Aviation Investigation Final Report

Location:	Salem, Ohio	**Accident Number:**	CEN11LA345
Date & Time:	May 19, 2011, 08:43 Local	**Registration:**	N1UL
Aircraft:	Socata TBM-850	**Aircraft Damage:**	Substantial
Defining Event:	Miscellaneous/other	**Injuries:**	1 Serious, 3 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

The pilot reported that he flew an instrument approach and was clear of clouds about 650 feet above ground level when he proceeded visually to the airport. About 1/2 mile from the runway, he thought the airplane was too high, but a few seconds later the airplane felt like it had an excessive rate of descent. His attempts to arrest the rate of descent were unsuccessful, and the left main landing gear struck the ground about 120 feet prior to the runway threshold. The recorded data downloaded from the airplane's non-volatile memory showed that the airplane's airspeed varied from about 71 - 81 knots indicated airspeed (IAS) during the 10 seconds prior to ground impact. The data also indicated that there was about a 3 - 5 knot tailwind during the final landing approach. The airplane's stall speed with the airplane in the landing configuration with landing flaps was 64 knots IAS at maximum gross weight. The pilot reported that there was no mechanical malfunction or system failure of the airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain a stabilized glide path which resulted in the airplane touching down short of the runway.

Findings

Aircraft	Descent/approach/glide path - Not attained/maintained
Personnel issues	Incorrect action performance - Pilot
Environmental issues	Tailwind - Contributed to outcome

Factual Information

History of Flight

Approach-VFR pattern final	Miscellaneous/other (Defining event)
Approach-VFR go-around	Attempted remediation/recovery
Approach-VFR go-around	Collision with terr/obj (non-CFIT)

On May 19, 2011, at 0843 eastern daylight time, a Socata TBM-850, N1UL, sustained substantial damage when the airplane impacted the terrain about 120 feet prior to the approach end of runway 10L (3,404 feet by 50 feet, asphalt) at the Salem Airpark (38D), Salem, Ohio. The private pilot and two passengers were not injured, but a third passenger received serious injuries. The airplane was registered to Urschel Air Leasing, LLC, and operated by Urschel Laboratories, Inc., as a business flight under the provisions of the 14 Code of Federal Regulations Part 91. Instrument meteorological conditions prevailed at the time of the accident. An instrument flight rules (IFR) flight plan was filed. The flight departed the Porter County Regional Airport (VPZ), Valparaiso, Indiana, at 0722.

The pilot reported that Akron Approach Control cleared the flight to fly the GPS-A instrument approach to 38D. At GEOFF, the final approach fix, the airplane was level at 3,000 feet above mean sea level (msl). The pilot lowered the landing gear and the flaps to begin the descent. The airplane broke out of the clouds about 1,800 feet msl and the pilot proceeded visually to the airport. He circled to the right in order to make a landing on runway 10. The pilot reported that the winds were a direct crosswind from 190 degrees at 10 knots. He reported that he had calculated that the landing distance would be 1,400 feet, and he intended to land near the approach end of the runway. He turned onto the final leg about 2 miles from the airport while maintaining about 85 - 90 knots indicated airspeed (IAS) on the approach with full flaps and descending about 400 feet per minute. He reported that about 1/2 mile from the runway, he thought the airplane was too high, but "a few seconds later" the airplane felt like it "literally just dropped out of the sky." He immediately applied full power and pitched the nose up to perform a go-around, but "the application of power was too late" and the left main landing gear struck the ground about 120 feet prior to the runway threshold. The airplane came to a stop about 120 feet past the runway threshold on the left side of the runway.

The Garmin GPS 1000 MFD (multi-function display) flash card, which recorded the airplane's performance and waypoint data, was downloaded. The recorded data indicated that the airplane's airspeed varied from about 71 - 81 knots IAS during the 10 seconds prior to ground impact. The data also indicated that the airplane's ground speed averaged about 3 - 5 knots higher than the IAS during the final approach. The Socata TBM-850 Pilot Operating Handbook indicates that the stall speed with the airplane in the landing configuration with landing flaps was 64 knots IAS at maximum gross weight.

The pilot indicated in his report to the National Transportation Safety Board that there was no mechanical malfunction or system failure of the airplane.

Pilot Information

Certificate:	Private	**Age:**	33,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	July 9, 2008
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	October 31, 2010
Flight Time:	932 hours (Total, all aircraft), 76 hours (Total, this make and model), 879 hours (Pilot In Command, all aircraft), 55 hours (Last 90 days, all aircraft), 28 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Socata	**Registration:**	N1UL
Model/Series:	TBM-850	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	564
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	February 25, 2011 100 hour	**Certified Max Gross Wt.:**	7395 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo prop
Airframe Total Time:	187 Hrs at time of accident	**Engine Manufacturer:**	Pratt & Whitney Canada
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	PT6A-66D
Registered Owner:	Urschel Air Leasing, LLC	**Rated Power:**	850 Horsepower
Operator:	Urschel Laboratories	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	YNG,1192 ft msl	**Distance from Accident Site:**	20 Nautical Miles
Observation Time:	08:26 Local	**Direction from Accident Site:**	26°
Lowest Cloud Condition:	Unknown	**Visibility**	2.5 miles
Lowest Ceiling:	Overcast / 500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	200°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.96 inches Hg	**Temperature/Dew Point:**	12°C / 11°C
Precipitation and Obscuration:	N/A - None - Haze		
Departure Point:	Valparaiso, IN (VPZ)	**Type of Flight Plan Filed:**	IFR
Destination:	Salem, OH (38D)	**Type of Clearance:**	IFR
Departure Time:	07:22 Local	**Type of Airspace:**	

Airport Information

Airport:	Salem Airpark 38D	**Runway Surface Type:**	Asphalt
Airport Elevation:	1162 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	10L	**IFR Approach:**	Global positioning system
Runway Length/Width:	3404 ft / 50 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious, 2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 3 None	**Latitude, Longitude:**	40.948055,-80.861946(est)

Administrative Information

Investigator In Charge (IIC):	Silliman, James
Additional Participating Persons:	Mark Miller; FAA Cleveland FSDO; Cleveland, OH
Original Publish Date:	August 30, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=79147