



Aviation Investigation Factual Report

Location:	Battleground, Washington	Accident Number:	WPR19LA200
Date & Time:	July 20, 2019, 16:20 Local	Registration:	N873BC
Aircraft:	Beech 33	Aircraft Damage:	Substantial
Defining Event:	Powerplant sys/comp malf/fail	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Factual Information

On July 20, 2019, about 1620 Pacific daylight time, a Beechcraft F33A, N873BC, was substantially damaged when it was involved in an accident near Parkside Airpark (WA87), Battleground, Washington. The pilot and pilot-rated passenger were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to the pilot, they were returning to his home airport after having lunch at another airport. The pilot entered a descent from a cruise altitude of 5,500 ft mean sea level (msl) approximately 16 nautical miles from his destination airport. He leveled off at 1,000 ft and observed the windsock as he overflew the airport, which indicated a light easterly wind. The pilot then entered the right downwind leg of the airport traffic pattern to land on runway 07. He touched down close to the runway threshold at 70 kts with the throttle near idle power. Approximately 700 ft into the landing roll, the pilot noticed that his airspeed had not decreased as it normally had during prior landings. Additionally, the engine rpm was higher than normal.

The pilot attempted to reduce the engine power by twisting the knob of the throttle control counterclockwise, but he did not observe a decrease in engine power. As the airplane approached the end of the runway, the pilot used the mixture control to shut down the engine. However, the airplane overran the end of the runway, traversed an adjacent road, and the left wing impacted a metal pole before the airplane came to rest. During the accident sequence, the airplane's left wing was substantially damaged.

The pilot stated that he normally uses the pushbutton mechanism on the throttle to reduce power after takeoff and for greater reductions in power during flight. He uses the twist function of the throttle knob to make minor adjustments in power.

A review of the aircraft logbooks from May 5, 1998, to present showed multiple entries that indicated the "entire aircraft" had been "lubricated." Although some of the entries stated that the controls were "checked," none of them indicated that the throttle control had been disassembled and inspected; however, this was not required as the throttle control was a sealed assembly.

The airplane was equipped with a throttle control assembly that allowed the pilot to make fine adjustments to the power setting. The throttle assembly was comprised of a compression spring, a knob, and the throttle cable, which was attached to a button at the end of the knob with an AN924-3D nut and an AN936-A616 lock tooth washer. To make a minor power adjustment, the pilot rotated the knob clockwise to increase power and counterclockwise to decrease power. For large power adjustments, the pilot depressed the button and either pushed the knob forward to advance the throttle or pulled the knob aft to retard the throttle.

An inspection and engine run were performed at the owner's home by the National Transportation Safety Board investigator-in-charge, a representative of the Federal Aviation

Administration, and the engine manufacturer. Throttle and mixture continuity were confirmed from the cockpit to the throttle and mixture controls.

The engine was run for about 3 minutes at 800 rpm to warm up before an engine run-up was performed. The engine was then advanced to its maximum rated power momentarily before it was shut down. During these tests, the engine sounded smooth and continuous and did not display any interruptions in power.

A second engine run was accomplished to examine the security of the throttle control mechanism. During this test, the throttle was reduced from 1,800 rpm to 800 rpm using the pushbutton mechanism, which became stuck in a halfway depressed position. With the button stuck in this position, an engine power reduction was attempted by rotating the knob counterclockwise. This movement would normally reduce engine power; however, only a corresponding minor increase in power was observed. This test was repeated multiple times with the same result.

