



Aviation Investigation Final Report

Location:	Allentown, Pennsylvania	Accident Number:	ERA14LA133
Date & Time:	February 16, 2014, 14:40 Local	Registration:	N931JS
Aircraft:	Piper PA-30	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor reported that he simulated a right engine failure, which required the pilot receiving instruction to perform a single-engine, full-stop landing. The pilot receiving instruction maintained the correct airspeed on final but flared the airplane a little high, which resulted in a "solid touchdown." Shortly after touchdown, while the flight instructor was guarding the rudder pedals with his feet, the airplane veered heavily left, which he attempted to correct with full right rudder and brake. Runway skid marks indicated that the airplane yawed left as it continued to veer left and then collide with a snow bank off the left side of the runway. Postaccident examination of the nose landing gear steering system and the fractured left main landing gear trunnion revealed no evidence of preimpact failures or malfunctions that would have precluded normal operation. No mechanical reason for the loss of directional control was identified during postaccident examination.

Probable Cause and Findings

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

The flight instructor's failure to maintain directional control during the landing.

Findings

Aircraft	Directional control - Not attained/maintained
Personnel issues	Aircraft control - Instructor/check pilot

Factual Information

History of Flight

Landing-landing roll	Loss of control on ground (Defining event)
Landing-landing roll	Runway excursion
Landing-landing roll	Collision with terr/obj (non-CFIT)

On February 16, 2014, about 1440 eastern standard time, a Piper PA-30, N931JS, experienced a loss of directional control during landing and collided with a snowbank at Allentown Queen City Municipal Airport (XLL), Allentown, Pennsylvania. The certified flight instructor (CFI) and commercial rated student were not injured. The airplane was substantially damaged. The airplane was registered to Hamilton Services Group, Inc., and was operated by Gateway Aviation, Ltd., under the provisions of 14 Code of Federal Regulations (CFR) Part 91 as an instructional flight. Visual meteorological conditions prevailed at the time and no flight plan was filed. The flight originated about 5 minutes earlier from Lehigh Valley International Airport (ABE), Allentown, Pennsylvania.

The CFI stated that the purpose of the flight was for the student to practice simulated single engine failures during various phases of flight. The flight departed from XLL about 1330, and flew to the practice area where the student performed airwork. The flight then proceeded to ABE, where the student successfully performed a simulated single engine full-stop landing. While taxiing for takeoff, the airplane encountered slush. The flight departed ABE returning to XLL where the flight joined the upwind leg for runway 25. The CFI reported that the wind at the time was approximately 5 knots within 20 degrees of runway heading, while a surface aviation observation from XLL about 5 minutes before the accident indicates in part the wind was from 290 degrees at 7 knots.

The CFI simulated a failure of the right engine by bringing the right throttle to idle, which prompted the student to correct for and secure the 'failed' engine. He did perform the procedure correctly, and before turning onto crosswind, the CFI advanced the right throttle to 13 inches of manifold pressure (per the manufacturer's recommendation), and the flight continued in the traffic pattern for runway 25. The student applied the necessary aileron and rudder corrections to account for the 'failed' right engine, and turned onto final approach to runway 25.

While on final approach with flaps fully extended to the landing position, the student kept the longitudinal axis of the airplane aligned with centerline, and maintained 'blue line' indicated airspeed plus ten knots. As the flight approached the runway the student flared a little high or early, with a resulting "solid touchdown" on the dry runway on the main landing gears. Though the CFI could tell the touchdown was going to be firm or harder than average, he didn't feel the need to take over the controls or initiate a go-around since the landing was no worse than others he has had in this aircraft in the past. While guarding the rudder pedals with his feet, shortly, if not immediately after touchdown, the aircraft pulled heavily to the left, which he (CFI) attempted to correct with full right rudder and right brake application. Having no affect the airplane continued to veer to the left and collided with a snowbank off

the left side of the runway at about 25 knots. The airplane was removed from the site for further examination.

Postaccident inspection of the airplane following recovery by a FAA airworthiness inspector revealed no evidence of preimpact failure or malfunction of the nose landing gear steering system, or of the left main landing gear trunnion, which exhibited evidence of overload fracture. The FAA inspector also reported observing skid marks on the runway from all three landing gear tires; the skid mark from the nose landing gear tire was very close to the skid mark made by the left main landing gear tire, consistent with the airplane yawing to the left.

Flight instructor Information

Certificate:	Airline transport; Commercial; Flight instructor	Age:	27
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	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:	September 12, 2013
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	August 26, 2013
Flight Time:	6450 hours (Total, all aircraft), 74 hours (Total, this make and model), 4263 hours (Pilot In Command, all aircraft), 103 hours (Last 90 days, all aircraft), 32 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Commercial	Age:	18
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	January 23, 2014
Occupational Pilot:	No	Last Flight Review or Equivalent:	August 28, 2013
Flight Time:	167 hours (Total, all aircraft), 8 hours (Total, this make and model), 123 hours (Pilot In Command, all aircraft), 20 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N931JS
Model/Series:	PA-30	Aircraft Category:	Airplane
Year of Manufacture:	1969	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	30-1826
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	December 12, 2013 Annual	Certified Max Gross Wt.:	3600 lbs
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	5560 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	IO-320-B1A
Registered Owner:	HAMILTON SERVICES GROUP, INC.	Rated Power:	160 Horsepower
Operator:	Gateway Aviation, Ltd.	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	XLL,399 ft msl	Distance from Accident Site:	
Observation Time:	14:35 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	290°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	29.97 inches Hg	Temperature/Dew Point:	-3°C / -16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Allentown, PA (ABE)	Type of Flight Plan Filed:	None
Destination:	Allentown, PA (XLL)	Type of Clearance:	None
Departure Time:	14:35 Local	Type of Airspace:	

Airport Information

Airport:	Allentown Queen City Municipal XLL	Runway Surface Type:	Asphalt
Airport Elevation:	399 ft msl	Runway Surface Condition:	Dry
Runway Used:	25	IFR Approach:	None
Runway Length/Width:	3949 ft / 75 ft	VFR Approach/Landing:	Full stop

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	40.570278,-75.488334(est)

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	Thomas A Gilbert; FAA/FSDO; Allentown, PA
Original Publish Date:	November 3, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=88842

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