

Aviation Investigation Factual Report

Location:	Huntsville, Texas	Accident Number:	CEN19FA170
Date & Time:	June 14, 2019, 18:28 Local	Registration:	N9754J
Aircraft:	Piper PA28	Aircraft Damage:	Destroyed
Defining Event:	Fuel starvation	Injuries:	1 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

On June 14, 2019, about 1828 central daylight time, a Piper PA-28-180 airplane, N9754J, was destroyed when it impacted trees and terrain following a loss of engine power while approaching to land at the Huntsville Municipal Airport (UTS), Huntsville, Texas. The pilot received serious injuries and the passenger was fatally injured. The airplane was registered to AMWR LLC and operated by the General Chennault Flying Tiger Academy (GCFTA) under the provisions of Title 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which was not operated on a flight plan. The flight originated from the Conroe-North Houston Regional Airport (CXO), Conroe, Texas, and was en route to UTS with a planned approach to Livingston Municipal Airport (00R).

The pilot reported, and GPS/ADS-B data confirmed, that he departed about 1754 and flew to 00R where he made a low approach before he proceeded toward UTS. He stated that the leg from 00R to UTS was flown at 2,500 ft mean sea level (msl). The pilot recalled switching fuel tanks, and about 15 minutes later, the engine started to "give out." He stated that he was too low to complete the emergency procedures for a loss of engine power, and he attempted to glide to an open field but was unable to make it. The airplane subsequently impacted trees.

Certificate:	Private	Age:	20,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Lap only
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	February 20, 2018
Occupational Pilot:	No	Last Flight Review or Equivalent:	May 27, 2019
Flight Time:	89.3 hours (Total, all aircraft), 76.5 hours (Total, this make and model)		

Pilot Information

Aircraft and Owner/Operator Information

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Aircraft Make:	Piper	Registration:	N9754J
Model/Series:	PA28 180	Aircraft Category:	Airplane
Year of Manufacture:	1967	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	28-3854
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	June 13, 2019 Annual	Certified Max Gross Wt.:	2400 lbs
Time Since Last Inspection:	4 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	4405 Hrs at time of accident	Engine Manufacturer:	Lycoming
ELT:	C126 installed, activated, did not aid in locating accident	Engine Model/Series:	O-360-A4A
Registered Owner:	Awmr Llc	Rated Power:	180 Horsepower
Operator:	Awmr Llc	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KUTS,363 ft msl	Distance from Accident Site:	6 Nautical Miles
Observation Time:	23:53 Local	Direction from Accident Site:	249°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.93 inches Hg	Temperature/Dew Point:	32°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Conroe, TX (CXO)	Type of Flight Plan Filed:	None
Destination:	Conroe, TX (CXO)	Type of Clearance:	None
Departure Time:	17:54 Local	Type of Airspace:	Class G

Airport Information

Airport:	Huntsville Muni UTS	Runway Surface Type:	
Airport Elevation:	362 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal, 1 Serious	Latitude, Longitude:	30.782499,-95.487503

The airplane impacted trees and terrain about 6 nautical miles east-northeast of UTS. The accident site was heavily wooded, and the first tree strike was about 50 ft above ground level. The fuselage came to rest about 100 ft and 300° degrees from the initial tree impact. The outboard right wing was located between the initial tree impact and the fuselage. The left wing and the right wing root were located next to the fuselage. One half of the stabilator was located near the outboard right wing, and the other half was located near the fuselage. The engine came to rest at the forward end of the fuselage. It was separated from the fuselage at the engine mounts and remained partially attached by hoses and engine control cables.

The elevator and rudder control remained intact from the control yokes aft to the center stabilator spar. The rudder control system remained intact from the rudder pedals aft to the rudder. The aileron control system exhibited two breaks in the control cable leading to the right aileron control bellcrank. The breaks exhibited signatures consistent with overload failure. The right aileron bellcrank remained attached to the wing structure and the pushrod remained attached to the aileron and the bellcrank. The left aileron bellcrank was separated from the structure and the pushrod was broken at the pushrod spherical end fitting. The remainder of the pushrod remained attached to the aileron. The aileron cables from the wing roots forward to the control yokes remained intact. No anomalies consistent with a preimpact failure or malfunction of the flight control system were observed.

Examination of the cockpit revealed that the fuel selector valve was positioned forward and down, which was in the "off" position.

The airplane's engine was removed from the airframe and mounted onto a surrogate airframe to facilitate a test run. The engine was started and allowed to warm up to about 1,500 rpm. The engine was then advanced to 2,000 rpm, and a magneto check was performed with no anomalies noted. The engine was able to produce power up to 2,200 rpm with the throttle fully advanced.

Additional Information

The accident airplane was equipped with the manufacturer's original fuel selector valve and bezel design; the detent positions formed an "X" pattern. The fuel selector was mounted on the airplane's left sidewall near the pilot's left leg. The lower two detents of the "X" pattern were both "off" positions, while the forward and aft upper detents selected the right and left tanks, respectively. The valve and bezel design on the accident airplane allowed the valve to be rotated without stops to any of the available positions.

The design of the fuel selector bezel and handle was subsequently modified twice by the manufacturer. The second-generation design was a 3-position design with off, left, and right selections. Rotating the handle fully counterclockwise selected the off position, while rotation fully clockwise selected the right tank. The intermediate position selected the left tank.

The third-generation fuel selector added a spring-loaded stop that prevented the pilot from inadvertently selecting the off position. In order to select the off position, the pilot must simultaneously depress the spring-loaded stop and rotate the lever to the off position.

The airplane manufacturer issued several Service Letters (SL) and Service Bulletins (SB) concerning replacement of the fuel selector valve cover and handle. Following the issuance of SL 588 in 1971 notifying operators of an optional service kit to upgrade from the second to third generation design, the Federal Aviation Administration (FAA) issued airworthiness directive (AD) 71-21-08. This AD required operators of airplanes equipped with second-generation fuel selectors to comply with SL 588, but did not require operators of first-generation-equipped airplanes to upgrade their fuel selectors.

The manufacturer issued SL 590 in 1972, which offered the option for airplanes equipped with first generation fuel selectors to upgrade to third generation fuel selectors. SB 840A, issued on November 7, 2013, recommended the installation of third-generation fuel selectors in order to reduce the possibility of pilot mismanagement of the fuel system through inadvertent selection of the "off" position. The accident airplane was included in this SB. There were no FAA ADs requiring the upgrade of first-generation design fuel selectors.

A review of the pilot's airplane rental and flight training history revealed that, of his 89.3 hours of experience in PA28 airplanes, at least 87.4 hours were in airplanes equipped with the third generation fuel selector design. (Only a single 1.9-hour flight, 10 months prior to the accident, could not be verified as to the type of fuel selector installed.)

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Rick Bolton; FAA - Houston FSDO; Houston, TX Damien Galbraith ; Piper Aircrafr; Vero Beach, FL
Report Date:	September 22, 2020
Last Revision Date:	
Investigation Class:	Class 2
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=99629

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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.