Aviation Investigation Final Report

Location:	Moab, Utah	**Accident Number:**	WPR14FA252
Date & Time:	June 18, 2014, 07:36 Local	**Registration:**	N7043M
Aircraft:	Cessna 175	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airline transport pilot was conducting a personal cross-country flight in the accident airplane behind another airplane. Radar data showed that the accident airplane was trailing about 2 to 3 miles behind the lead airplane and that both airplanes were proceeding northwest at 9,400 ft mean sea level (msl). The lead pilot reported that the flight route included flying through a mountain pass at an of elevation 10,150 ft msl. The lead airplane exited the pass to the west, and the lead airplane pilot then lost communications with the accident airplane pilot.

The next day, a search and rescue helicopter pilot located the airplane wreckage on the eastern slope of the pass about 1/2 mile below the mountain pass ridge, in a steep wooded valley, at an elevation of 9,804 ft msl. An on-scene examination was conducted; broken tree tops, vertical witness marks on three trunks, and the compact nature of the wreckage footprint were consistent with the airplane impacting terrain in a near-vertical descent after a low-altitude stall/spin. A postaccident fire destroyed a majority of the airplane. No preimpact mechanical failures or malfunctions were found that would have precluded normal operation.

The terrain rises 1,100 ft vertically over a distance of 2 miles as the mountain pass is approached in the direction that the accident airplane was traveling. The airplane's maximum climb rate at 10,000 ft was calculated to be about 650 ft per minute at 83 mph, which was not sufficient to climb the airplane over the rising terrain at the point that the pilot started the ascent and this led to his exceedance of the airplane's critical angle-of-attack and the airplane entering a stall/spin.

Probable Cause and Findings

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

The pilot's decision to approach rising mountainous terrain at too low an altitude to clear it and his subsequent attempt to climb, which exceeded the airplane's critical angle-of-attack and resulted in a stall/spin.

Findings

Aircraft	Airspeed - Not attained/maintained
Environmental issues	Mountainous/hilly terrain - Decision related to condition
Aircraft	Angle of attack - Not attained/maintained
Personnel issues	Monitoring environment - Pilot
Aircraft	Altitude - Not attained/maintained
Personnel issues	Flight planning/navigation - Pilot
Personnel issues	Decision making/judgment - Pilot

Factual Information

History of Flight

Enroute-change of cruise level	Loss of control in flight (Defining event)

On June 18, 2014, about 0736 mountain daylight time, a Cessna 175, N7043M, collided with mountainous terrain 20 miles southeast of Moab, Utah. The airline transport pilot, who was flying the airplane, was fatally injured, and the airplane was destroyed in a post-accident fire. The airplane was registered to the pilot, and was operated under the provisions of 14 Code of Federal Regulations, Part 91. Visual meteorological conditions prevailed for the flight, and no flight plan had been filed. The flight originated from Durango, Colorado, about 0630, and was destined for Brigham City, Utah.

The accident airplane was in a 2- to 3-mile trail behind the lead airplane, an experimental Glasair Sportsman, flying towards Moab from the east at 9,400 feet mean sea level (msl). The route of flight as described by the lead pilot, was through the saddle between two peaks (South Mountain & Mount Peal) known as the La Sal Pass, elevation 10,150 feet msl. The lead airplane lost communications with the trail airplane after the lead exited the La Sal Pass to the west. The airplane wreckage was located by a Utah Highway Patrol helicopter on June 19th on the eastern slope of La Sal Pass in a steep wooded valley, at an elevation of 9,804 feet msl. A post-accident fire consumed a majority of the airplane and its contents.

Pilot Information

Certificate:	Airline transport	**Age:**	62,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	May 2, 2014
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 4300 hours (Total, all aircraft)		

The pilot, age 62, held an Airline Transport Pilot (ATP) certificate for multiengine land with a B-747 second-in-command rating, and commercial privileges for airplane single engine land, issued May 19, 2006. He held a third-class Federal Aviation Administration medical certificate issued on April 24, 2014, with no limitations. On the pilot's April 24, 2014, medical certificate application he reported that his total flight time was 4,300 hours, and time accumulated within

the previous 6 months was 150 hours. The pilot's log books were never located and are presumed to have been destroyed in the post-accident fire.

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N7043M
Model/Series:	175	**Aircraft Category:**	Airplane
Year of Manufacture:	1958	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	55343
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	2348 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	FRANKLIN
ELT:		**Engine Model/Series:**	6A&6V335 SER
Registered Owner:	REECE MILES K	**Rated Power:**	210 Horsepower
Operator:	REECE MILES K	**Operating Certificate(s) Held:**	None

The two-seat, high-wing, fixed-gear, tail wheel configured airplane, serial number 55343, was manufactured in 1958. It was powered by a Franklin 6A, 220-hp engine and equipped with a McCauley two bladed constant speed propeller. The airframe and engine maintenance records were not located by investigators and presumed destroyed in the post-crash fire. The actual time on the engine and airframe, and the date of the most recent annual inspection, were not determined.

