Aviation Investigation Final Report

Location:	St. George, Utah	**Accident Number:**	WPR18LA217
Date & Time:	August 11, 2018, 08:55 Local	**Registration:**	N218B
Aircraft:	Smith HORNET	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Video from a security camera at the airport showed the airplane taxiing toward the end of the runway, and then the airplane was no longer in the camera's view. Shortly thereafter, the airplane came back into the camera's view and was seen just above the runway surface in a nearly wings vertical, nose low attitude just before impact with the ground.

The owner of the airplane reported that the pilot had accumulated thousands of flight hours and estimated that he had a total of 5 flight hours in the accident airplane. The owner also stated that the pilot had flown the airplane only when the wind was calm to ensure that he could understand the airplane and its handling characteristics.

Postaccident examination of the airframe revealed no anomalies that would have precluded normal operation.

The pilot's toxicology results indicated that he had taken a medically disqualifying medication. However, no evidence indicated that the use of the medication was a factor in the accident.

The airplane owner stated that a strong gust of wind, at a velocity that was strong enough to shake the building he was in, occurred just before the accident. About the time of the accident, the wind direction was reported as perpendicular to the runway surface, with a wind speed of 8 knots. No gusts were reported. The owner of the airplane also stated that random gusts of wind were relatively common at the airport due to the surrounding desert terrain. Thus, it is likely that the pilot experienced an unexpected strong gusting crosswind and lost control of the airplane during the takeoff sequence.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's loss of airplane control during takeoff due to an unexpected gust of wind.

Findings

Personnel issues	Aircraft control - Pilot
Personnel issues	Total experience w/ equipment - Pilot
Environmental issues	Crosswind - Effect on operation
Environmental issues	Gusts - Effect on operation

Factual Information

History of Flight

Takeoff	Loss of control in flight (Defining event)
Takeoff	Collision with terr/obj (non-CFIT)

On August 11, 2018, about 0855 mountain daylight time, an experimental amateur-built Hornet airplane, N218B, impacted terrain during takeoff from St. George Regional Airport, St. George, Utah. The pilot was fatally injured, and the airplane sustained substantial damage. The airplane was registered to the Western Sky Aviation Warbird Museum Inc. and was operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed, and no flight plan was filed for the local flight.

Video from a security camera at the airport showed the airplane taxiing toward the end of the runway, and then the airplane was no longer in the camera's view. Shortly thereafter, the airplane came back into the camera's view and was seen just above the runway surface in a nearly wings vertical, nose low attitude just before impact with the ground. The airplane's owner reported that, just before the accident, a gust of wind "came out of nowhere" that shook the building in which he was located.

First responders reported that, when they arrived on scene about 10 minutes after the accident, the engine was still running.

Pilot Information

Certificate:	Airline transport; Commercial	**Age:**	69,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
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 With waivers/limitations	**Last FAA Medical Exam:**	November 8, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 7800 hours (Total, all aircraft), 5 hours (Total, this make and model)		

The owner of the airplane reported that the pilot "was heavily involved" with the accident airplane, was "very meticulous" about maintenance and safety, and ensured that the airplane operated "as optimally as possible." The airplane owner also stated that the pilot had accumulated "thousands" of flight hours, some of which included light airplanes that were heavier than the accident airplane. The airplane owner estimated that the pilot had accumulated a total of about 5 flight hours in the accident airplane. Since the airplane was

new, the pilot taxied the airplane around "quite a bit" and flew it only when the wind was calm to ensure that he could understand the airplane and its handling characteristics.

Aircraft and Owner/Operator Information

Aircraft Make:	Smith	**Registration:**	N218B
Model/Series:	HORNET	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	0018
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	March 26, 2018 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:	4 Hrs	**Engines:**	Reciprocating
Airframe Total Time:	17 Hrs at time of accident	**Engine Manufacturer:**	Hirth
ELT:	Not installed	**Engine Model/Series:**	2706
Registered Owner:		**Rated Power:**	66 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

According to the airplane's owner, the airplane was built by its previous owner, who did not fly or certify the airplane. The previous owner subsequently donated the airplane to the Western Sky Aviation Warbird Museum, and the museum certified, operated, and maintained the airplane. At the time of the accident, the airplane had accumulated 17 hours total time.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SGU,2884 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	08:56 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	90°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	31°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	St. George, UT (SGU)	**Type of Flight Plan Filed:**	None
Destination:	St. George, UT (SGU)	**Type of Clearance:**	None
Departure Time:	08:55 Local	**Type of Airspace:**	Unknown

At the time of the accident, the wind direction was perpendicular to the departure runway with a reported wind speed of 8 knots. No gusts were recorded. The owner of the airplane mentioned that "random gusts of wind" similar to the gust just before the accident were relatively common at the airport due to the surrounding desert terrain.

Airport Information

Airport:	St. George Regional Airport SGU	**Runway Surface Type:**	Asphalt
Airport Elevation:	2883 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	1	**IFR Approach:**	None
Runway Length/Width:	9300 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	37.035278,-113.506111

The airplane came to rest in the dirt about 35 ft from the edge of the runway surface. The nosewheel was separated due to fracture, and the airplane came to rest in a nose-down attitude. The forward fuselage was bent toward the left. Both the left and right wings exhibited upward crush damage to the wingtips, and the tail was mostly undamaged. The cabin and fuselage structure were twisted, and its fabric was ripped in various locations.

Flight control continuity was established throughout the airframe. Postaccident examination of the airframe revealed no anomalies that would have precluded normal operation.

Medical and Pathological Information

The Utah Department of Health, Office of the Medical Examiner, Taylorsville, Utah, performed an autopsy of the pilot. His cause of death was blunt force injuries.

Toxicological testing performed by the Federal Aviation Administration Forensic Sciences Laboratory identified ibuprofen in the pilot's urine specimens; venlafaxine (and its active metabolite desmethylvenlafaxine), fexofenadine, and tamsulosin in the pilot's blood and liver specimens; and azacyclonol (a metabolite of fexofenadine) in the pilot's liver specimens. No ethanol or carbon monoxide were found in the pilot's specimens.

Venlafaxine (commonly marketed as Effexor) is an antidepressant used to treat depression, anxiety, and panic disorders and has some off-label use for chronic pain management. Side effects can include dizziness and drowsiness, and cautions are specified about operating heavy machinery or performing other hazardous tasks while taking this medicine. Venlafaxine is a medically disqualifying medication for pilots.

Fexofenadine (commonly marketed as Allegra) is an over the counter nonsedating antihistamine used to treat seasonal allergy symptoms. Tamsulosin (commonly marketed as Flomax) is a nonsedating medication used to treat an enlarged prostate. Ibuprofen is a nonsteroidal anti-inflammatory drug used to relieve pain and swelling.

Administrative Information

Investigator In Charge (IIC):	Link, Samantha
Additional Participating Persons:	Destin Hinton; Federal Aviation Administration; Salt Lake City, UT
Original Publish Date:	May 19, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98041