Aviation Investigation Final Report

Location:	Hillsboro, Oregon	**Accident Number:**	WPR18LA005
Date & Time:	October 5, 2017, 14:20 Local	**Registration:**	N7892P
Aircraft:	Piper PA 24-250	**Aircraft Damage:**	Substantial
Defining Event:	Aerodynamic stall/spin	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

As the student pilot was approaching the runway for a practice soft-field, full-stop landing, the airplane descended faster than expected and the nose pitched up. The airplane's airspeed was slow, and the flight instructor called for a go-around. During the go-around, the flight instructor told the student pilot to apply power faster. Subsequently, the airplane exceeded its critical angle of attack and aerodynamically stalled, settled toward the ground, struck the ground hard short of the runway, and then bounced onto the runway, sustaining substantial damage to the fuselage and wings.

The accident might have been avoided if the flight instructor had intervened or taken control of the airplane earlier in the sequence.

Probable Cause and Findings

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

The student's pilot’s failure to maintain adequate airspeed during approach and subsequent exceedance of the critical angle of attack during a go-around, which resulted in an aerodynamic stall and a subsequent hard landing. Contributing to the accident was the flight instructor's delayed remedial action during the attempted go-around.

Findings

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

Factual Information

History of Flight

Approach-VFR go-around	Miscellaneous/other
Approach-VFR pattern final	Attempted remediation/recovery
Landing-flare/touchdown	Aerodynamic stall/spin (Defining event)
Landing-flare/touchdown	Landing area undershoot
Landing-flare/touchdown	Hard landing

On October 5, 2017, about 1420 Pacific daylight time, a Piper PA-24-250, airplane, N7892P, was substantially damaged when it was involved in an accident at Hillsboro, Oregon. The flight instructor and student pilot were seriously injured. The airplane was operated by Twin Oaks Airpark Inc. as a Title 14 *Code of Federal Regulations* Part 91 instructional flight.

The flight instructor reported that, during a practice soft field full stop landing, as the student pilot was approaching the runway, the airplane descended quicker than expected. As the airplane got closer to the runway, the airspeed was decreasing, the nose angle was increasing and he called out to the student "airspeed." A go-around was called and during the go-around, the airplane aerodynamically stalled, and settled towards the runway. The airplane struck short of the runway hard, and then bounced onto the runway.

According to the student pilot the soft field landing had a shallower glide path than a normal landing. He stated that while flying the approach, he noticed that the airspeed was about 15 knots slow. Subsequently, the flight instructor called for him to go-around. During the go-around, the flight instructor told him to apply the power quicker. As the airplane approached the flare, he felt the airplane settle towards the ground in an aerodynamic stall. Furthermore, he stated that he noticed no wind (crosswind or downdraft) on final.

Both wings and the fuselage were substantially damaged.

The pilot reported no preaccident mechanical failure or malfunction with the airplane that would have precluded normal operation.

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:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	February 24, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 18, 2017
Flight Time:	(Estimated) 7056 hours (Total, all aircraft), 168 hours (Total, this make and model), 6288 hours (Pilot In Command, all aircraft), 131 hours (Last 90 days, all aircraft), 52 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Commercial	**Age:**	39,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	3-point
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	February 24, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	May 9, 2017
Flight Time:	(Estimated) 2161 hours (Total, all aircraft), 13 hours (Total, this make and model), 1784 hours (Pilot In Command, all aircraft), 22 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N7892P
Model/Series:	PA 24-250 250	**Aircraft Category:**	Airplane
Year of Manufacture:	1962	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-3121
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	August 15, 2019 100 hour	**Certified Max Gross Wt.:**	2899 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	7081.9 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	C91A installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-540 SERIES
Registered Owner:	On file	**Rated Power:**	250 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:	KHIO,204 ft msl	**Distance from Accident Site:**	7 Nautical Miles
Observation Time:	14:53 Local	**Direction from Accident Site:**	358°
Lowest Cloud Condition:	Scattered / 8000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	220°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.06 inches Hg	**Temperature/Dew Point:**	22°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hillsboro, OR (7S3)	**Type of Flight Plan Filed:**	None
Destination:	Hillsboro, OR (7S3)	**Type of Clearance:**	None
Departure Time:	13:15 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	STARK'S TWIN OAKS AIRPARK 7S3	**Runway Surface Type:**	Asphalt
Airport Elevation:	170 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	02	**IFR Approach:**	None
Runway Length/Width:	2465 ft / 48 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	2 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	45.428333,-122.942222(est)

Administrative Information

Investigator In Charge (IIC):	Nixon, Albert
Additional Participating Persons:	Jason Lawver; Federal Aviaiton Administration; Hillsboro, OR
Original Publish Date:	November 19, 2020
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=96155