



Aviation Investigation Final Report

Location:	Mount Airy, North Carolina	Accident Number:	ERA13LA167
Date & Time:	March 14, 2013, 19:15 Local	Registration:	N30BA
Aircraft:	ALLEN BD-5	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that he intended to perform a flyby before landing. As he approached the runway about 50 feet above ground level, the pilot advanced the throttle to full; however, the engine immediately stopped. He responded by pitching the airplane up and to the right. The airplane then entered a steep left turn. The airspeed decreased to 100 mph, and the airplane started to vibrate, so the pilot quickly leveled the wings and pitched downward to prevent the airplane from entering a stall. The pilot continued to fly a wings-level descent until the airplane impacted terrain. Examination of the airplane revealed that the engine choke cable was rigged backwards; therefore, pulling the choke knob out opened the choke valve and pushing it in closed it. The choke knob, which is located directly behind the pilot's head, was found pushed in during postaccident examination. Therefore, it was likely that the pilot's head contacted the choke while he was responding to the loss of engine power, which resulted in a closed choke and a corresponding total loss of engine power. The experimental amateur-built airplane was equipped with an automobile engine and was never certified as airworthy; therefore, it was never issued an airworthiness certificate.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A total loss of engine power due to the pilot's inadvertent closing of the engine choke. Contributing to the accident was the improper rigging of the engine choke cable.

Findings

Aircraft	(general) - Unintentional use/operation
Aircraft	(general) - Incorrect service/maintenance

Factual Information

History of Flight

Prior to flight	Aircraft maintenance event
Maneuvering-low-alt flying	Loss of engine power (total) (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On March 14, 2013, about 1915 eastern daylight time, an experimental amateur-built BD-5 airplane, N30BA, was substantially damaged when it impacted the ground, following a total loss of engine power while performing a flyby at Mount Airy/Surry County Airport (MWK), Mount Airy, North Carolina. The private pilot was seriously injured. Visual meteorological conditions prevailed, and no flight plan was filed for the flight. The flight originated from Statesville Regional Airport (SVH), Statesville, North Carolina. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91.

The pilot reported on the common traffic advisory frequency that he was on final approach to runway 36. According to witnesses, the airplane was observed in a low pass to the east of the runway when it entered a climb and banked to the right, then banked steeply to the left. The airplane subsequently entered a descent, impacted terrain and came to rest in a ravine on airport property.

The pilot stated that he intended to perform a flyby prior to landing at SVH. He approached runway 36 about 50 feet above ground level and 140 mph. When he advanced the throttle to full power the engine stopped immediately and he responded by pitching the airplane up and to the right. The airspeed then decreased to 120 mph and he entered a steep left turn, about 60 degrees. The airspeed decreased to 100 mph and the airplane started to vibrate, so he quickly leveled the wings and pitched downward to prevent the airplane from entering a stall. The pilot continued to fly in a wings level descent before impacting terrain in a slight nose down attitude. The wreckage was oriented about 040 degrees magnetic with a ground scar to the left of the aircraft nose 36 inches in length and approximately 18 inches deep. Small trees were stacked by the left wing root.

According to Federal Aviation Administration (FAA) records, the pilot held a private pilot certificate with a rating for airplane single-engine land. The pilot's most recent FAA third-class medical certificate was issued on July 29, 2008. The pilot reported 1,100 total hours of flight experience and three hours in make and model.

The single-engine, pusher-propeller configured airplane was powered by a 1976 Honda Civic, 130 horsepower, automobile engine. According to FAA records, the airplane was never certified airworthy and therefore was never issued an airworthiness certificate. The pilot stated that the engine accrued about three hours since installation.

Examination of the engine by FAA inspectors revealed that the choke cable was rigged backwards; pulling the choke knob out would open the choke valve and pushing it in would close it. The choke knob was located directly behind the pilot's head; therefore, any aft movement of the pilot's head could push the choke cable in causing the engine to stall. The cable connecting the choke knob to the carburetor could be moved freely.

The propeller had minor damage and rotated freely. The propeller drive belts were off the drive pulleys but were intact and the drive pulley rotated freely. The flywheel was rotated successfully by hand and the engine did not display any evidence consistent with seizing. The propeller clutch also appeared to be functioning correctly. The engine drive pulley was in place and rotated freely. Compression could not be determined due to the inaccessibility of the engine at the accident site. Continuity of the throttle and mixture controls to the carburetor was established. All flight control surfaces were accounted for at the scene and flight control continuity was confirmed for all major flight control surfaces. Both wing fuel tanks were breached but the fuselage fuel tank appeared full.

At 1935, the weather observation at Mount Airy/Surry County Airport (MWK), Mount Airy, North Carolina, reported wind from 280 degrees at 3 knots, 10 miles visibility and sky clear. The temperature was 7 degrees C, dew point minus 13 degrees C, and an altimeter setting of 30.13 inches of mercury.

Pilot Information

Certificate:	Private	Age:	35, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Single
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	July 29, 2008
Occupational Pilot:	No	Last Flight Review or Equivalent:	January 21, 2012
Flight Time:	(Estimated) 1100 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ALLEN	Registration:	N30BA
Model/Series:	BD-5	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	NBA-19
Landing Gear Type:	Retractable - Tricycle	Seats:	1
Date/Type of Last Inspection:		Certified Max Gross Wt.:	830 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Honda
ELT:	Not installed	Engine Model/Series:	Civic
Registered Owner:	On file	Rated Power:	130 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:	MWK,1249 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	19:35 Local	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	280°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.12 inches Hg	Temperature/Dew Point:	7°C / -13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Statesville, NC (SVH)	Type of Flight Plan Filed:	None
Destination:	Mount Airy, NC (MWK)	Type of Clearance:	None
Departure Time:	19:00 Local	Type of Airspace:	

Airport Information

Airport:	Mount Airy/Surry County Arpt MWK	Runway Surface Type:	Asphalt
Airport Elevation:	1249 ft msl	Runway Surface Condition:	Dry
Runway Used:	36	IFR Approach:	None
Runway Length/Width:	4301 ft / 75 ft	VFR Approach/Landing:	Go around

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:	36.45972,-80.55278(est)

Administrative Information

Investigator In Charge (IIC):	Neylon, John
Additional Participating Persons:	Wayne Vohs; FAA Greensboro FSDO; Greensboro, NC
Original Publish Date:	December 11, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=86423

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](#).