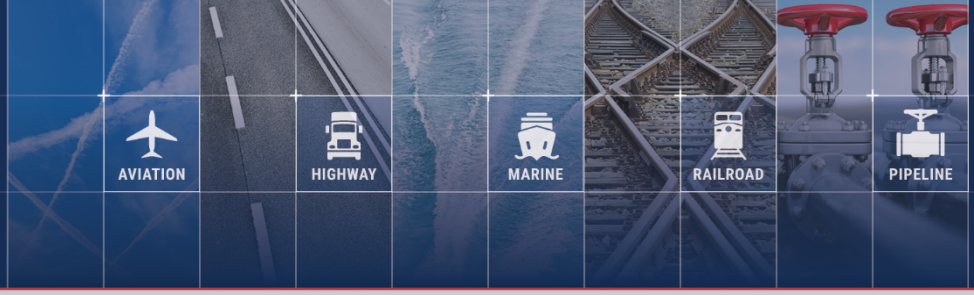

Aviation Investigation Final Report

Location:	Plymouth, Massachusetts	**Accident Number:**	ERA16LA115
Date & Time:	February 27, 2016, 14:30 Local	**Registration:**	N482S
Aircraft:	Beech 95 C55	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot was conducting a personal flight in his multiengine airplane and was preparing to perform a touch-and-go landing with a headwind at 11 knots, gusting to 17 knots. After touchdown and a brief landing roll, the pilot applied power and took off. The pilot stated that shortly after takeoff, he received an aural and visual traffic alert; the pilot reduced power on both engines and attempted to land straight ahead. The pilot reported that the airplane then encountered a wind gust and rolled to the right; it struck the ground to the left of the runway, which resulted in substantial damage to the wings, empennage, and fuselage. The pilot reported that there were no preimpact mechanical malfunctions or failures of the airplane that would have precluded normal operation.

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 control of the airplane during an aborted takeoff in gusting wind conditions.

Findings

Personnel issues	Aircraft control - Pilot
Environmental issues	Gusts - Effect on operation

Factual Information

History of Flight

Initial climb	Collision avoidance alert
Initial climb	Other weather encounter
Initial climb	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On February 27, 2016, at 1430 eastern standard time, a Beech 95-C55, N482S, was substantially damaged when it impacted the ground during an aborted go-around maneuver at Plymouth Municipal Airport (PYM), Plymouth, Massachusetts. The private pilot was seriously injured. The airplane was owned and operated by the pilot as a personal flight under the provisions of Title *14 Code of Federal Regulations* Part 91. Visual meteorological conditions were reported near the accident site and no flight plan was filed for the flight that departed Marshfield Municipal Airport (GHG) Marshfield, Massachusetts about 1300.

The pilot stated that after departing GHG, he briefly performed some airwork, then flew to PYM, where he intended to perform a touch-and-go landing. He entered the PYM traffic pattern on a 45° entry to runway 24. He reported that he extended his downwind due to a slower airplane on final. He reported that he announced his intentions on the common traffic advisory frequency (CTAF) and reported turning base and final approach.

After landing on the runway, he reported that he touched down and "rolled several feet" before pushing the throttles full forward and rotated for takeoff. After the airplane achieved a positive rate of climb and was preparing to retract the flaps, he received an Automatic Dependent Surveillance-Broadcast (ADS-B) traffic advisory warning indicating a possible collision with another airplane within 15 to 20 seconds. He reported that he pulled the throttles back and pushed the yoke forward for a straight ahead landing on the runway, but a gust of wind struck his airplane and tipped it to the right. The airplane's tail then struck the ground, followed by the left wing tip and left propeller. The pilot was unable to recall the events that transpired after this point.

The pilot reported that his Avidyne TA was set at the most sensitive level, that it warned audibly, and displayed a large yellow circle on the screen, this indicated a possible collision and, according to the pilot, he assumed it was possibly another airplane using the intersecting runway. The pilot stated that there were no preimpact mechanical malfunctions or failures of the airplane that would have precluded normal operation.

Multiple eyewitnesses located at the airport observed the airplane during approach, landing, takeoff and impact. None of the witnesses reported another airplane in the pattern or recalled other communications. One witness described the airplane flying in a "nose high attitude with the left wing low." He reported that the nose of the airplane continued to increase pitch nose high, before rolling to the left and descending. The airplane appeared to make a "u-turn" and struck the ground on an easterly heading. He

further reported that the airplane never appeared to get any higher than 50 ft. An additional witness reported that the airplane appeared to be performing a go-around maneuver, however, the nose continued to pitch up and the airplane started to "bank to the left and the nose continued to rise." He further reported that both engines sounded like they were operating and there was no "sputtering, coughing or smoke."

Pilot Information

Certificate:	Private	**Age:**	67,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	February 2, 2016
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 21, 2016
Flight Time:	(Estimated) 2154.5 hours (Total, all aircraft), 2154.5 hours (Pilot In Command, all aircraft)		

The pilot, age 67, held a private pilot certificate with ratings for airplane single-engine land and multi-engine land airplane. He reported 2,154 hours of total flight time, with 1,364 hours of multiengine time. His most recent flight review was conducted on February 21, 2016. The pilot owner purchased the airplane on November 20, 1990.

