National Transportation Safety Board
Aviation Accident Preliminary Report

Location:	Toughkenamon, PA	**Accident Number:**	ERA16LA200
Date & Time:	06/01/2016, 0900 EDT	**Registration:**	N83547
Aircraft:	AERONCA 7AC	**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General Aviation - Instructional		

On June 1, 2016, about 0900 eastern daylight time, an Aeronca 7AC, N83547, was substantially damaged after impacting an aircraft hangar following a total loss of engine power during a go-around at New Garden Airport (N57), Toughkenamon, Pennsylvania. The flight instructor and a student pilot received minor injuries. Visual meteorological conditions prevailed and no flight plan was filed for the local instructional flight operated under the provisions of 14 Code of Federal Regulations Part 91.

According to the student pilot, they were practicing takeoffs and landings on the grass parallel to runway 6, for about 1 hour when on the downwind leg of the traffic pattern, the flight instructor directed him to demonstrate a simulated engine failure The student pilot initiated a simulated forced landing which included a steep turn to the base and then final legs of the traffic pattern. The airplane was about one-quarter of the way down the runway, still over the grass, when he initiated go-around. The flight instructor then told him to move over to the center of the paved runway. At this point the engine sputtered and then lost power. The flight instructor took over the flight controls and made a left turn about 100 feet above the ground with the intent of flying over a hanger. The student pilot added that the engine "was now completely off."

According to the flight instructor, he and the student pilot were flying for about 30 minutes when he initiated a simulated engine out procedure. The student pilot maneuvered the airplane for the grass parallel to the runway, and commenced a go-around when the airplane was about 25 feet above the ground. The airplane was approximately 200 feet above the ground when the engine quit, momentarily sputtered, and then went silent. He recalled checking the magnetos, carburetor heat and fuel lever, which all appeared to be in proper position.

The flight instructor considered landing options, and noted that a forward trajectory had more dangers and obstacles, such as construction traffic, vehicles, a shallow ravine, electric wires and a busy road. He took the controls from the student pilot and turned left 90 degrees, positioning the airplane in a trajectory over a hangar for a touchdown and rollout on the grass in an uphill direction to dissipate speed and energy. As the turn progressed, the flight instructor realized that they would most likely not clear the top of the hangar and that would be a worse situation. At that point the airplane was losing altitude rapidly and heading toward the

hangar door. He used the last movement of the stick control to place the airplane into a 45-degree nose up position to have the engine penetrate the metal door of the hangar before the fuselage.

According to a Federal Aviation Administration (FAA) inspector, the airplane came to rest upright inside the hangar after penetrating the hangar wall. The fabric covering of the airplane displayed multiple tears and punctures, the left main landing gear was displaced aft and was collapsed against the bottom of the fuselage, and the right main landing gear was displaced forward and collapsed next to the right side of the fuselage. Both the left and right wing spars were broken and the wings had folded aft just outboard of their mounting locations at the breaks in the spars. The horizontal stabilizers, elevators, vertical stabilizer, and rudder, displayed crush and compression damage. Control continuity was established from the flight control surfaces to the rudder pedals, and control sticks in the cockpit. The front of the propeller spinner was crushed. One propeller blade was bent back under the engine, and the other propeller blade was straight. Neither propeller blade showed any evidence of S-bending, leading edge gouging, or chordwise scratching. The wreckage was retained for further examination.

According to FAA and pilot records, the flight instructor held an airline transport pilot certificate with ratings for airplane multiengine land, and rotorcraft-helicopter, with commercial privileges for airplane single-engine land, and instrument helicopter, and a type rating for the BH-206. He also held a flight instructor certificate with ratings for airplane single and multiengine, instrument airplane, and rotorcraft-helicopter. His most recent FAA third-class medical certificate was issued on August 12, 2014. He reported that he had accrued approximately 10,000 total hours of flight experience, 200 hours of which were in the accident airplane make and model.

According to FAA and pilot records, the student pilot held a student pilot certificate which was issued on December 15, 2015. He reported that he had accrued 279 total hours of flight experience, 180 of which were in the accident airplane make and model.

According to FAA and airplane maintenance records, the airplane was manufactured in 1946. The airplane's most recent annual inspection was completed on March 28, 2015. At the time of the inspection, the airplane had accrued approximately 6,410 total hours of operation.

Aircraft and Owner/Operator Information

Aircraft Make:	AERONCA	**Registration:**	N83547
Model/Series:	7AC NO SERIES	**Aircraft Category:**	Airplane
Amateur Built:	No		
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	MQS, 660 ft msl	**Observation Time:**	0855 EDT
Distance from Accident Site:	10 Nautical Miles	**Temperature/Dew Point:**	22°C / 17°C
Lowest Cloud Condition:	Clear	**Wind Speed/Gusts, Direction:**	Calm / ,
Lowest Ceiling:	None	**Visibility:**	10 Miles
Altimeter Setting:	30.11 inches Hg	**Type of Flight Plan Filed:**	None
Departure Point:	Toughkenamon, PA (N57)	**Destination:**	Toughkenamon, PA (N57)

Wreckage and Impact Information

Crew Injuries:	2 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Minor	**Latitude, Longitude:**	39.830556, -75.780556 (est)

Administrative Information

Investigator In Charge (IIC):	Todd G Gunther
Additional Participating Persons:	Mike Bauer; FAA / FSDO; Philadelphia, PA
Note:	The NTSB did not travel to the scene of this accident.