Aviation Investigation Final Report

Location:	Orient, Ohio	**Accident Number:**	CEN18LA275
Date & Time:	July 12, 2018, 16:25 Local	**Registration:**	N619NT
Aircraft:	WHITTMAN Tailwind	**Aircraft Damage:**	Substantial
Defining Event:	Fuel starvation	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The private pilot, who was the owner of the experimental amateur-built airplane, was receiving instruction from a flight instructor during a familiarization flight when the airplane experienced a total loss of engine power while leveling off at 2,000 ft mean sea level. The flight instructor attempted to restart the engine by turning on the carburetor heat and the fuel pump but was not successful. The flight instructor then performed a forced landing to a field, during which the airplane sustained substantial damage to the fuselage.

The pilot stated that the airplane was equipped with an unconventional mixture control that was improperly used during flight and caused the engine to quit running. Postaccident examination of the airplane revealed the mixture control had been modified from its original configuration; the full-forward position of the mixture control would provide a full lean mixture, opposite of the original configuration in which a full-forward position would have provided a full rich mixture. Thus, it is likely that fuel was inadvertently cut off during flight. There were no other mechanical malfunctions or anomalies reported that would have precluded normal operation of the airplane. The pilot recommended that "[b]etter and more thorough cockpit familiarization would have prevented the accident from occurring."

Probable Cause and Findings

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

The pilot's and the flight instructor's incorrect use of the modified mixture control, which resulted in a loss of engine power due to fuel starvation and a forced landing. Also causal was the inadequate systems knowledge of the experimental, amateur-built airplane by the pilot and the flight instructor.

Findings

Aircraft	Mixture control - Not specified
Personnel issues	Incorrect action performance - Pilot
Personnel issues	Incorrect action performance - Instructor/check pilot
Aircraft	Fuel - Not specified
Personnel issues	Knowledge of equipment - Pilot
Personnel issues	Knowledge of equipment - Instructor/check pilot

Factual Information

History of Flight

Prior to flight	Aircraft maintenance event
Enroute-cruise	Fuel starvation (Defining event)
Enroute-cruise	Attempted remediation/recovery
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

On July 12, 2018, about 1625 eastern daylight time, an experimental amateur-built Whittman Tailwind, N619NT, impacted terrain during a forced landing following a total loss of engine power near Orient, Ohio. The airplane sustained substantial damage to the fuselage. The private pilot/airplane owner and a flight instructor were uninjured. The airplane was registered to the previous owner and operated by the pilot under the provisions of Title *14 Code of Federal Regulations* Part 91 as an instructional flight that was not operating on a flight plan. Day visual meteorological conditions prevailed at the time of the accident. The local flight departed from the Bolton Field Airport, near Columbus, Ohio, about 1610.

The pilot, who was the airplane owner, stated the flight was a familiarization flight for him for the purpose of meeting insurance requirements.

The flight instructor stated the preflight and runup for the familiarization flight was normal. After the departure and level off at 2,000 ft msl, the engine began to "surge and then quit running". He turned on carburetor heat and the fuel pump, but engine power was not regained, and the propeller kept windmilling. He then performed a forced landing to a field.

The flight instructor did not provide his total flight time in the accident airplane make and model in his National Transportation Safety Board Pilot/Operator Aircraft Accident Report, Form 6120. The flight instructor entered "all types" in the flight time matrix of Form 6120. The flight instructor's experience in the accident airplane make and model was unknown.

The pilot stated the airplane was equipped with an unconventional mixture control that was improperly used during flight and caused the engine to quit running. The pilot's recommendation was: "Better and more thorough cockpit familiarization would have prevented the accident from occurring."

According to the Federal Aviation Administration inspector from the Columbus Flight Standards District Office, the post-accident examination of the airplane revealed the mixture control had been modified from its original configuration that was opposite of a configuration in which a full forward position of the mixture control would have provided a full rich mixture. As a result, the fuel was inadvertently cut-off during flight. There were no other mechanical anomalies reported that would have precluded normal operation.

Pilot Information

Certificate:	Private	**Age:**	58,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	February 10, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	January 1, 2017
Flight Time:	800 hours (Total, all aircraft), 1 hours (Total, this make and model)		

Flight instructor Information

Certificate:		**Age:**	72,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-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):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	September 21, 2017
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	January 19, 2018
Flight Time:	30000 hours (Total, all aircraft), 0 hours (Total, this make and model), 29800 hours (Pilot In Command, all aircraft), 180 hours (Last 90 days, all aircraft), 60 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	WHITTMAN	**Registration:**	N619NT
Model/Series:	Tailwind	**Aircraft Category:**	Airplane
Year of Manufacture:	2013	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	4039
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	July 7, 2018 Condition	**Certified Max Gross Wt.:**	1235 lbs
Time Since Last Inspection:	16 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	15 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-320-E2D
Registered Owner:	Previous Owner	**Rated Power:**	150 Horsepower
Operator:	Pilot	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	TZR,904 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	17:45 Local	**Direction from Accident Site:**	45°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	70°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.17 inches Hg	**Temperature/Dew Point:**	28°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Columbus, OH (TZR)	**Type of Flight Plan Filed:**	None
Destination:	Columbus, OH (TZR)	**Type of Clearance:**	None
Departure Time:	16:10 Local	**Type of Airspace:**	

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:**	39.805831,-83.152221(est)

Administrative Information

Investigator In Charge (IIC):	Gallo, Mitchell
Additional Participating Persons:	Steven Ronshausen; Federal Aviation Administration; Columbus FSDO; Columbus, OH
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=97807

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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.