The Cessna technical representative provided information estimating that the performance of the airplane at 2,350 lbs gross weight with the Franklin 220-hp engine would be similar to the Cessna 180 model of airplane at 2,650 lbs gross weight. A Cessna 180 climb performance chart showed that at 2,650 lbs, 10,000 feet, 23 degrees F, the rate of climb that the pilot could expect would be 650 feet per minute at 83 mph.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KCNY,4557 ft msl	**Distance from Accident Site:**	20 Nautical Miles
Observation Time:	07:53 Local	**Direction from Accident Site:**	330°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	29.98 inches Hg	**Temperature/Dew Point:**	18°C / -4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Durango, CO (KDRO)	**Type of Flight Plan Filed:**	None
Destination:	Brigham City, UT (KBMC)	**Type of Clearance:**	None
Departure Time:	06:30 Local	**Type of Airspace:**	Class G

Weather recorded by the Canyonlands Field Airport, Moab, Automated Surface Observation System (ASOS), located about 35 miles northwest of the accident site, at 0753 on June 18th, was clear skies, 10 statute miles visibility, and the wind as variable at 5 knots.

A sounding was retrieved for the accident region at 0900 MDT from the North American Mesoscale (NAM) model. This NAM model sounding estimated wind at 9,500 feet msl to be from about 225° true at 3 knots.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	Unknown
Total Injuries:	1 Fatal	**Latitude, Longitude:**	38.417778,-109.23944

The wreckage was located on a 20-degree slope, in an ephemeral stream bed with green vegetation ground cover and populated with mature aspen trees, at an elevation of 9,804 feet msl. Along the airplane's approximate flight track, in the mile prior to the impact site, the terrain rose about 400 feet per mile. The terrain rose an additional 700 feet from the wreckage location to the La Sal pass, 1 mile further along the intended route of flight.

The wreckage examination was performed on-scene and established that all structural and control components of the airplane were at the accident site. A near vertical descent angle was determined by

broken tree tops, vertical witness marks on three trunks, and the compact nature of the wreckage footprint. A post-accident fire consumed the cockpit, cabin, and right wing. The left wing spar was present, however, the majority of the wing had been destroyed by fire. The left fuel tank exhibited hydraulic deformation and fire damage. The aft portion of the fuselage and tail were present and exhibited heat discoloration and impact damage. The airplane was oriented on a magnetic bearing of 318 degrees measured from tail to nose. Within the main cabin area a large amount of camping equipment was identified, such as tent stakes, a stove fuel bottle, field tie down anchors, metal poles, and pots. The engine was positioned on the uphill side of the wreckage, resting on its left side, and was fire damaged. The engine case was structurally intact, with the majority of the accessories and carburetor destroyed by fire. The propeller hub had separated from the propeller flange. Both propeller blades were loose in the hub. One blade exhibited a longitudinal twist along the entire blade length, and the other blade tip was bent forward. All flight control cables were traced from the cockpit to their respective bell cranks near the flight control surfaces, and all cable ends remained attached to their respective bell cranks. Flap cables were attached to the flap handle and traced to the flap bell cranks. The right flap cable was separated in overload.

On June 27th the engine was examined by the NTSB investigator-in-charge (IIC) at a wreckage recovery facility in Phoenix, Arizona. No preimpact anomalies were identified that would have precluded normal operation of the engine. A examination report is provided in the official docket of this investigation.

No pre-impact failures or mechanical malfunctions were identified that would have precluded normal operation of the airplane.

Medical and Pathological Information

An autopsy was performed on the pilot June 20, 2014, by the Utah Medical Examiner in Salt Lake City, Utah. The cause of death was listed as "Blunt force injuries of head, torso, and extremities."

The Federal Aviation Administration (FAA) Civil Aerospace Medical Institute's (CAMI) Forensic Toxicology Research Team performed toxicology on specimens from the pilot with negative results for ethanol or listed drugs. Tests for carbon monoxide and cyanide were not performed.

Additional Information

Radar Data

The radar data for the two airplanes was obtained from the US Air Force 84th Radar Evaluation Squadron at Hill Air Force Base, Utah.

The two airplanes were not receiving air traffic control services, were using generic "1200" transponder codes, and not specifically radar identified. The radar data indicated that the accident airplane transponder was not transmitting mode C altitude information, while the lead Glasair was. It was possible to distinguish the two aircraft even though they were operating in close proximity to one another, and on the same transponder code.

The radar data indicated that the accident airplane departed Durango approximately 0630, and flew in a north westerly direction. The Glasair established a radar-indicated cruise altitude of 9,400 feet, and the accident airplane, flying in trail, is presumed to have followed at a similar altitude. The lead airplane approached the La Sal pass from the southeast, and the final radar return depicts it 2.4 miles from the accident location at 10,400 feet msl. No further radar information was captured.

Administrative Information

Investigator In Charge (IIC):	McKenny, Van
Additional Participating Persons:	Kent Gibbons; FAA; Salt Lake City, UT Steve Miller; Textron Aviaion (Cessna); Wichita, KS
Original Publish Date:	May 23, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=89489