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N482S
Model/Series:	95 C55 UNDESIGNAT	**Aircraft Category:**	Airplane
Year of Manufacture:	1966	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TE-117
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	October 14, 2015 Annual	**Certified Max Gross Wt.:**	5300 lbs
Time Since Last Inspection:	12 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	3996 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	C91 installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-520-CB
Registered Owner:	On file	**Rated Power:**	285 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

According to Federal Aviation Administration (FAA) records and the airframe manufacturer, the six-seat, low wing, retractable tricycle gear, multi-engine airplane, was manufactured in 1966. It was powered by two, Continental Motors, IO-520-CB 285-hp engines and equipped with McCauley 3-blade constant speed propellers. The airplane's most recent annual inspection was completed on October 14, 2015. At that time, the left and right engines had 316 hours and 278 hours total time respectively; the airframe had 3,996 hours total time. The airplane had been operated about 12 hours from the time of the last annual inspection, until the accident.

The airplane was equipped with an Avidyne TAS 620 dual antenna ADSB system that utilized a Garman GNS-530 for aural and visual display of traffic advisories. It was also equipped with an Insight Avionics G-4 panel mounted graphic engine monitor that monitored engine performance and recorded up to 22 parameters on each engine. Following the accident, the device was downloaded by an FAA inspector with the assistance of the manufacturer of the unit, and the data was sent to the NTSB for examination.

The data on the unit began at 1353:58 . The data started at a point consistent with the engine at idle at device power-up, followed by data that was consistent with taxi, run-up, and eventually takeoff power application at 1501:47. At 1534:54, there was a uniform decrease in fuel flow, tachometer and exhaust gas temperature (EGT) on both engines, indicating descent from pattern altitude to final approach at PYM. At 1535:30, there was a sharp and uniform increase in fuel flow, increasing from 5.1 and 6.2 gallons per hour (gph) to 24.4 and 27.5 gph on the left and right engines respectively. In addition, there was a uniform increase in the tachometer and EGT on both engines. Four seconds after the quick application of power, at 1535:34, there was a rapid reduction in power. At 1535:39, about the time of impact, data began rapid reductions to zero across most of the parameters.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KPYM,149 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	14:52 Local	**Direction from Accident Site:**	197°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots / 17 knots	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	29.95 inches Hg	**Temperature/Dew Point:**	2°C / -13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	MARSHFIELD, MA (GHG)	**Type of Flight Plan Filed:**	None
Destination:	Plymouth, MA (PYM)	**Type of Clearance:**	None
Departure Time:	13:00 Local	**Type of Airspace:**	Class E

A surface weather observation at PYM at 1452 reported winds were from 240° at 11 knots with gusts of 17 knots, visibility 10 statute miles, and clear conditions. The temperature was 2°C, dew point -13C, and altimeter setting of 29.96 inches of mercury.

Airport Information

Airport:	PLYMOUTH MUNI PYM	**Runway Surface Type:**	Asphalt
Airport Elevation:	148 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	24	**IFR Approach:**	None
Runway Length/Width:	4350 ft / 75 ft	**VFR Approach/Landing:**	Touch and go

PYM was a public-use airport located 4 miles southwest of Plymouth, Massachusetts. The airport elevation was about 148 ft elevation and it was configured with two intersecting runways; runway 6/24 and 15/33; both of which were 4,350 ft-long and 75-ft wide and made from asphalt.

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	41.910278,-70.728889

According to an FAA inspector who travelled to the accident site, the wreckage debris was spread over 100 ft adjacent to runway 24 and oriented in an easterly heading. The wings, empennage, and fuselage were substantially damaged. There was no post-crash fire. The airplane came to rest upside down in the grassy area about 160 ft adjacent to runway 24 and about 630 ft south southwest of the runway 15/33 intersection.

The nose cone was fragmented. The nose compartment was buckled down and canted to the right. The vertical and horizontal stabilizer remained attached, but the underside was crushed, and the entire empennage was canted forward and to the right.

Both wings exhibited substantial damage. The right wing leading edge about 5 ft outboard of the engine through the wing tip was crushed aft at a 45° angle. The left wing leading edge was crushed about 5 ft outboard of the engine and 3 feet of the wing tip was separated. The flaps were in the 30° down position and were not damaged. The landing gear was down which was corroborated by the position of the landing gear selector handle. The elevator trim indication in the cockpit was indicating takeoff configuration near the top of the green arc, and both left and right elevator trim tabs were in the 13° tab trailing edge down position.

Both engines remained attached to their respective engine mounts and were relatively intact.
All three propeller blades on the left and right engines remained attached to the hub and each blade tip was uniformly curled aft and exhibited chordwise scraping. Both propeller spinners were crumpled uniformly around the circumference.

Communications

PYM did not have a control tower, and the CTAF of 123.00 MHz was recorded. The recorded communications indicate several airplanes in or entering the airport traffic pattern for runway 24. At 4 minutes 15 seconds (4:15) of the recording, N482S made a radio call indicating he was on cross-wind entering downwind for runway 24 followed by a report on left base at 5:18 and on final at 5:43. The accident was reported by another airplane on final a short time later.

There were no recorded communications leading up to the accident from any other aircraft operating on the intersecting runway 15/33.

Administrative Information

Investigator In Charge (IIC):	Mccarter, Lawrence
Additional Participating Persons:	Robert Berlyn; FAA/FSDO; Burlington, MA Ernie Hall; Textron Aviation (Beech); Wichita, KS Nicole Charnon; Continental Motors; Mobile, AL
Original Publish Date:	April 20, 2020
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=92776