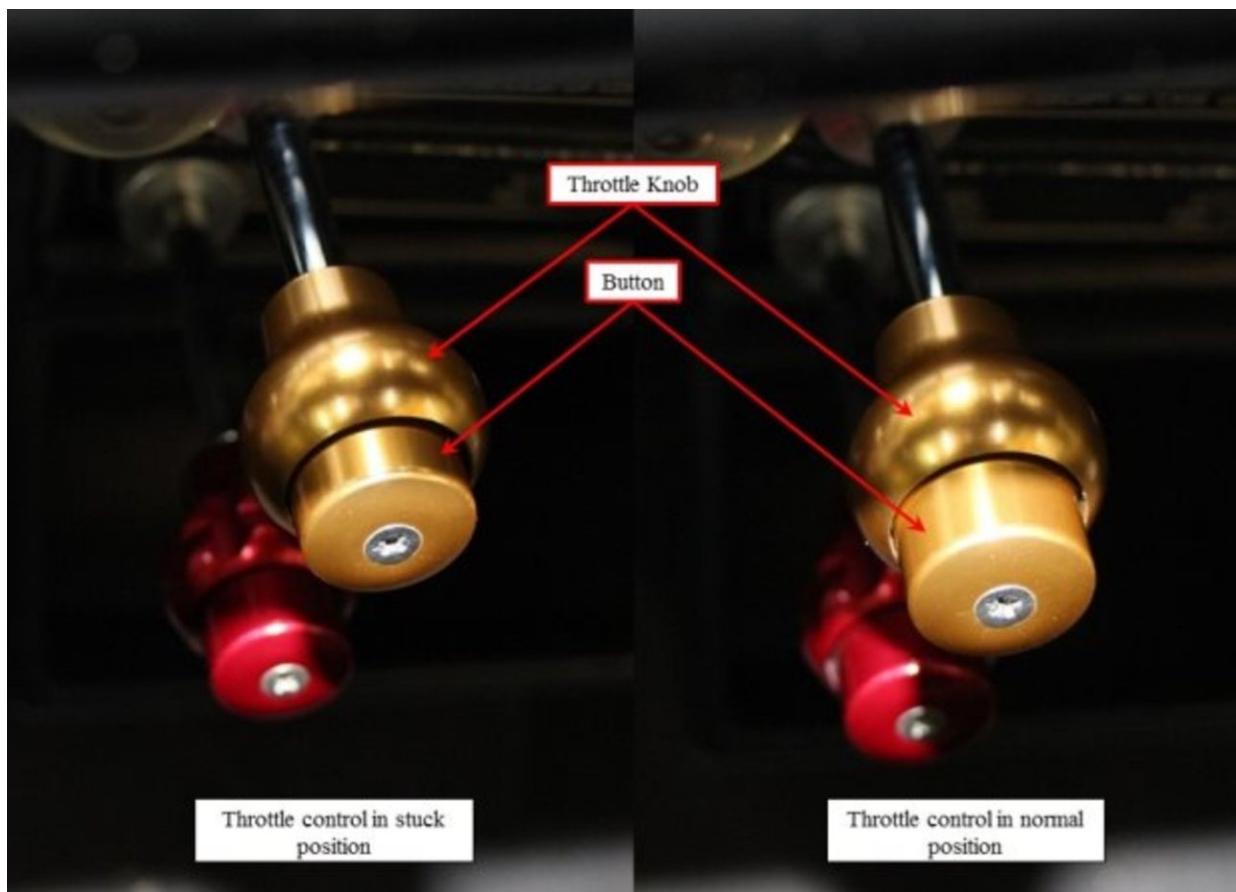


Figure 1: Throttle Control in Both Stuck and Normal Positions

Disassembly of the throttle mechanism revealed that the spring and washer were present and had been installed correctly. The spring did not display any debris or anomalous wear that could have inhibited its movement. The throttle cable was secured with the nut and washer; however, the nut was loose and could be easily manipulated by hand. According to the

manufacturer, a loose nut would prevent the knob from being held against the throttle shaft. This could allow the knob to spin freely when rotated by the pilot, thus preventing the throttle cable from moving in and out. If the nut was completely loose, the knob could separate from the throttle shaft. However, the loose nut would generally not impact the functionality of the button if the knob was not near the point of separation.

WA87 was a private airport with one runway in an east/west configuration. The runway dimensions were 2,100 ft long and 25 ft wide.

Performance computations of the airplane's landing distance were completed using a temperature of 29° C, a total weight of 3,100 lbs, and a headwind of 10 kts. These figures were plotted using the landing distance chart from the pilot's operating handbook, which showed the airplane's ground roll would have been about 710 ft.

Pilot Information

Certificate:	Commercial	Age:	82, Male
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 3 With waivers/limitations	Last FAA Medical Exam:	
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 19, 2018
Flight Time:	15650 hours (Total, all aircraft), 960 hours (Total, this make and model), 4 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N873BC
Model/Series:	33 F33A	Aircraft Category:	Airplane
Year of Manufacture:	1988	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	CE-1227
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	March 28, 2019 Annual	Certified Max Gross Wt.:	3400 lbs
Time Since Last Inspection:	4 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1634 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	Installed	Engine Model/Series:	IO-520-BB37B
Registered Owner:	On file	Rated Power:	285 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:	275 ft msl	Distance from Accident Site:	90 Nautical Miles
Observation Time:	15:53 Local	Direction from Accident Site:	13°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	360°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.95 inches Hg	Temperature/Dew Point:	30°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Port Townsend, WA (0S9)	Type of Flight Plan Filed:	None
Destination:	Battleground, WA (WA87)	Type of Clearance:	None
Departure Time:	15:11 Local	Type of Airspace:	Class E

Airport Information

Airport:	Parkside Airpark WA87	Runway Surface Type:	Asphalt
Airport Elevation:	275 ft msl	Runway Surface Condition:	Unknown
Runway Used:	E	IFR Approach:	None
Runway Length/Width:	2100 ft / 25 ft	VFR Approach/Landing:	Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	45.819999,-122.550003(est)

Administrative Information

Investigator In Charge (IIC):	Stein, Stephen
Additional Participating Persons:	Kenneth Bradshaw; Federal Aviation Administration; Hillsboro, OR Henry Soderlund; Textron Aviation; Wichita, KS Kurt Gibson; Continental Aerospace Technologies; Mobile, AL
Report Date:	May 11, 2022
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=99924

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).