cause of death was determined to be "blunt force trauma and thermal injury".

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, conducted toxicological testing on the flight instructor. The specimens were not tested for cyanide. The tests were negative for ethanol and carbon monoxide. The tests were positive for lipizide in urine and blood, and alicylate in urine.

Glipizide is a prescription medication typically used to treat type 2 diabetes.

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Glenn Longnion; FAA FSDO; Houston, TX
Original Publish Date:	April 25, 2017
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=92663